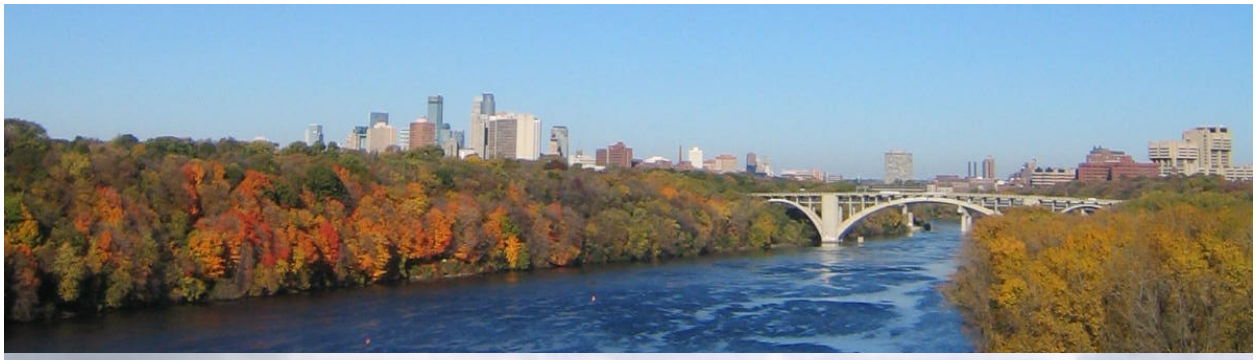

Minneapolis Bicycle Master Plan

Access Minneapolis **June 2011**

Minneapolis Bicycle Master Plan
Chapter 1- Introduction

Acknowledgements

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Plan prepared in consultation with the Plan Technical Review Team, Minneapolis Bicycle Advisory Committee, and is based on public input.

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Acknowledgements

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Richard Anderson—Resident
Billy Binder—Resident
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Chapter 1 - Introduction

1.1 Executive Summary

1.1.1 Plan Organization: The Minneapolis Bicycle Master Plan is organized into 8 chapters; an introduction chapter, a bicycling history chapter, a policy framework chapter, a goals/objectives/benchmarks chapter, a needs analysis chapter, a project identification/prioritization chapter, and a funding chapter.

Above: Bus on the Nicollet Mall

1.1.2 Purpose of the Bicycle Master Plan: The purpose of the Bicycle Master Plan is to establish goals, objectives, and benchmarks that improve safety and mobility for bicyclists and increase the number of trips taken by bicycle. The Bicycle Master Plan includes bicycle policy, existing conditions, a needs analysis, a list of projects and initiatives, and funding strategies to be implemented to complete the plan. This plan will replace the 2001 Bikeways Master Plan and the 2001 5-Year Bikeways Plan.

Above: Abandoned bicycle in Downtown Minneapolis

1.1.3 Community Process: A public meeting was held in June 2008 where over 150 people attended three sessions at Minneapolis City Hall. It took over one year to prepare this plan and an additional year to prepare the Minneapolis Bicycle Design Guidelines. Five additional public meetings were held in August and September 2010 to receive public comment on the draft plan. There was a 45-day comment period beginning on August 17, 2010 and ending on October 1, 2010. The Minneapolis Bicycle Advisory Committee reviewed all comments and offered suggestions for improvement.

Above: Biker at Glenwood and 12th Ave.

Above: Downtown Minneapolis skyline

1.1.4 Bicycle Plan Content: The Minneapolis Bicycle Master Plan includes:

- A new Bikeways Master Plan Map that shows proposed facilities (see following page).
- A vision statement and a list of guiding principles.
- A look at the history of bicycling in Minneapolis.
- A close examination of existing policies pertaining to bicycling.
- Objectives, benchmarks, performance measures, and responsibilities for three bicycling goals.
- An existing conditions analysis.
- A needs analysis for the 6 E's; education, encouragement, enforcement, engineering, equity, and evaluation.
- A detailed on-street and off-street bikeway gap analysis.
- A list of proposed non-infrastructure projects and a process for prioritizing bicycle projects.
- A discussion of capital and maintenance funding strategies.

Above: Winter biker on the Nicollet Mall

Above: Cedar Lake Trail at Glenwood Ave

Above: Cedar Lake Trail at Cedar Lake Road

1.1.5 Highlights: The Minneapolis Bicycle Master Plan intends to accomplish the following:

- Reduces bike crashes/injuries by 10% every year and cuts fatalities in half every 5 years.
- Identifies dozens of infrastructure and non-infrastructure projects/initiatives.
- Adds 183 miles of bikeways at a cost of $270 million ($134 million without the Grand Rounds Completion). It will take 30 years to complete this goal.
- Identifies full build-out infrastructure maintenance costs to be $1.3 million/year.
- Cuts bicycle theft through targeted enforcement and education.
- Adds 300 bicycle parking spaces each year through the City's 50/50 cost share program.
- Expands bike share in Minneapolis to all parts of the city; doubles the number of locations where bicycles can be rented by 2015.
- Highlights existing policies that strengthen bicycling within the city.
- Discusses funding sources for capital and maintenance funding.
- Recommends additional bicycle education, encouragement, and enforcement.
- Ensures that all residents are within 1 mile of a trail, 1/2 mile of a bike lane, or 1/4 mile of a signed bike route by 2020. The plan encourages innovative treatments where appropriate.

Above: Midtown Greenway near West River Parkway

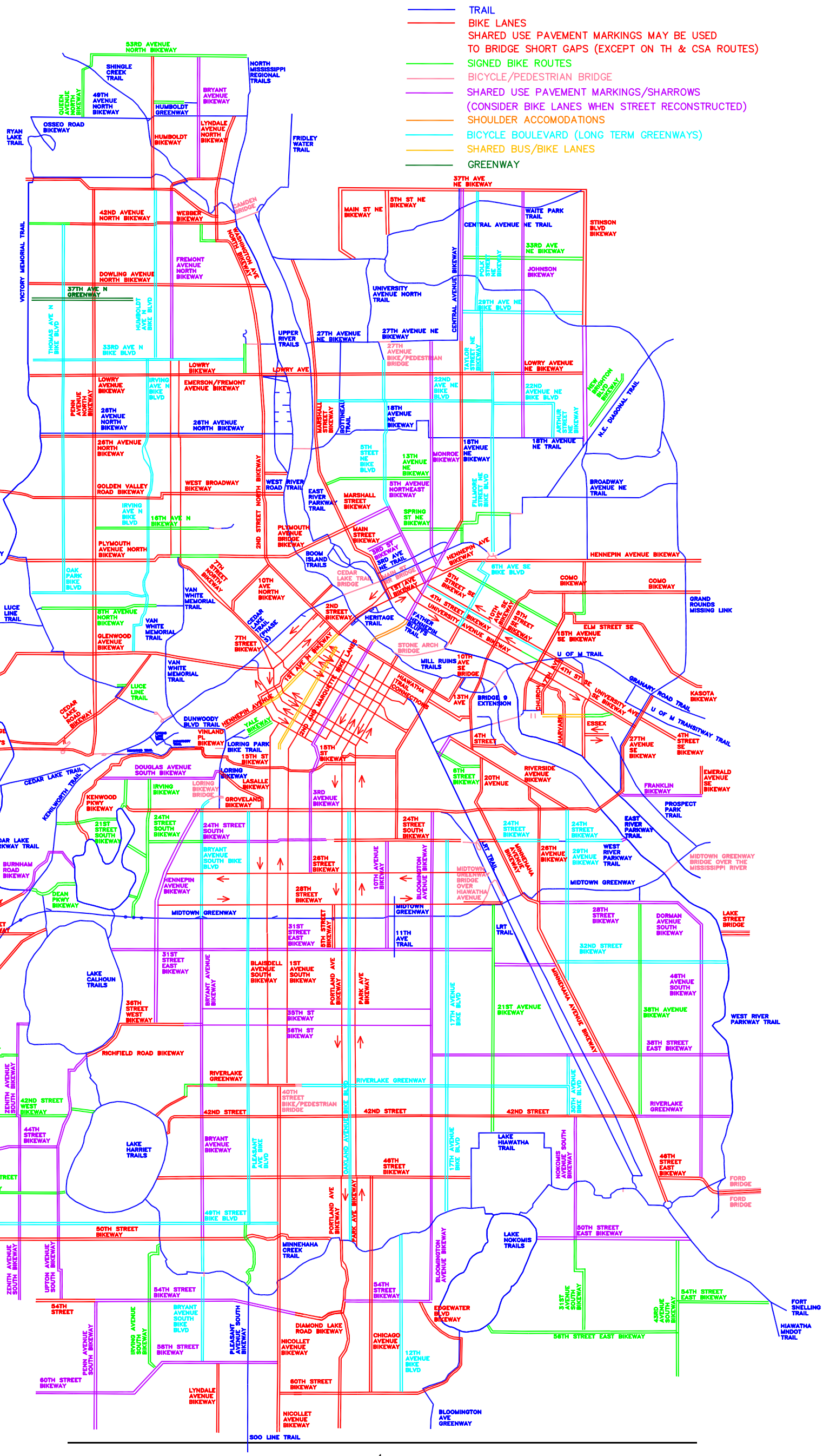
Above: West River Parkway Trail

The Bicycle Advisory Committee Recommendations for Implementation of the Bicycle Master Plan also includes the following topics:

- Bike Plan Amendment Process and BAC Roles.
- Intergovernmental Relations Topics.
- Policy Recommendations.
- A Prioritizing Criteria Chart for the BAC.
- Capital Program Implementation Strategies.
- Maintenance Program Implementation Strategies.

Above: West River Parkway at Lake Street

Figure 1.1 - Bikeways Master Plan



1.1.6 Document Overview: The Minneapolis Bicycle Master Plan is organized into 8 chapters:

Chapter 1—Introduction: This section states the purpose of the plan, establishes a vision, discusses guiding principles, explains the community input process, and presents how the plan is organized.

Chapter 2—History of Bicycling in Minneapolis: This chapter looks at bicycling in Minneapolis through the past century.

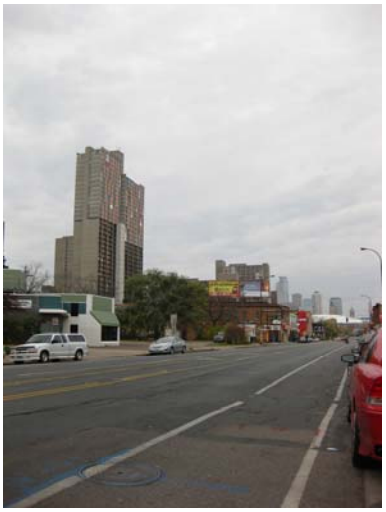
Chapter 3—Policy Framework: The policy framework evaluates the various plans currently in place including the 2001 Bicycle Master Plan, the Hennepin County Bicycle Transportation Plan, the Metropolitan Council Regional Trails Plan, and the Minneapolis Comprehensive Plan.

Chapter 4—Existing Conditions: This section examines the existing state of bicycling throughout the city. The section looks at bicycle program strengths and weaknesses with emphasis placed on what has been working well for the city.

Chapter 5—Needs Analysis: The needs analysis is a staff assessment on what is needed to make the city more bicycle friendly. Although the city has demonstrated success with the bicycle program, improvement is still needed.

Chapter 6—Goals, Objectives, and Benchmarks: Setting goals, objectives, and benchmarks are important steps in creating a bicycle friendly city. This section looks at goals, objectives, and benchmarks for each of the E's; education, encouragement, engineering, enforcement, evaluation, and equity.

Chapter 7—Project/Initiative Identification and Prioritization: This section takes a look at all of the suggested projects and categorizes them by region.



Above: Riverside Avenue Bike Lane

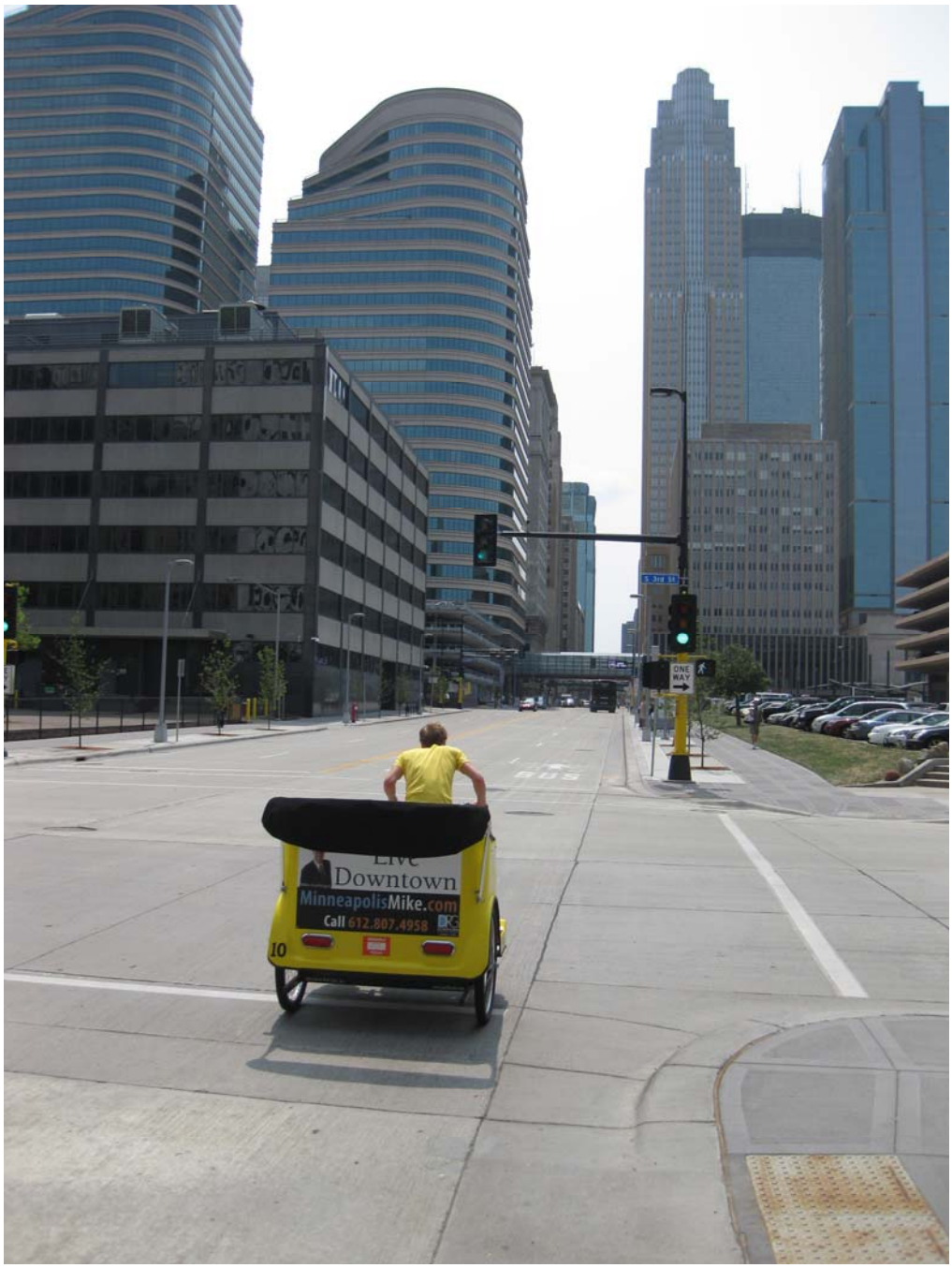
Above: West River Parkway ramp approaching Lake Street

Above: Minnehaha Avenue Bike Lane

1.1.6 **Document Overview:** Continued

Chapter 8—Funding and Implementation Strategies: The final chapter looks at what it will take in terms of funding options to complete the plan with limited available resources.

Appendix: The appendix includes public comments and other useful supporting information.



Above: Pedicab on 2nd Avenue in Downtown Minneapolis.

1.2 Purpose and Vision

1.2.1 Plan Purpose: The Minneapolis City Council and Mayor directed city staff to complete a new Bicycle Master Plan in 2008 as one of the recommendations from the Access Minneapolis 10-Year Transportation Plan. Unlike bike plans of the past, which were maps of proposed bicycle facilities, this plan includes policy language, goals, objectives, and benchmarks in addition to an examination and prioritization of both infrastructure and non-infrastructure projects and initiatives. The Minneapolis Bicycle Master Plan is intended to serve all types of bicyclists for trips of all purposes. The City of Minneapolis is committed to maintaining a safe and vibrant city where bicycling is encouraged and embraced. A comprehensive Bicycle Master Plan is the first step in achieving a better city for bicycles and creates the framework for future projects and initiatives.

The Purpose of the Bicycle Master Plan:

To establish goals, objectives, and benchmarks that improve safety and mobility for bicyclists and increase the number of trips taken by bicycle. The Bicycle Master Plan includes bicycle policy, existing conditions, a needs analysis, a list of projects and initiatives, and funding strategies to be implemented to complete the plan.

1.2.2 Vision: This plan is intended to guide the city with regard to all topics relating to bicycling for years to come. The Minneapolis Bicycle Advisory Committee (BAC) advises the Mayor, City Council, and Minneapolis Park and Recreation Board and had an active role in the creation of this document. The vision was composed by the Minneapolis Bicycle Advisory Committee and illustrates what could become a reality if this plan is fully implemented. In order to accomplish this vision, a balanced approach needs to be taken. The League of American Bicyclists recommends that a balanced bicycle program focus on education, encouragement, engineering, enforcement, equity, and evaluation initiatives. Determining the varying needs of all bicyclists and completing an assortment of cost effective projects is also critical. It is important that all stakeholders including residents, elected officials, city staff, and bicyclists work cooperatively with a common vision.

The Vision:

All bicyclists enjoy a welcoming environment; riding safely, efficiently, and conveniently within the City of Minneapolis year-round.

1.3 Guiding Principles and the Minneapolis Commitment to Bicycling

1.3.1 Guiding Principles: The Bicycle Master Plan Guiding Principles are basic philosophies on how bicycle plan goals should be approached. Guiding principles should help guide priorities and should represent the sentiment and values of the elected officials, staff, advocates, and the public. Below are descriptions:

- Improve Safety—Safety is considered first and foremost. Goals, objectives, and policies must consider the safety of bicyclists and other users in a corridor.
- Improve Mobility—Goals, objectives, and policies should make it easier for bicyclists to move throughout the city more efficiently. Mobility should be enhanced for all types of bicyclists and projects should better facilitate trips for different purposes.
- Increase the Numbers of Bicyclists— Goals, objectives, and policies should facilitate more bicyclists. Increasing the number of bicyclists is one of the fundamental values that drive the bicycle program.
- Increase Mode Share— Goals, objectives, and policies need to work toward higher bicycle mode share. Efforts should be made to balance the needs of pedestrians, transit, freight, motor vehicles, and bicyclists.
- Ensure Community Support—Goals, objectives, and policies need to work toward improving the community. Efforts should be made to facilitate neighborhood input and to respect residents concerns and business needs.
- Ensure Wise Investments—Goals, objectives, and policies need to guide projects and initiatives that consider capital costs in addition to operation and maintenance costs. The value of a project or initiative should consider both cost and need. Both public and private funding partnerships are strongly encouraged.

Above: Bicycle in Downtown Minneapolis

Above: University of Minnesota Bike Parking

Above: Nice Ride kiosk at the Guthrie Theatre

1.3.2 The Minneapolis Commitment to Bicycling:

The Minneapolis Commitment is a promise that the city will commit to the following:

- The City of Minneapolis recognizes that bicycling is a mode of transportation that has many tangible benefits to the people of Minneapolis, including better health, a cleaner environment, less traffic congestion, and financial savings both to government and to individuals.
- Minneapolis will continue to be a national leader in bicycle infrastructure and programming, investing in projects and initiatives that improve safety, increase the number of people who choose to bicycle and foster a bicycle friendly environment that supports a thriving bicycle culture.
- Minneapolis will use an integrated strategy that includes education, encouragement, enforcement, engineering, equity and evaluation to continue to make Minneapolis a more bicycle friendly place and to judge progress.

Above: Minneapolis is considered to be a Bicycle Friendly Community by the League of American Bicyclists.

Above: Bike Box at the intersection of Franklin Avenue and East River Parkway.

1.4 Community Involvement

1.4.1 Community Process—The city solicits community input as part of all citywide plans and capital projects. Projects and initiatives can originate from bike advocates, elected officials, residents, businesses, neighborhood groups, or the general public. The Minneapolis Bicycle Master Plan is a document that will need to be updated to reflect changing conditions and needs. Updates are anticipated every 5 to 10 years. Included in the Appendix are all the comments received by the public. This plan is intended to serve the city for years to come.

Above: West River Parkway Trail

1.4.2 Public Input—This plan is shaped by the comments that have been received by the public at the June 2008 and Summer 2010 public open houses and from past bike plans. Open house participants were able to ask questions, to comment on plan content, to suggest improvements, and to learn more about the bicycle program. A survey was also conducted in 2008. As part of this process the Minneapolis Bicycle Advisory Committee reviews public comments and recommends plan changes. The city has attempted to draft a plan that when implemented meets the needs of as many bicyclists as possible while mitigating negative impacts for those who live or work in a given improvement area. Many of the projects and initiatives in this plan have been derived from the 2001 Bikeways Master Plan process, where all 81 Minneapolis neighborhoods had the chance to suggest bicycle projects. Some of the 2001 projects have already been accomplished, however many are still in the planning or resource identification phase. Dozens of projects have been suggested over the years at community meetings, from citizen groups, from bicycle organizations, and from technical studies.

Above: University of Minnesota

Above: University of Minnesota

Chapter 2 – History of Bicycling in Minneapolis

2.1 Chapter Overview

2.1.1 Looking Back—The City of Minneapolis has been at the forefront of bicycling since bicycles were introduced to the United States in the late 1800's. Many of the first streets to have been paved also became the city's first bicycle routes (many of these corridors are still bike routes). As bicycling became more popular during the turn of the century, cycle paths were added to roadway boulevards (where trees exist today). Bicycling in Minneapolis is not just a recreational activity but a way to get around. Bicycling has been and always will be part of the local culture.

Above: Powderhorn Lake in 1937. Courtesy MHS.

Above: Woman riding antique bicycle in 1938. Courtesy MHS.

Above: Cyclist in 1938. Courtesy MHS.

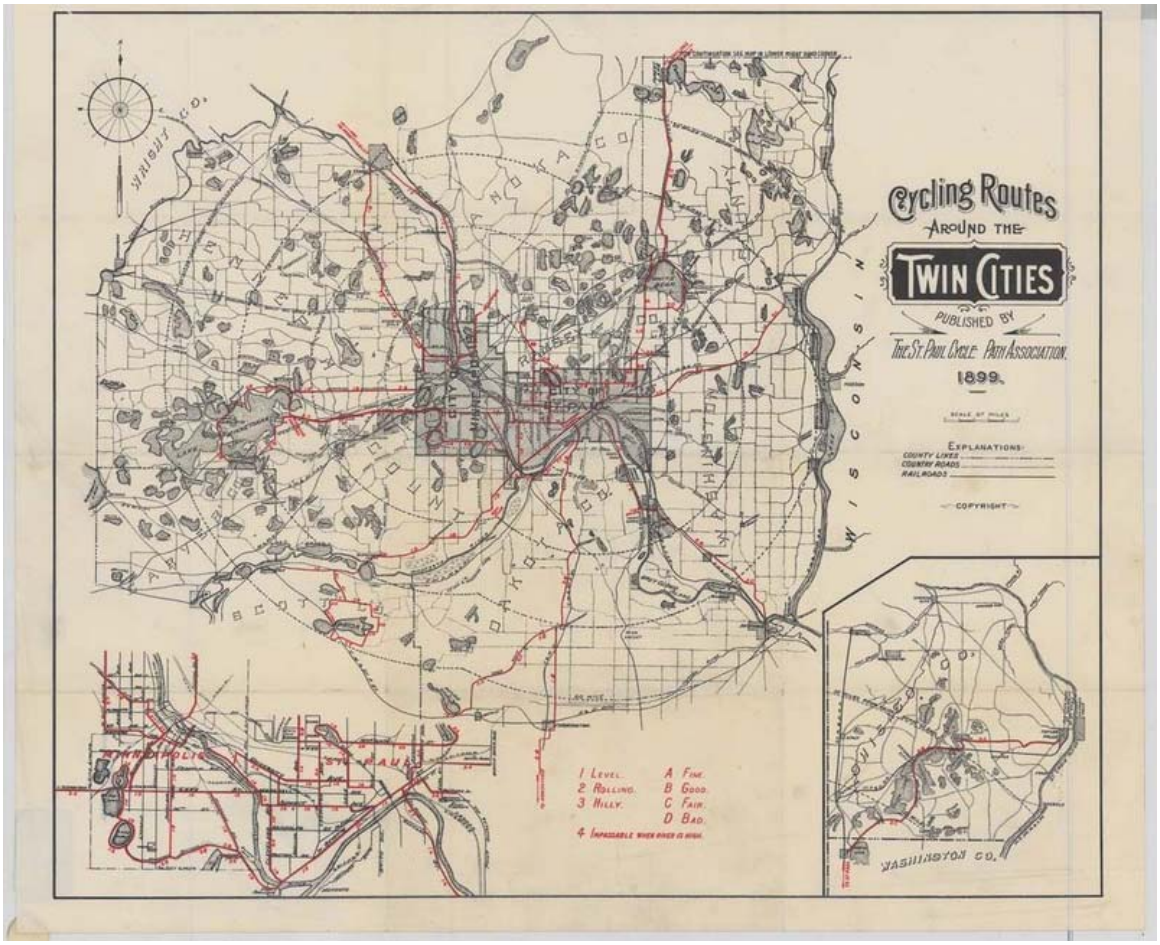
Above: Women bicyclists in 1940 Courtesy MHS.

Above: Newspaper boy in 1950. Courtesy Minnesota Historical Society (MHS).

2.2 Bicycling at the Turn of the Century

Above: This 1905 photo shows streetcars, bicycles, horses, wagons, automobiles, and pedestrians causing traffic congestion at the intersection of 6th Street South and Nicollet Avenue in Downtown Minneapolis. Photo courtesy of the Minnesota Historical Society

2.2.1 The First Paths—The first cycle paths were built by the Minneapolis Park and Recreation Board in 1895 along Kenwood Parkway and along Lake Harriet in 1896. A path was also constructed along Lake St between Minnehaha Ave and the Mississippi River in 1896. The Minnehaha Creek Trail was constructed in 1897 with numerous cycle paths to follow in 1898. Within 10 years the cycling craze was over, and many of the cycle tracks disappeared.



Above: 1899 Twin Cities Cycling Map. Map courtesy of the Minnesota Historical Society. In 1902 the City Engineer reported that there were a total of 202,718 residents in the City of Minneapolis. At that time there were 306.51 miles of graded streets, 103.11 miles of paved streets, and 43.54 miles of bicycle paths.

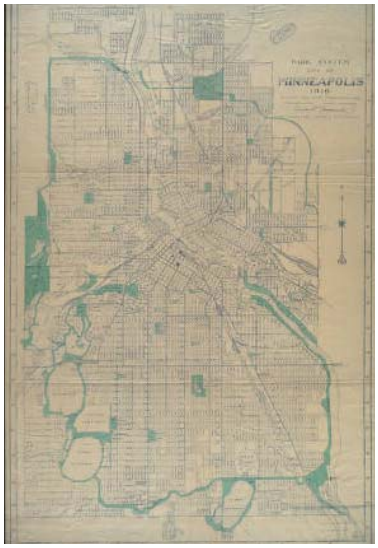
2.2.2 Bicycle Registration—Although bikes no longer need to be licensed, there was a time when the City of Minneapolis had a full-time bicycle inspector to enforce cycling laws and an ordinance requiring cyclists to buy annual tags for their bikes. By 1903, at the height of the cycling craze, 30,000 tags were sold annually in Minneapolis. The bike tags cost 50 cents per year, and proceeds helped fund cycle path construction. In 1901, there were 40 miles of paths in the city. Today, Minneapolis has 127 miles of paths. A headline in a 1900 *Minneapolis Journal* article read: "Bicycle Inspector Connors Has More Than He Can Handle" and went on to report that Full-time Bicycle Inspector E.M. Connors was in need of another officer to assist in the problem of "stolen wheels." The Minneapolis-based Minnesota Cycle Pump Company opened for business in 1900 and installed 500 pump machines on street corners in Minneapolis and Saint Paul. For a penny, cyclists could get 40 cranks to fill up flats.

2.2.2 Century Rides—Women were at the forefront of the turn-of-the-century cycling craze. Female racers used to ride 100 mile, non-stop "centuries." Here are two reports from the Sports section of the *Minneapolis Journal* in two 1900 articles:

"Miss Blanche Boucher finished a 200-mile ride last evening in 17 hours and 30 minutes. She started from Monk's place at Lake Calhoun, at 3 o'clock yesterday morning and was paced by tandem teams throughout the day. She stood the strain well and looked fit for another century at the finish."

"Mrs. James McIlrath Jr. started last Friday morning at 9 o'clock over the St Paul – Minnetonka century course, and, before stopping, rolled up five consecutive centuries, finishing at 8 o'clock Sunday evening, one hour within the limit of 60 hours. So far as known this is the longest ride ever made by a lady."

2.3 The Development of the Minneapolis Parks System



Above: 1916 Theodore Wirth Map of Minneapolis Parkways: Courtesy of the MPRB.

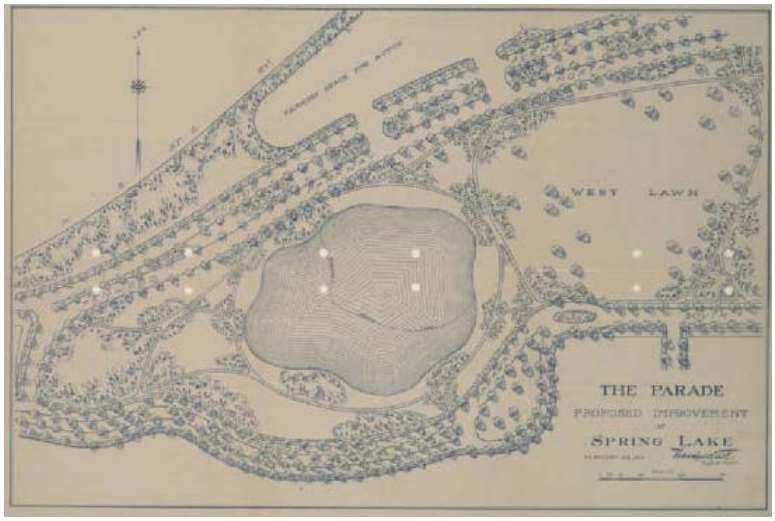
2.3.1 Park History—Minneapolis has one of the best park systems in the US because of the planning that was done over 100 years ago. The Minneapolis Board of Park Commissioners was established in 1883 and was tasked by the legislature to develop a park system.

Envisioned by Horace Cleveland and under the direction of Captain William Morse Berry, the Board of Park Commissioners began acquiring property in 1884 for the park system. Between 1884 and 1905 the Board of Park Commissioners acquired property and established parks at the Chain of Lakes, Minnehaha Falls, Saratoga-Springs-Glenwood, Powderhorn Lake, Minnehaha Parkway, East River Road, Columbia Pkwy, and the Parade.

Theodore Wirth became parks superintendent in 1906 and served until 1935. Wirth is credited for advancing the Minneapolis Grand Rounds system and completing numerous park projects. Numerous pathways were created during his tenure including trails along the Chain of Lakes and along the Parade corridor.

Under the direction of Superintendant Christian Bossen, park and trail investment continued during the Great Depression utilizing federal funding, keeping hundreds of local workers employed during this period.

The original Minneapolis Park system laid the foundation for today's trail system. Without the investment and foresight of past commissioners and superintendents, the park and trail system would not be as vast as it is today.



Left: The 1913 map above shows an early plan for the Parade, which connected Kenwood Parkway to Loring Park. Much of the land in this area was donated by Thomas Lowry and William Dunwoody. For much of the 20th Century the Parade fields were filled with people playing football, baseball, softball, and tennis. After Parade Stadium was built in 1951, the site hosted many professional football games and softball championships. Plan courtesy of the MPRB.

2.4 Bicycling in the 20th Century

2.4.1 1920 to 1970—The 1920's saw a tremendous boom in the development of roadways throughout the country. With more people driving automobiles, bicycles were now seen as children's toys. Bicycle technology improved greatly during the 1930's and 1940's with the introduction of quick release hubs, the cable shifted derailleur, and better tires. The development of the interstate system in the 1950's and 1960's allowed people to live further from the cities and most of these new suburbs did not design with bicycles in mind.

Photo: This photo from around 1940 shows a walking path around Lake of the Isles. A bridle path was located where the bicycle trail is located today. Photos courtesy of the Minnesota Historical Society.

2.4.2 1970 to 1990—Increased environmental awareness and fuel shortages in the 1970's led to more people using bicycles as a mode of transportation. The City of Minneapolis and its agency partners have been working for years to develop a system of designated bikeways throughout the city. In the 1970's the Minneapolis Park and Recreation Board (MPRB) improved most of the Grand Rounds trail system, creating a paved trail loop around the perimeter of the city. Although this trail system is one of the best bikeway systems in the nation, its primary purpose was to serve recreational riders. Recognizing the need to serve utilitarian and commuter bicyclists, the city added a network of bicycle route signs near the University of Minnesota Campus in the 1970's. Many of these bike routes still exist today.

Above: This "fun map" from 1940 shows the Minneapolis Grand Rounds route. Often called the "Emerald Necklace" the Minneapolis Grand Rounds is a 50 mile National Scenic Byway. Courtesy Minnesota Historical Society.

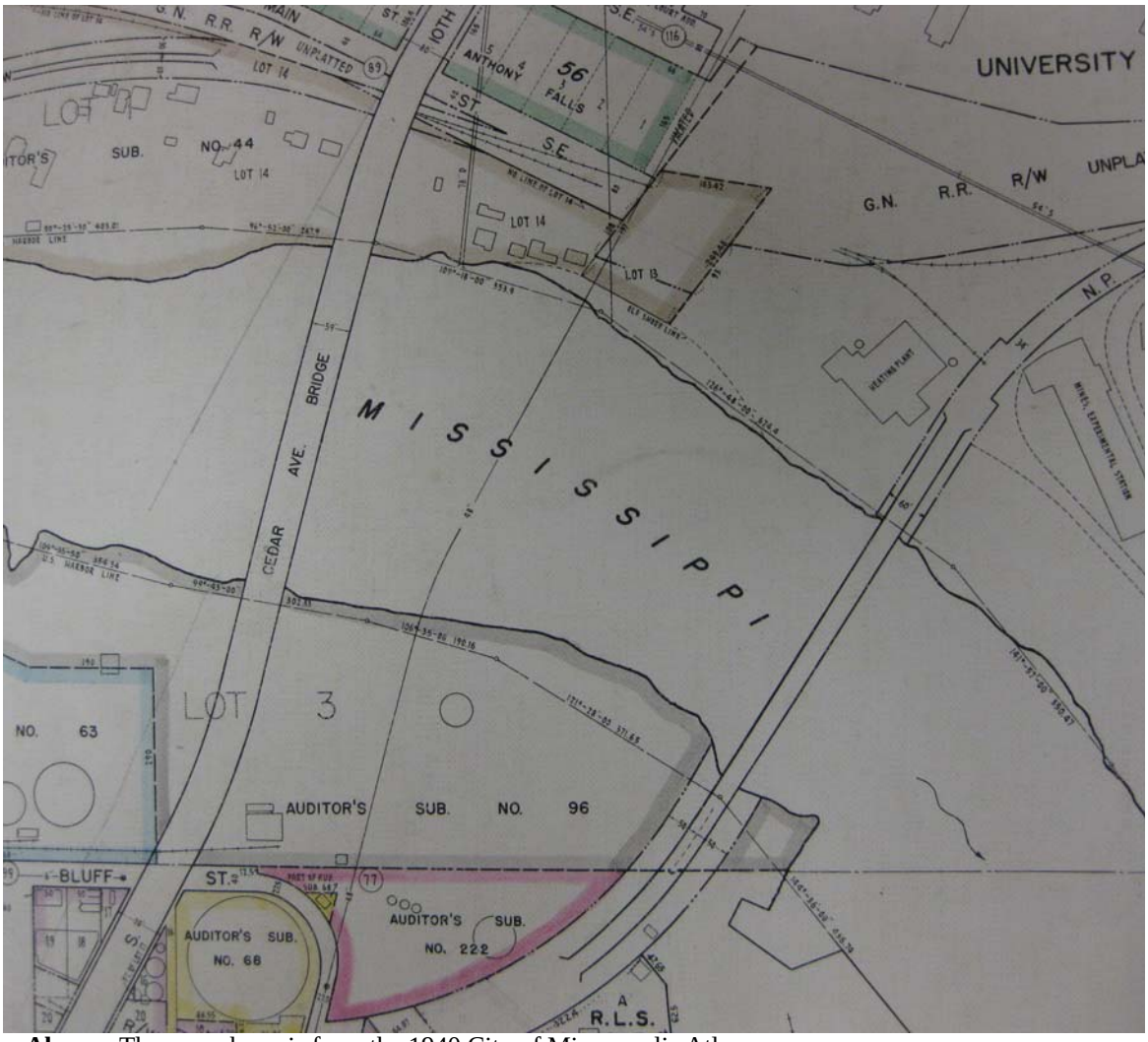
2.4.3 1990's—In 1991 Congress passed the Intermodal Surface Transportation Equity Act, (ISTEA), which provided a dedicated funding source for bicycle projects. Utilizing this program, MnDOT refurbished the Stone Arch Bridge in 1994 and the City of Minneapolis and MPRB constructed the Cedar Lake Trail in 1995. The Kenilworth Trail was built in 1999.

2.5 Then and Now

2.5.1 10th Avenue Bridge—The 10th Avenue Bridge was constructed between 1926 and 1929 and was originally the Cedar Avenue Bridge. The bridge currently carries traffic and accommodates both bicycles and pedestrians.

2.5.2 Bridge #9—Bridge #9 is a deck truss bridge over the Mississippi River that was originally constructed by the Northern Pacific Railway in 1924 to replace a railroad corridor that ran parallel to Washington Avenue through the University of Minnesota campus. Bridge #9 was purchased by the city in 1986 for $1 after rail service ended in 1981. The bridge was turned into a bicycle/pedestrian bridge in 1999.

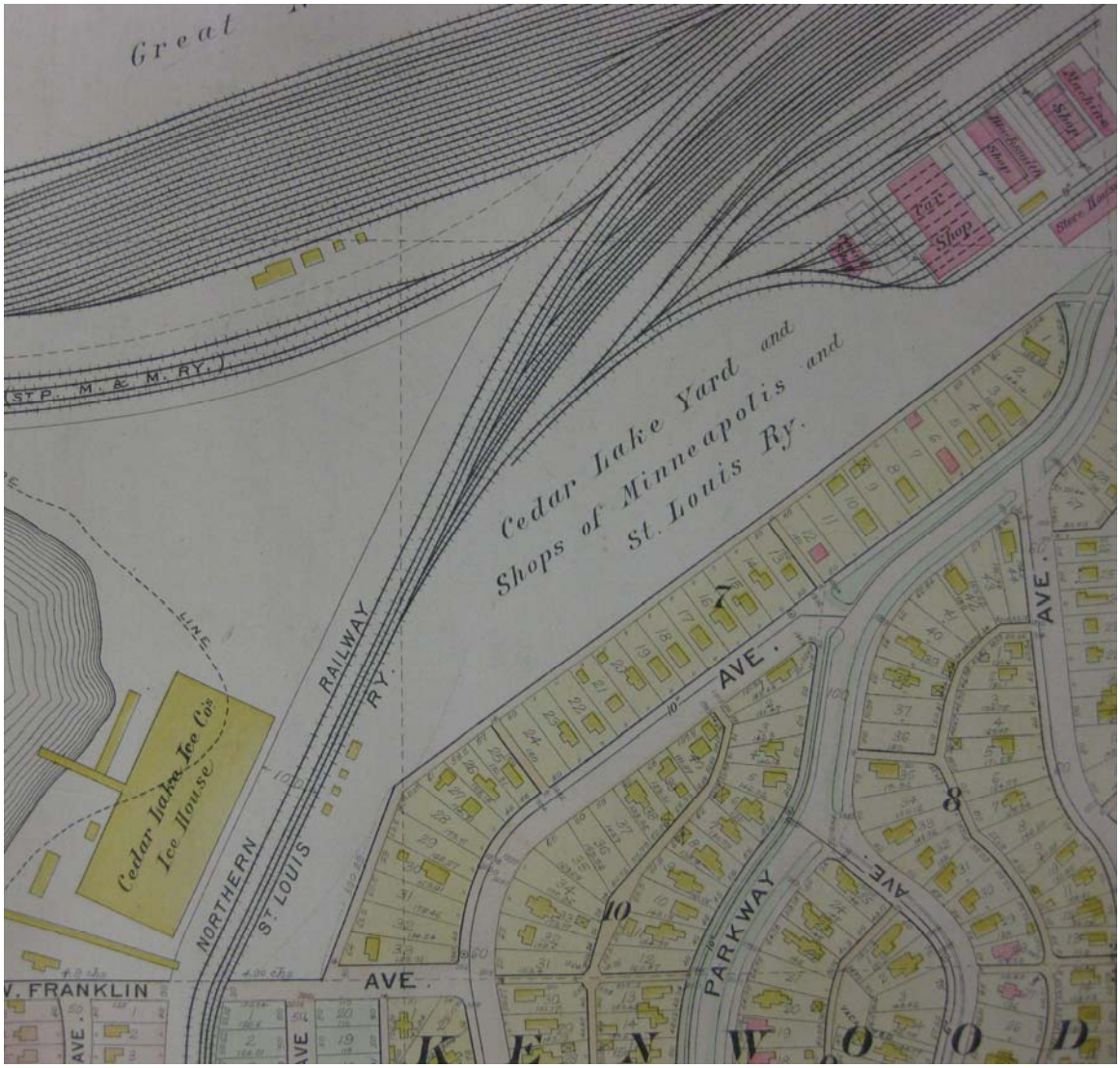
Above: 10th Ave Bridge and Bridge #9 today.



Above: The map above is from the 1940 City of Minneapolis Atlas.

2.5.3 Cedar Lake Trail—Where the Kenilworth Trail and Cedar Lake Trail intersect, a large rail switching yard used to exist. In 1989 a group of residents formed the Cedar Lake Park Association to raise money to purchase 28 acres from the railroad. By 1991 the group had raised $1.7 million in private and state funding and the Minneapolis Park and Recreation Board acquired the property. This purchase facilitated the construction of the Cedar Lake Trail in 1995 and the Kenilworth Trail in 1999. The parcel has since been added to the regional park system and has been restored to a native setting with prairie grasses and wildflowers.

Above: Cedar Lake Regional Park today.



Above: Cedar Lake Yard in 1914.

2.5.4 Hennepin Avenue Bridge—The crossing of the Mississippi River at Hennepin Avenue looked much different 100 years ago when a steel arch bridge was in place. The steel arch bridge was completed in 1891 and lasted until 1990 when the existing bridge was completed by Hennepin County. Before the steel arch bridge there were two previous bridges. The first bridge was opened in 1855 as a toll bridge and the second bridge was finished in 1876. The existing bridge is wide enough to facilitate bike lanes in both directions in addition to wide sidewalks on both sides of the bridge for bicycles and pedestrians to share. There are trail connections on both sides of the bridge.

Photo: The Hennepin Avenue Bridge today.

Above: Hennepin Avenue Steel Arch Bridge in 1914.

2.5.5 Lake Harriet Trails—The land surrounding Lake Harriet was acquired by the Minneapolis Park and Recreation Board in 1885 and a parkway was completed the following year. In 1896 a separated bicycle trail was constructed around the lake located between the walking paths and the parkway. In 1914 the bicycle path was replaced by a bridle (horse) path. The current trail is one of the busiest in the state with one-way clockwise travel around the lake.

Photo: Lake Harriet path today.

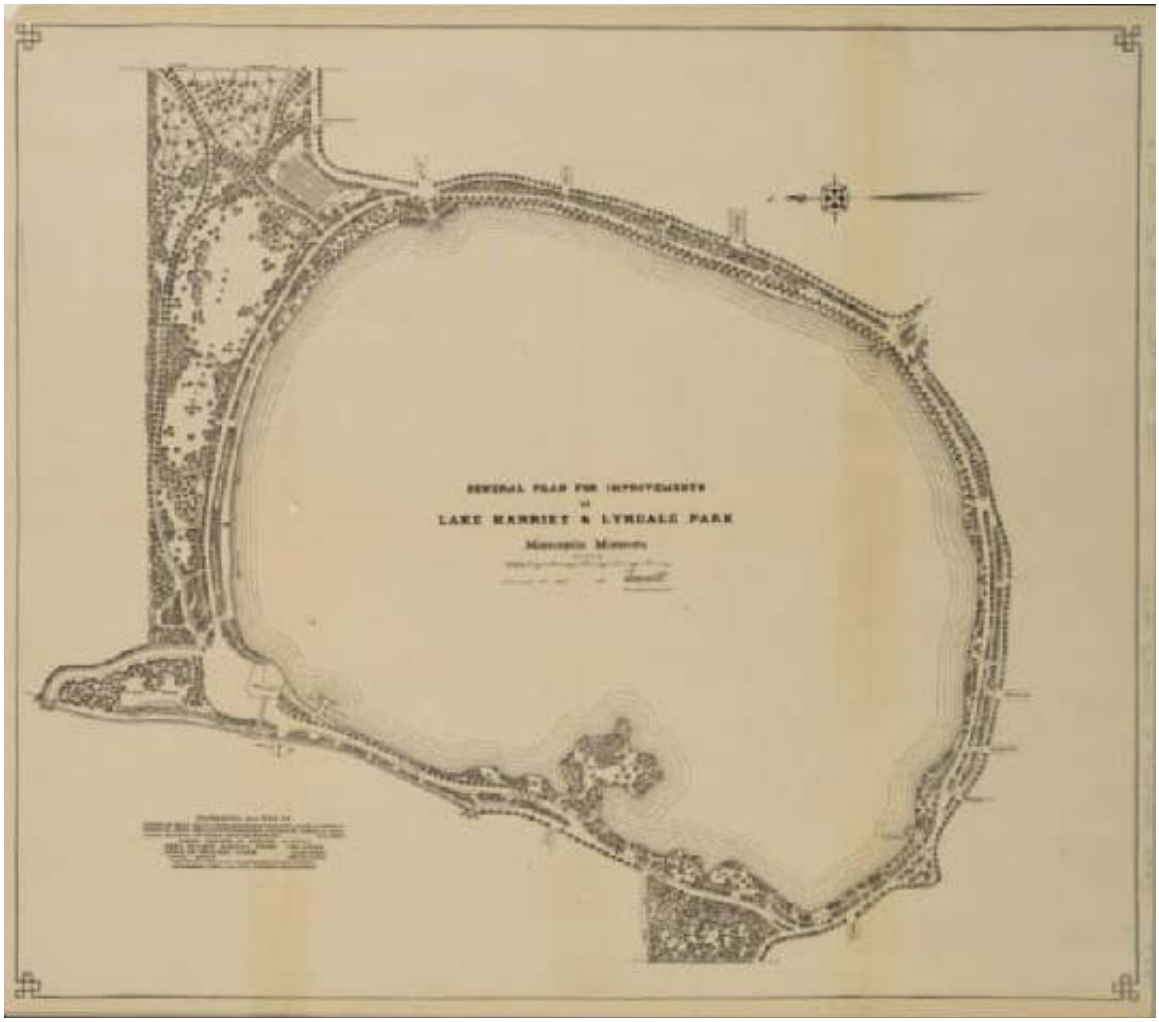


Photo: The 1907 park plan above is courtesy of the Minneapolis Park and Recreation Board. This map is oriented looking east (north is pointing left).

2.5.6 Lake Nokomis Trails—Property around Lake Nokomis was acquired in 1908, however it would be several years before trails would be constructed around the lake. Between 1914 and 1917 the lake was dredged and the sediment used to create a more defined shore.

Lake Nokomis has became a popular swimming and sail boating destination. The lake also draws hundreds of people to baseball/softball games and is very popular with bicyclists. The trails around Lake Nokomis were constructed in 1975 and in 1976 and were widened and resurfaced in 2003

Photo: Lake Nokomis today.

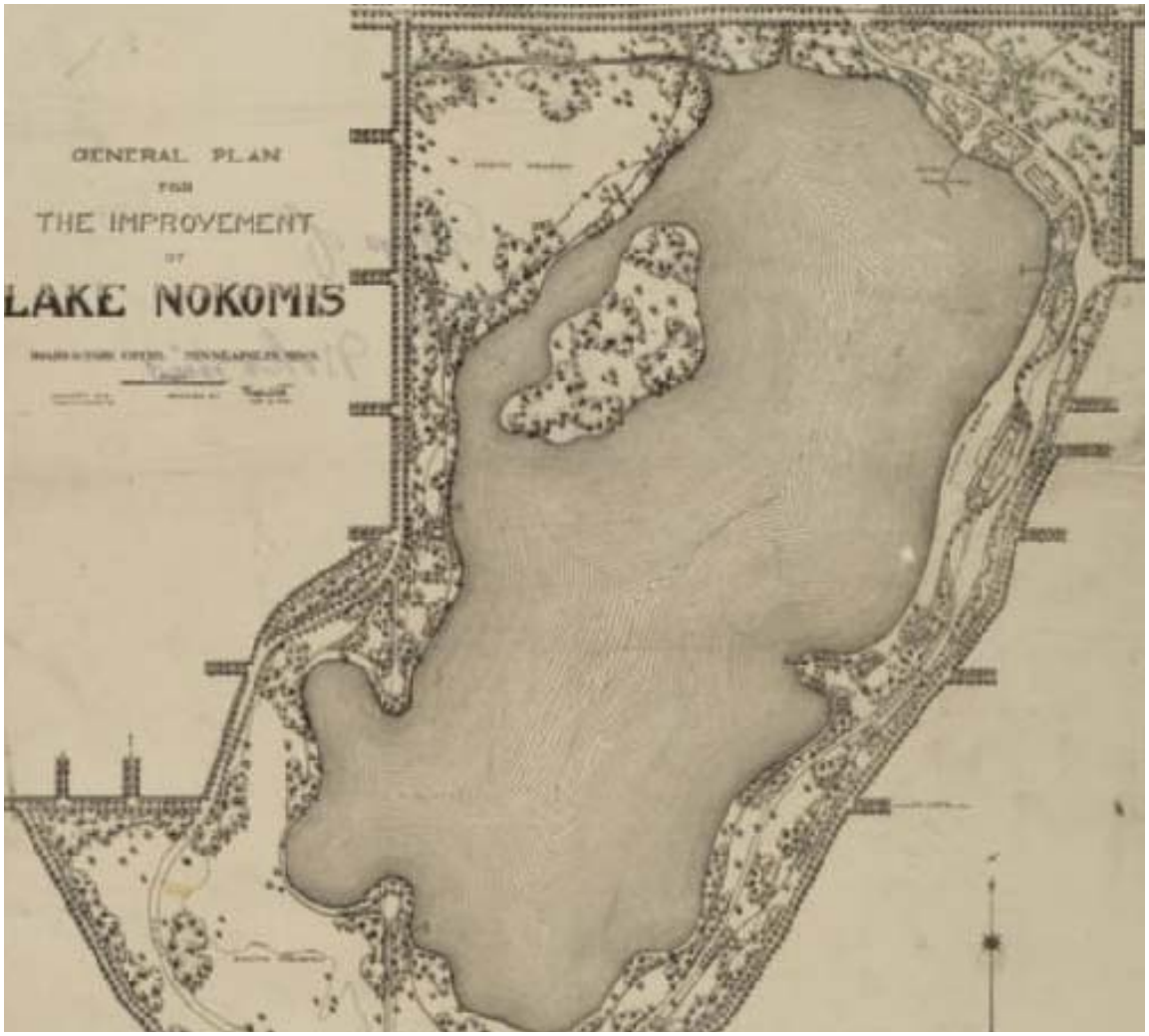
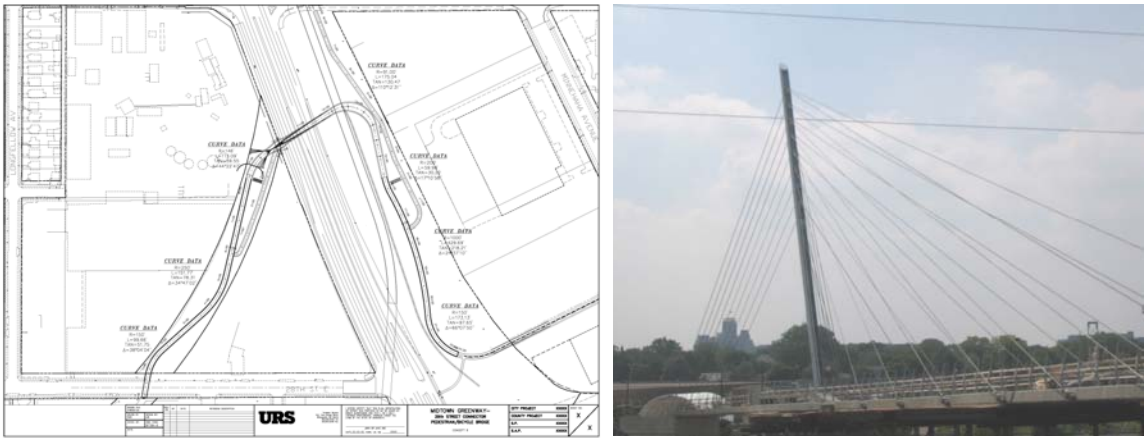
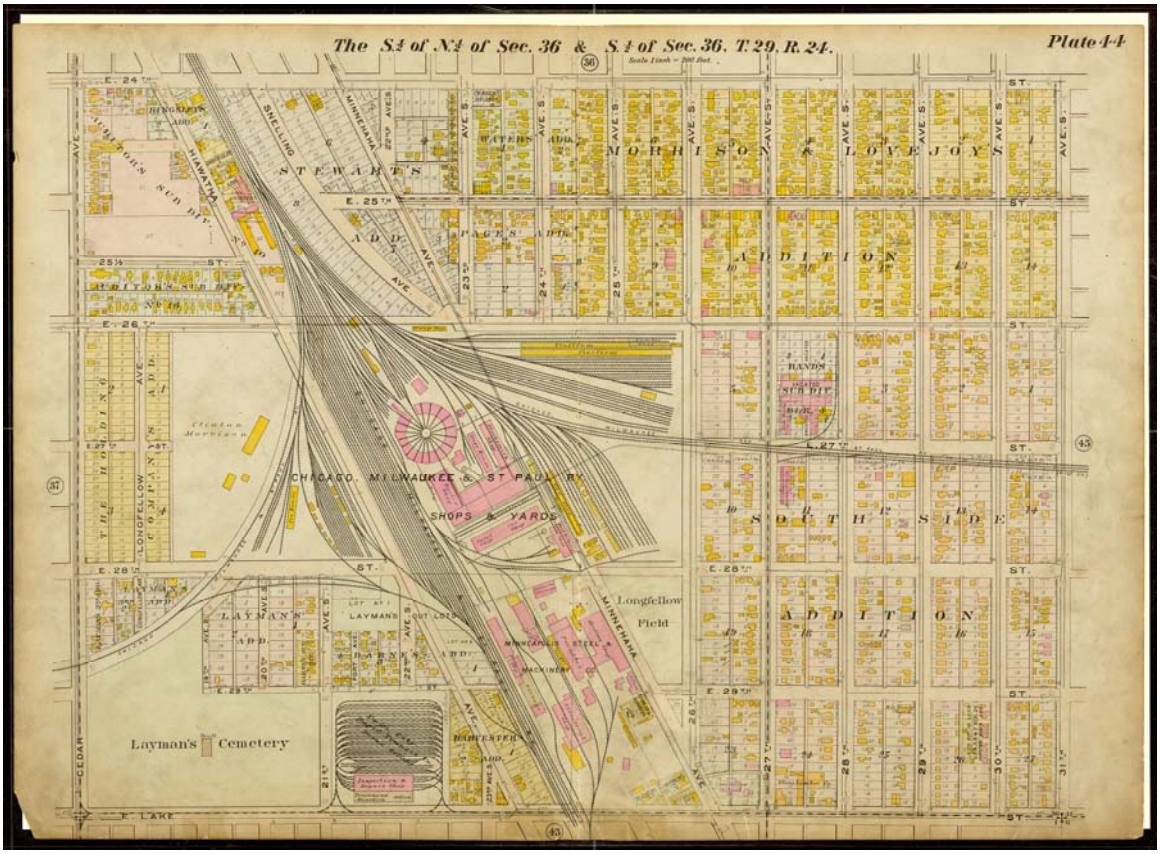


Photo: The 1913 park plan above is courtesy of the Minneapolis Park and Recreation Board. Lake Nokomis was originally called Lake Amelia until 1910.

2.5.7 Martin Olav Sabo Bridge—The location of the existing Martin Sabo Bridge near the intersection of 28th Street and Hiawatha Avenue was once a large rail yard with a roundhouse and several maintenance facilities. The 1914 plat map below also shows a streetcar yard, the Layman's Cemetery (Pioneer Cemetery), and the Minneapolis Steel and Machinery Company plant. The 1914 plat is courtesy of the Minneapolis Public Library Special Collection.



Above: Martin Sabo Bridge design and photo.



Above: 1914 plat of Lake and Hiawatha area.

2.5.8 Midtown Greenway—The Midtown Greenway trails were built in three phases. The first phase was completed in 2000, the second phase in 2004, and the third phase in 2006. Although it was constructed in a period of only a few years, it took decades of planning and a considerable amount of resources from Hennepin County, the City of Minneapolis and the Federal Government. The Hennepin County Regional Railroad Authority acquired property from Canadian Pacific Railway, purchased a grain elevator, and cleaned up contaminated soils to allow for trail construction. The City of Minneapolis operates/maintains the trail.

Above: CEPRO grain elevator before it was demolished. The county purchase of the grain elevator eliminated the need for rail service and allowed for Phase 2 of the trail to be constructed.

Above: The photo above shows CPERO Park today along the Midtown Greenway at 11th Avenue. In the background is the Midtown Exchange, which is a renovated Sears and Roebuck store and warehouse.

2.5.8 Midtown Greenway—By 1910 the east/west at- grade rail corridor located next to 29th Street was presenting safety and congestion challenges. To address these problems, it was decided to grade separate the entire corridor from Hennepin Ave to Cedar Avenue.

Above: Midtown Greenway at Humboldt Avenue (1927).

Above: Midtown Greenway at Humboldt Avenue today.

Above: Midtown Greenway at Humboldt Avenue (1927).

Above: Midtown Greenway bridges today.

Above: Bridge construction at Portland Avenue (1915).

Above: 4th Avenue bridge today.

Above: 4th Avenue Bridge (1914).

2.5.9 Minnehaha Creek Trails—Minnehaha Parkway is part of the Minneapolis Grand Rounds and connects Lake Harriet to Minnehaha Park. The property along the river was acquired in phases between 1887 and 1892. The parkway between Lake Harriet and Lyndale Avenue was constructed in 1889 and the remainder of the parkway to the east was finished by 1899. The trails along Minnehaha Creek Parkway were originally installed in 1897 but were converted to bridle (horse) paths in 1907 after interest in bicycling declined. Paved trails were constructed between 1972 and 1975. In 2000 and 2001 the MPRB reconstructed the paths and created separated bicycle and pedestrian trails. In 2000 a bridge with a trail was also constructed over Hiawatha Avenue.

Above: Minnehaha Avenue; 1914 Minneapolis Atlas.

Above: Minnehaha Parkway and Trail in the Fall of 1909; Courtesy Minnesota Historical Society.

Above: Minnehaha Creek Trails today

2.5.10 Minnehaha Park Trails - Minnehaha Falls was one of the first natural features that early settlers wrote about. Minnehaha Park was to be the first Minnesota State Park, but the land was turned over to the Minneapolis Park and Recreation Board in 1889 instead. The park once had a zoo, a busy Victorian train station, and a campgrounds. Today the park has an extensive trail system, large picnic areas, and several historical monuments. It is estimated that over 850,000 people visit each year.

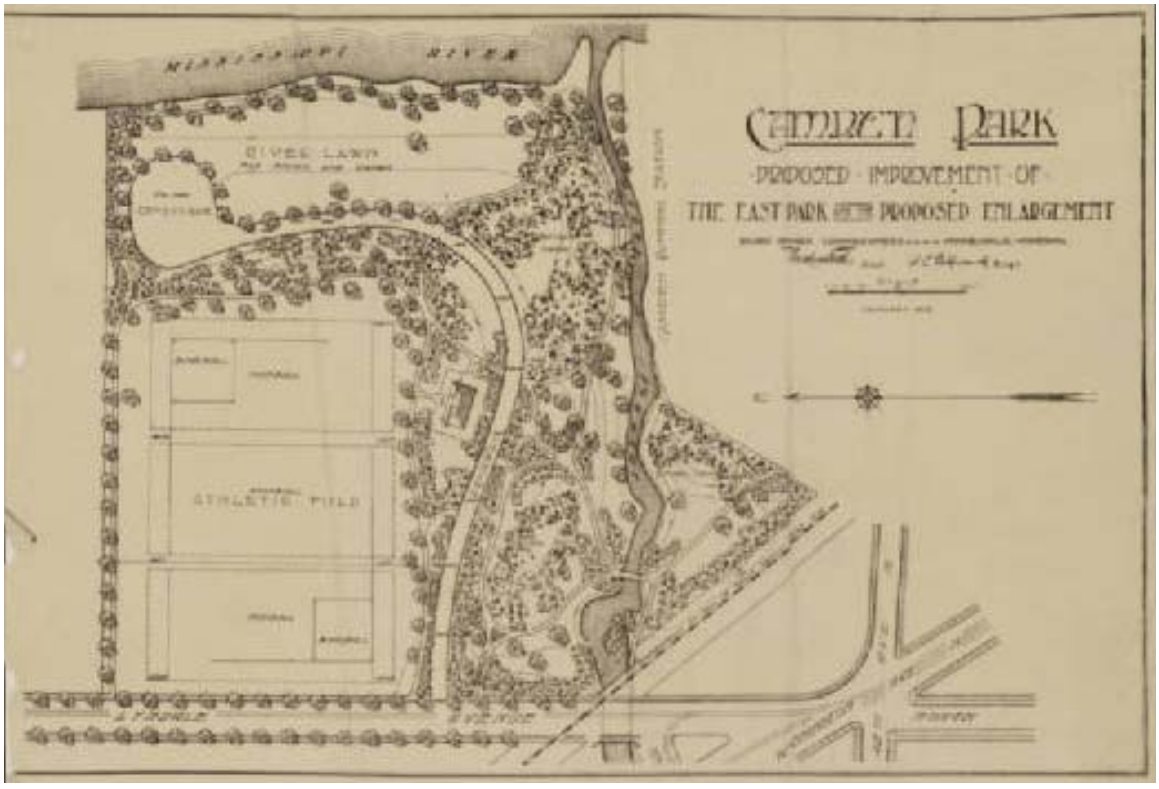
Above: A painting of Minnehaha Falls by Currier and Ives completed in 1870. Minnehaha Falls drops 53 feet. Courtesy of the Minnesota Historical Society.

Above: The map above is from the 1914 Minneapolis Atlas showing the Minnehaha Train Depot.

2.5.11 North Mississippi Regional Trails

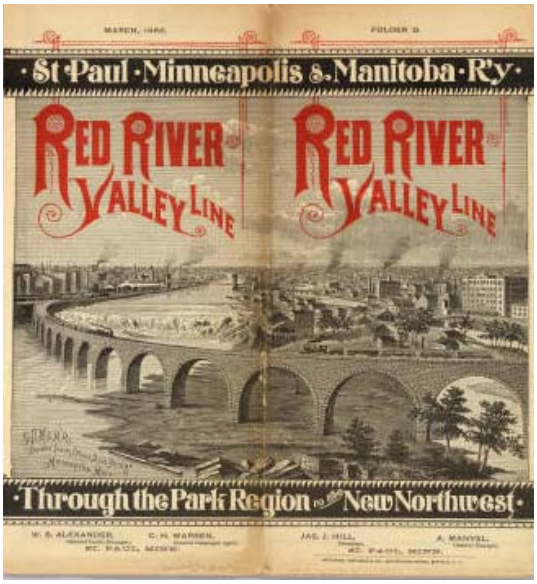
Trails—The expansion of Camden Park to the river was originally proposed by Theodore Wirth in 1917, however it wasn't until the 1950's that the Minneapolis Park and Recreation Board acquired much of the land that is now called North Mississippi Regional Park. A deal between the City of Minneapolis and the Minnesota Department of Transportation (MnDOT) in 1974 allowed for I-94 to be built on the western edge of the park land in exchange for a longer and larger park parcel along the river. Several other acquisitions in the late 1980's occurred along the riverfront extending the park to the north. In 1997 the North Mississippi Regional Trails were constructed with connections to Brooklyn Center, to the Shingle Creek Trail, and to Camden Bridge. Three Rivers Park District currently operates the visitor's center and maintains the trails with regional trail funding.

Above: The North Mississippi Trails today.



Above: The 1918 map above shows the proposed eastern portion of Camden Park. Map courtesy of the Minneapolis Park and Recreation Board.

2.5.12 Stone Arch Bridge—The Stone Arch Bridge was built by the Great Northern Railway in 1883 and is one of the historical icons of the Twin Cities region. In 1963 one column of the bridge was altered to construct a new lock that allowed barge shipping to the north. Once serving passenger rail trains, the bridge was converted to a bicycle and pedestrian trail in 1994 and was the first project in the state to use federal Transportation Enhancement (TE) funds. The bridge is a major bicycle commuter route with over 1,300 bicyclists per day in the spring/summer/fall. The bridge offers the best view of St. Anthony Falls, which is the only falls along the Mississippi River.



Above: An 1886 poster showing the Stone Arch Bridge, which was built by railroad owner James J. Hill in 1883: Poster courtesy of the Minnesota Historical Society.

Above: The map above is from the 1914 City of Minneapolis Atlas.

2.5.12 Stone Arch Bridge—The photos below show both modern and historical photos.

Above: Modern photo of St. Anthony Falls. Photo taken from the Stone Arch Bridge looking toward the 3rd Avenue Bridge.

Above: Photo of the Stone Arch Bridge in 1890. Photo courtesy of the Minnesota Historical Society.

Above: A photo of the Stone Arch Bridge today from the Guthrie Theatre cantilevered observation deck. The bridge was lit in 2005 and is now visible at night.

Above: 1918 Photo showing original 10th Avenue Bridge, Stone Arch Bridge and new 3rd Avenue Bridge. Photo courtesy of the Minnesota Historical Society.

Above: A modern photo showing the deck of the Stone Arch Bridge with two bike lanes and pedestrian walkways on each side. This is one of the city's best skyline views.

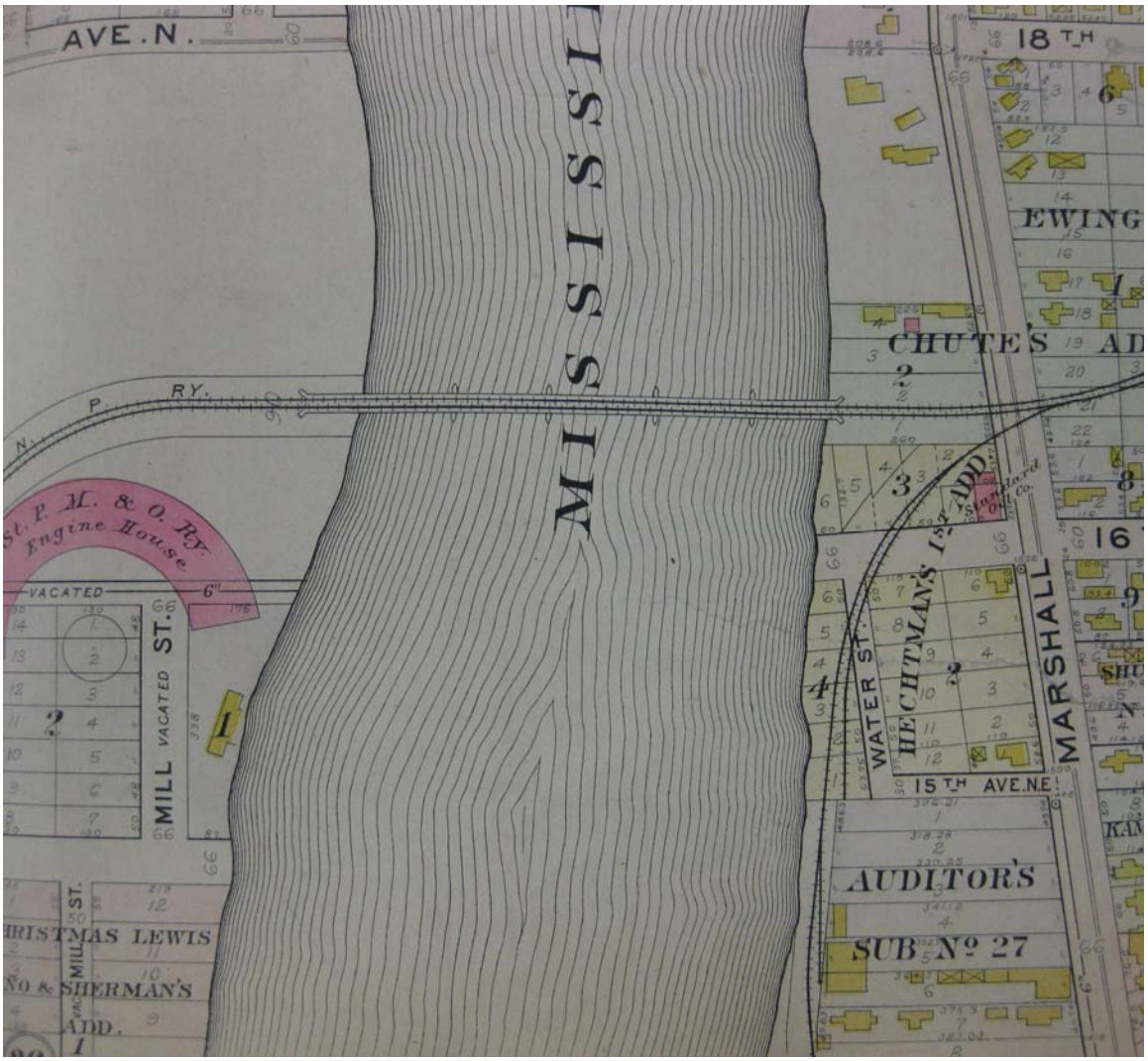
Above: The bridge had two sets of tracks and served passenger trains until 1978. 1965 photo courtesy of the Minnesota Historical Society. Photo by Alan Ominski.

Above: A photo showing Mill Ruins Park today. A row of buildings used to exist in the grass area above. Photo courtesy of the Minnesota Historical Society.

Above: A 1885 photo showing the mill district after the 1878 Washburn A Mill explosion. Photo courtesy of the Minnesota Historical Society.

2.2.13 Upper River Trails—In 1999 the City of Minneapolis completed the Above the Falls: Upper River Master Plan. Within this plan is a proposal to complete the trails along both sides of the Mississippi River from Downtown Minneapolis to the Camden Bridge. Although this plan is ambitious, it recognizes that there are several land uses that will likely be in place for a long time and the completion of the proposed trails will take many years. The trails along West River Road from Plymouth Avenue to Olson Park were completed in 2007.

Above: View of BNSF Bridge today.



Above: The map above is from the 1914 City of Minneapolis Atlas.

Chapter 3 – Policy Framework

3.1 Chapter Overview

3.1.1 Purpose - The purpose of this chapter is to identify existing bicycle policies and advisory groups.

3.1.2 Regional Planning—This chapter identifies several regional policy documents that pertain specifically to bicycling in the City of Minneapolis including:

- The Hennepin County Bicycle Transportation Plan (January 1997)
- The Metropolitan Council Regional Park Plan (June 2006)
- MnDOT Modal Plan

3.1.3 Local Planning—The following citywide Minneapolis policy documents directly relate to bicycling and are also identified in this section:

- The City of Minneapolis and Minneapolis Park and Recreation Board Bikeway Final report (October 2000)
- The City of Minneapolis 5-Year Bikeways Plan (June 2001)
- City of Minneapolis Bikeways Master Plan (December 2001)
- Access Minneapolis: Citywide Transportation Action Plan (2009)
- The Minneapolis Park and Recreation Bike Walk and Roll Plan (2009)
- The Minneapolis Plan for Sustainable Growth (2009)
- Citywide and Small Area Plans

3.1.4 Advisory Groups—There are several bicycle advisory groups that help elected and appointed officials make decisions including:

- The Minneapolis Bicycle Advisory Committee (BAC)
- The Hennepin County BAC
- The MN State Non-Motorized Transportation Advisory Committee

Above: Bicyclists at a kiosk along the Nicollet Mall

Above: Bicyclist along the Nicollet Mall

Above: Bicyclist on a residential sidewalk

3.2 Regional Planning

3.2.1 1997 Hennepin County Bicycle Transportation Plan—

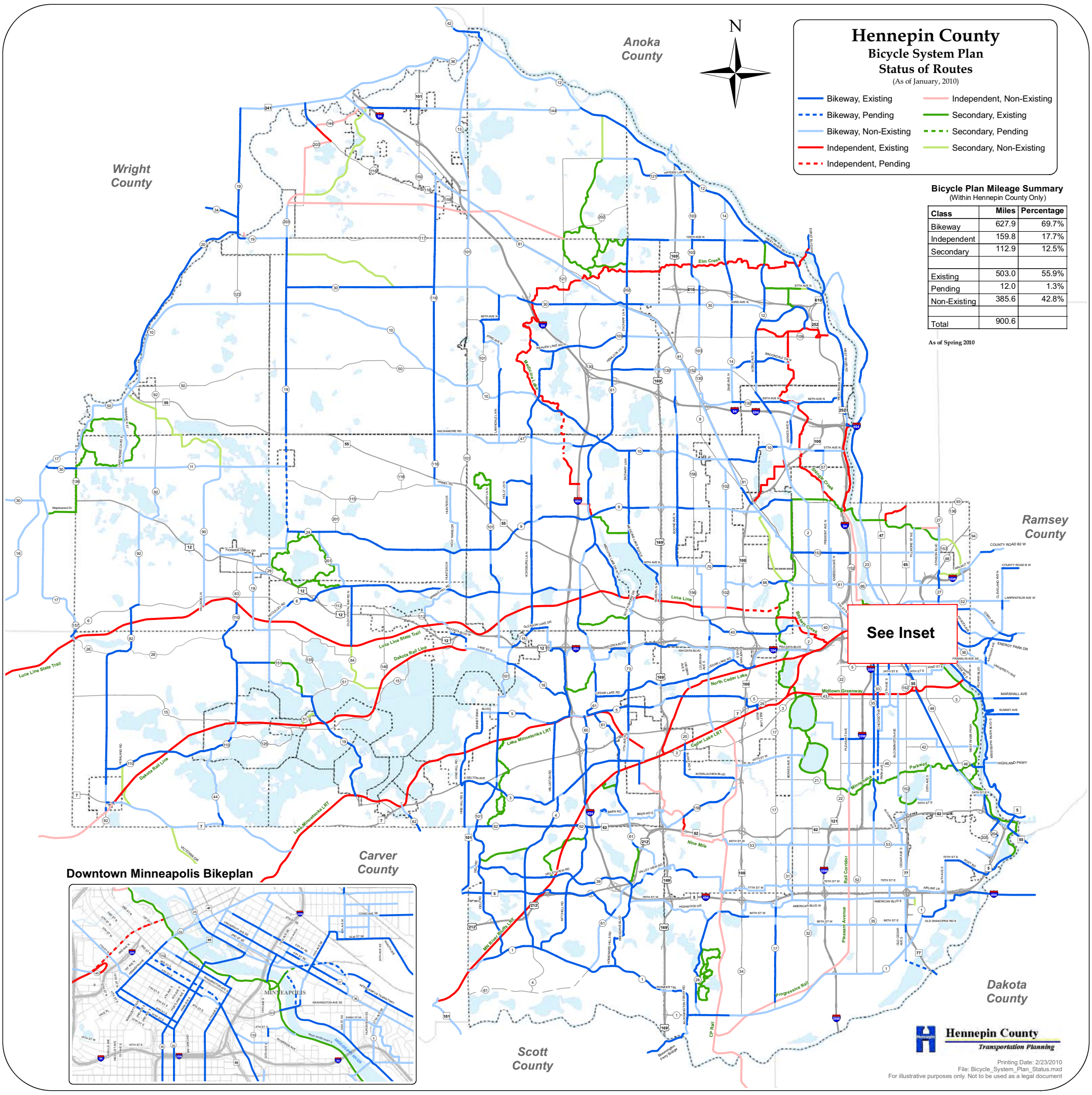
The 1997 Hennepin County Bicycle Transportation Plan was created to *"address the county's role in providing bicycle planning services, in designing and constructing bicycle facilities, and in supporting the provision of other bicycle amenities. The focus of the plan is to allow the bicycle to become a viable transportation option."* The plan states a detailed vision that supports bicycling as a legitimate transportation mode worthy of infrastructure investments. Hennepin County recognizes five levels of accommodation; full accommodation, an independent trail, a bicycle compatible roadway, a multi-use path, and a basic roadway.

Above: The Hennepin County Bicycle Transportation Plan was approved in January 1997.

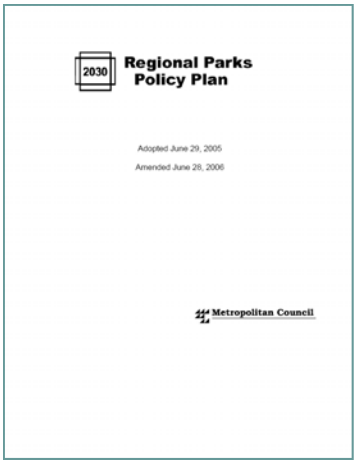
The plan suggests typical sections for rural, suburban, and urban roadway settings based on functional classification, available right-of-way, speeds, and traffic volumes. Urban sections assume curb and gutter and the inability to easily acquire right-of-way. The plan also suggests a cost share program with cities and resulted in the creation of a bicycle capital improvement program.

Three types of corridor criteria are identified in the system plan:
Primary Routes: "The primary routes (blue) in the system plan were identified as being corridors where the goal of full bicycle accommodation for bicyclists is focused. These corridors may be comprised of county roadways and right-of-ways or they may make use of parallel lower volume city streets."
Secondary Routes: "The secondary routes (green) in the system are bikeways which have a heavy recreational focus or are lesser routes which still have an auxiliary importance to the overall system. Often these routes have another parallel alternative route nearby. The recreational routes may also serve transportation uses due to their location and proximity to bicycle trip generators. Something less than full accommodation such as on-road shoulder or a off-road multi-use path can be acceptable on a secondary route."
Independent Trails: "The independent trails (red), those trails not within roadway rights-of-way, are included because of their importance to overall bicycle system continuity in Hennepin County. Since they often span natural and man made barriers, the trails provide strong cross-county linkages that are important for bicycle transportation."

Figure 3.1 - Hennepin County Bicycle System Plan



3.2.2 Metropolitan Council Regional Parks Policy Plan—



Above: The Met Council Regional Parks Policy Plan was approved in June 2005.

The existing regional park system includes 47 regional parks/park reserves, 22 regional trails, and both zoos. This plan identifies several new corridors and locations for inclusion into the system, identifies policies and strategies for funding the system, determines the types of facilities needed by the public, and management procedures for maintaining the system.

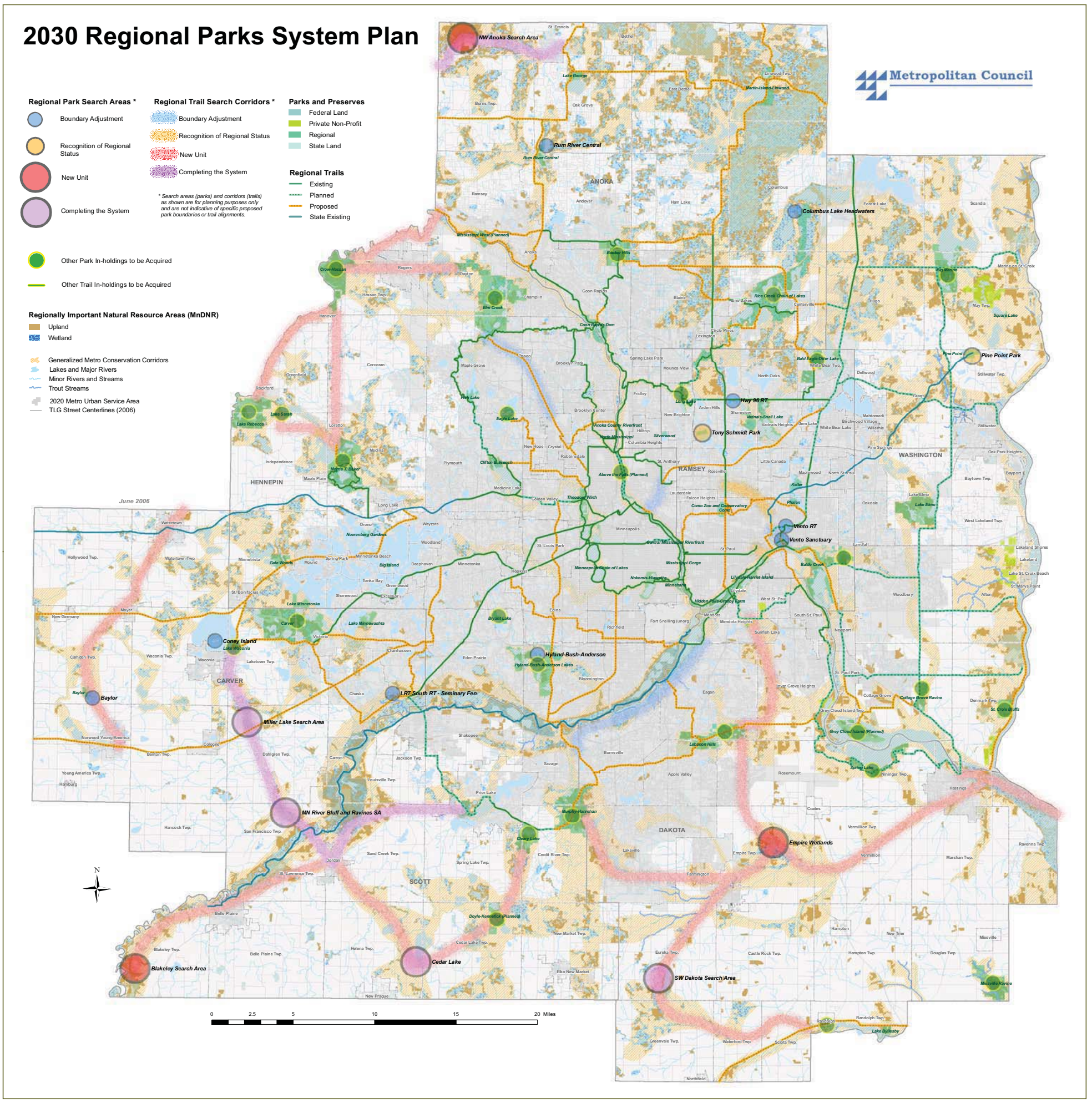
"Trail corridors planned and operated mainly to provide bicycle transportation functions such as trips to work, shopping, etc., are not emphasized as a part of this policy plan. However, some regional trails also function as bicycle transportation corridors and have been funded in part with federal transportation funds. In addition, the commuting trips taken on regional trails also have a recreation component inherent within the trip. The commuter on a regional trail typically enjoys a more scenic travel experience compared to the experience offered on road-based bicycle transportation lanes. Increased commuting opportunities by locating new regional trails benefit the region through reduced congestion and the health benefits associated with physical activity. Consequently, new regional trails that are projected to serve both recreation and commuting uses are desirable as part of the regional trail system."

This document strongly supports recreational facilities in high quality natural areas but also encourages bicycling for transportation purposes. Projects that have regional significance tend to score better in the federal funding regional solicitation.

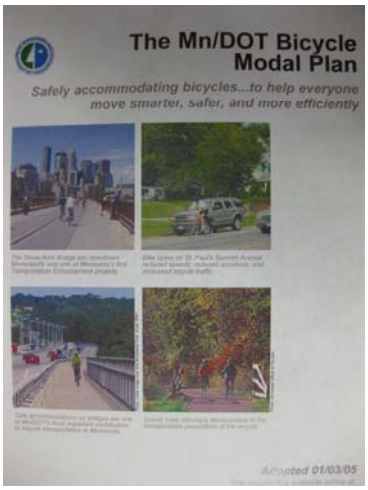
The plan lists several criteria that need to be followed in order for a potential project to be recognized as a regional trail:

- The trail must be spaced at reasonable densities in accordance with land use.
- Connections to other trail facilities or park nodes that help complete a system network.
- Cooperation with local communities. Regional trails require a local funding match from communities. Local communities are responsible for trail education and enforcement.
- The facility must have an approved master plan that meets several criteria including boundaries and acquisition costs, a stewardship plan, a demand forecast, a development concept, a way to resolve conflicts, needed public services/utilities, rules/regulations/ordinances pertaining to the operation of the facility, a citizen participation process, a public awareness plan, a way to address users with special needs, and a natural resources component.
- The Metropolitan Council must recognize the facility in the approved system map. Community Comprehensive Plans should also reflect this plan.

Figure 3.2 - Metropolitan Council 2030 Parks System Plan (2005)



3.2.3 The MnDOT Bicycle Modal Plan—The MnDOT Bicycle Modal Plan was established in 2005 to create a safer and more welcoming environment for bicyclists statewide. The following vision and mission were established as part of the planning process:



Above: The MnDOT Bicycle Modal Plan was approved in 2005.

Bicycle Modal Plan Vision: "The MnDOT vision for bicycle transportation is a "place where bicycling is a safe and attractive option in every community. Bicycling is accommodated for daily transportation and for experiencing the natural resources of the state."

MnDot Mission for Bicycle Transportation: "MnDOT will safely and effectively accommodate and encourage bicycling on its projects in Minnesota communities, and in other areas where conditions warrant. MnDOT will exercise leadership with its partners to encourage similar results on their projects."

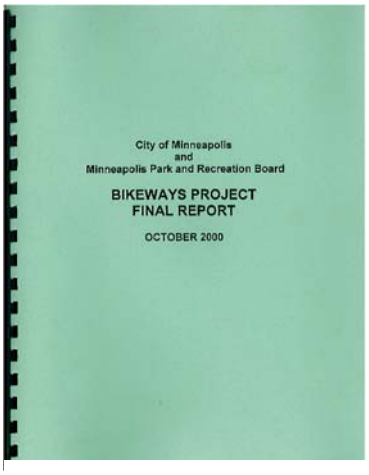
The MnDOT Bicycle Modal Plan recommends more cooperation between government agencies, creating a scenic bikeway system, and ensuring that all MnDOT planning and design manuals provide guidance to accommodate bicycles. The MnDOT Bicycle Modal Plan also sets measures and targets to reduce crash rates, to increase bicycle modal share, and eliminate fatalities.

This policy document has become the basis of the MnDOT Bicycle Facility Design Guidelines, which was approved in 2007. The MnDOT Bicycle Modal Plan includes a design matrix that suggests appropriate bicycle treatments based on roadway volumes, posted speeds, functional classification, and heavy vehicle mix. There is also a catalogue of common bicycle facilities and treatments for use in urban, suburban, and rural conditions. The catalogue includes guidance on when or where to use a treatment in addition to guidance on how to implement it.

The MnDOT Bicycle Modal Plan recognizes that bicycling is a legitimate transportation mode and recommends the use of a number of innovative treatments including colored bike lanes, back-in angled parking, signal progression for bicycles , and combined turn lanes. Perhaps the most important statement within this document is the reinforcement of Federal Highway Administration guidance that states "bicycle and pedestrian ways shall be established in all new construction and reconstruction projects in urban areas." MnDOT and the City of Minneapolis work collaboratively to furnish bicycle facilities based on approved plans.

3.3 Local Planning

3.3.1 2000 Bikeways Project Final Report—The 2000 Bikeways Project Final Report was a collaboration between the City of Minneapolis and the Minneapolis Park and Recreation Board to identify maintenance needs and maintenance responsibilities for bicycle facilities within the city and was adopted in October 2000.



Above: The Bikeways Project Final Report was approved in October 2000.

Recommendations: Five recommendations came out of this report including:
Recommendation #1: Adopt a joint planning process for Minneapolis bikeways.
Recommendation #2: Approve the shifting of maintenance responsibility from PW to MPRB staff for certain off-street bikeways.
Recommendation #3: Approve the "Bikeway Maintenance Standards" developed by Public Works and MPRB staff.
Recommendation #4: Direct the Public Works Department and MPRB staff to work with the Minneapolis Bicycle Advisory Committee in reviewing the BAC's scope and membership and to submit any needed revisions for Mayor/City Council and MPRB approval.
Recommendation #5: Revise the Minneapolis Five Year Bike Plan to reflect the existing, planned, and proposed bikeways and submit the Bike Plan to the Mayor/City Council and the MPRB for approval by May 2001.

Above: Nice Ride Bike Share in Downtown Minneapolis.

Policy: Some of the policy language outlined in this document includes:

- Projects must disclose proposed operations and maintenance funding expenses to elected officials before pursuing capital funding.
- Public Works and the MPRB need to collaborate so that projects connect.
- In general, off-street bikeways will be maintained by the MPRB and on-street facilities will be maintained by Public Works. Routine maintenance and extraordinary maintenance are defined. Maintenance expectations are also defined in the report.
- The Bicycle Advisory Committee's membership, roles, and responsibilities were defined as part of the last bicycle master planning process in 2001. In 2010 the BAC also revised its membership and bylaws.
  As prescribed in this document, the bicycle master plan needs to be updated on a regular basis. The Bikeways Project policies will remain, but the project appendix needs an update.

3.3.2 5-Year Bikeways Plan (2001)—The 2001 5-Year Bikeways Plan was instigated by the fact that it had been 5 years (1997) since a previous plan had been approved and many of the previously identified projects had been implemented. Previous plans primarily focused on completing the arterial bicycle system with many of the suggested projects were located in railroad corridors or along the Mississippi River corridor.

Above: Downtown Riverfront.

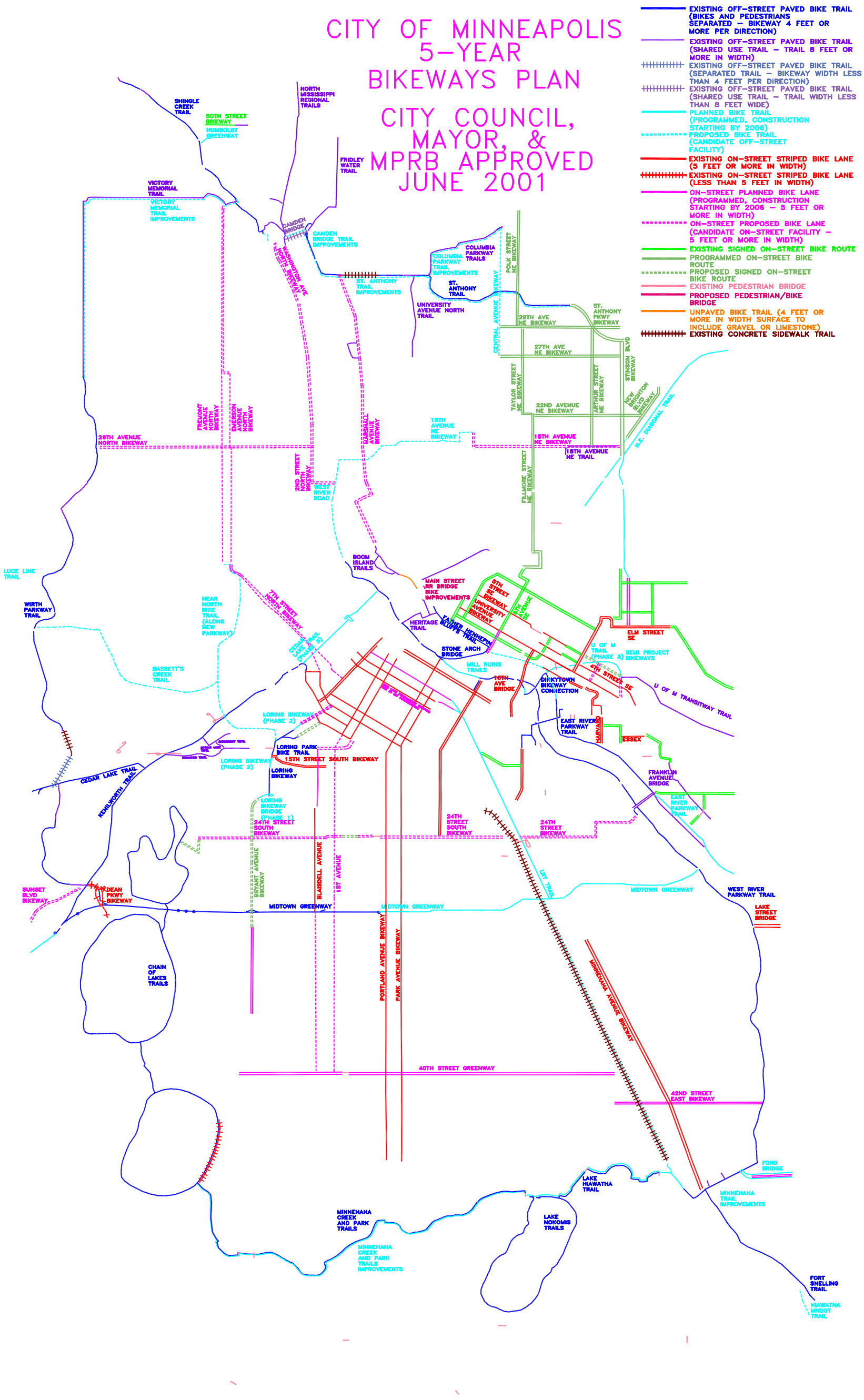
Community Process: In January 2001 every neighborhood group throughout the city was sent a letter asking to identify where they would like to see bicycle accommodations. Most neighborhoods replied with great interest and ideas for how to make the city more bicycle friendly. When the suggested corridors were mapped there were discrepancies across neighborhood boundaries. For example, one neighborhood wanted to see a bike route on Franklin Avenue, whereas the adjacent neighborhood felt that 24th Street was a safer route. To create a seamless system without conflicts, each neighborhood was asked to send a delegate to one of four different quadrant meetings throughout the city. At these meetings were staff from the City of Minneapolis, Hennepin County, and the Minneapolis Park and Recreation Board to assist with technical questions. The group evaluated each candidate route and recommended a seamless grid of bike lanes, trails, and signed bike routes. City of Minneapolis, Hennepin County, Minneapolis Park and Recreation Board, Minnesota Department of Transportation, Metropolitan Council, and Metro Transit staff examined traffic volumes, crash history, speeds, right-of-way availability, funding criteria, and jurisdictional standards to ensure the plan made sense. Upon the completion of the community process it was decided that 2 plans were needed; a 5-year plan that showed short term projects, and a master plan that showed a full build-out of the bikeways system. The 5-Year Bikeways Plan was approved in June of 2001 and the Bikeways Master Plan was approved in December 2001. In addition to a map, several mode share and bicycle parking goals were set as part of the Master Plan process.

Criteria: In order for a project to be listed on the 5-Year Bikeways Plan the following criteria needed to be satisfied:

- Ownership and maintenance responsibilities defined.
- The bikeway is funded, partially funded, or identified as a project that will most likley be funded within 5 years.
- The bikeway must meet Bicycle Master Plan criteria.

Since 2001 almost all identified projects in the 5-Year Bikeways Plan have either been completed or are funded. This plan will replace both the 2001 5-Year Bikeways Plan and the 2001 Bikeways Master Plan.

Figure 3.3 - 2001 5-Year Bikeways Plan



3.3.3 2001 Bikeways Master Plan—The 2001 Bikeways Master Plan was approved by the Minneapolis City Council, Mayor, and Minneapolis Park and Recreation Board in December 2001. The plan included a map of all existing and proposed bikeways within the city.

Above: Bicyclist on the West River Parkway Trail

Criteria: In order for a project to be listed on the Bikeways Master Plan the following criteria needed to be satisfied:

- Bikeway is reasonably spaced from existing bikeways and other candidate bikeways (what is reasonable is based on existing or future housing density, physical or natural features, or land use).
- Scope of candidate bikeway must be technically and economically realistic based on existing or proposed conditions.
- Bikeway does not conflict with city transportation goals and policies.

A candidate bikeway must meet one or more of the following criteria:

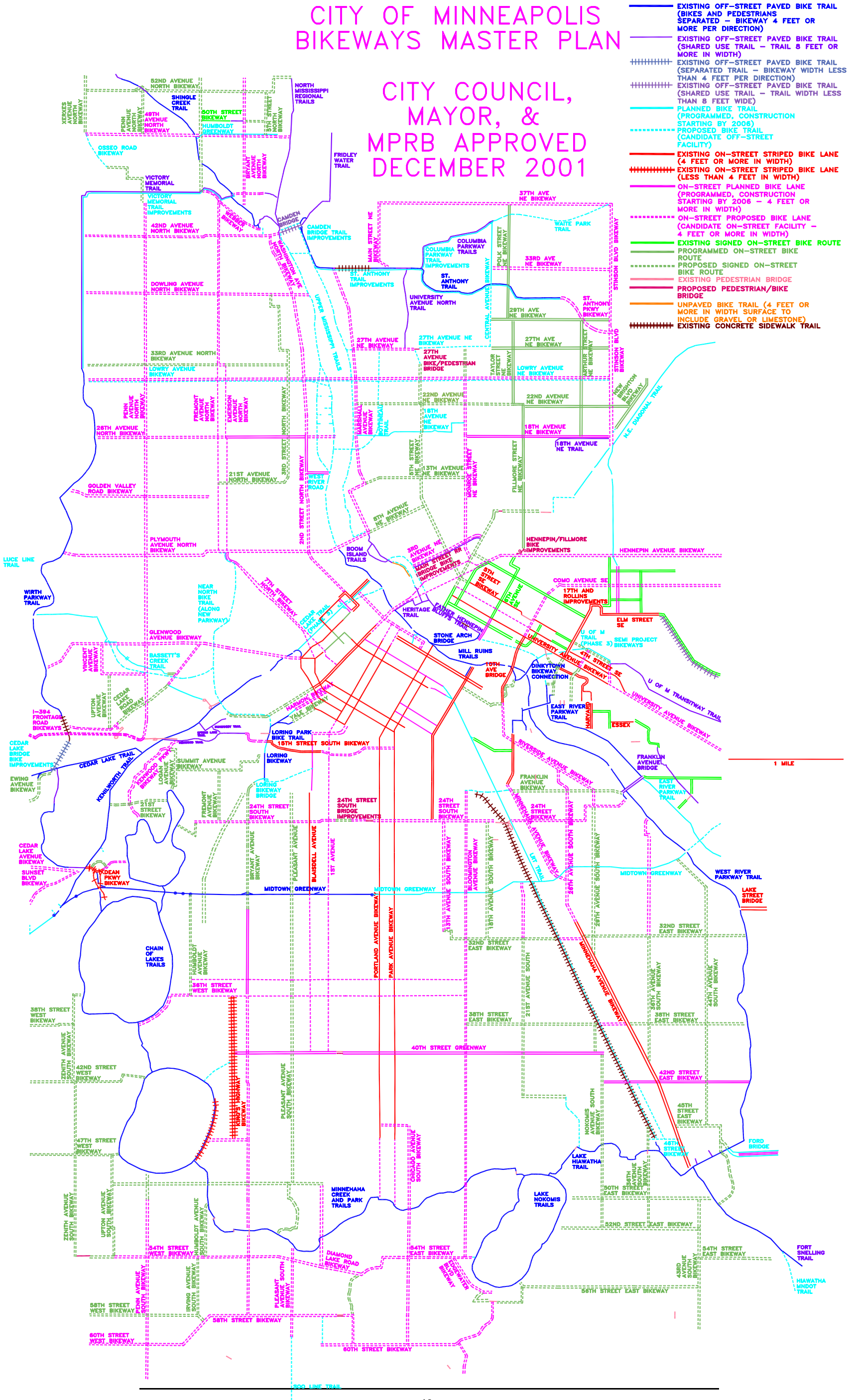
- Connects to transit hubs (i.e., LRT, bus stops, commuter rail stations).
- Is needed to improve safety on a given street or area.
- Is combined with economic development of an area.
- Enhances, improves, or replaces an existing bikeway.
- Closes a gap in the existing bikeways system.
- Removes a significant barrier to bicyclists.
- Is in reasonable proximity to popular destination spots including parks, schools, office zones, retail/shopping areas, or cultural centers.

Bikeway ownership, maintenance responsibilities, or funding do not have to be defined in order to be included in the Bikeways Master Plan. Before a candidate bikeway can be constructed the following criteria must be met:

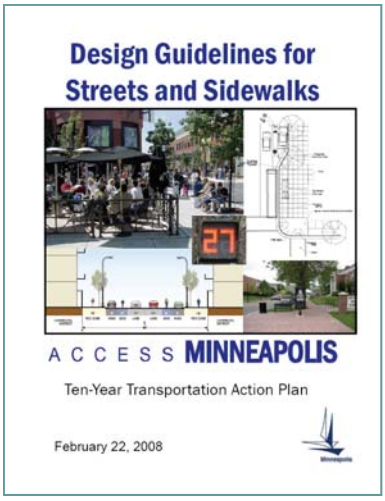
- Designed to acceptable MnDOT, County and/or City of Minneapolis standards and safety considerations.
- Ownership and maintenance responsibilities must be determined.
- Right-of-way secured and project fully funded.
- Neighborhood support in addition to Park Board or City Council approval.

Goals: When the 2001 Bikeways Master Plan was adopted, several goals were presented to the City Council. The first was a 4% bicycle mode share by 2010, a 5% bicycle mode share by 2015, and a 6% bicycle mode share by 2020. Coincidentally Census information revealed that the city met the 4% mode share goal by 2008. In addition, a goal to keep up with bicycle parking spaces to meet the mode share goals was also presented.

Figure 3.4 - 2001 Bikeways Master Plan



3.3.4 Access Minneapolis: 10-Year Transportation Action Plan—



In 2009 the Minneapolis City Council and Mayor approved the Access Minneapolis: Citywide 10-Year Transportation Action Plan. The 2009 citywide plan provides a significant amount of guidance with regard to bicycle facilities. The report includes a bicycle gap analysis in addition to policy statements that support bicycle use. The gap analysis examines both on-street gaps and off-street gaps and is the source of many projects identified in this plan.

The 2008 Streets and Sidewalk Design Guidelines suggest roadway cross sections that include bike lanes. The guidelines identify several street typologies including commuter streets, commerce streets, activity area streets, community connector streets, neighborhood connector streets, industrial connector streets, parkway streets, and local streets. The Design Guidelines for Streets and Sidewalks recommend bicycle facilities contingent on whether or not the corridors are identified in the Bikeways Master Plan map.

The Bicycle Master Plan is an extension of the work that occurred with the Access Minneapolis Plan. Section 11 of the document suggests the following proposed content for the Bicycle Master Plan and is covered in the Minneapolis Bicycle Design Guidelines:

- Trails (including safety/security/lighting, widths, hours, etc)
- Bike Lanes
- Intersection Treatments
- Shared Use Lanes (including a discussion on lane widths)
- Trail Crossings
- Bikeway Detours
- Wayfinding and information signage
- Development requirements
- Innovative treatments
- Maintenance

This plan addresses some of the items above. The majority of the topics are covered in the 2010 Minneapolis Bicycle Facility Design Guidelines, which is a technical companion document that covers design considerations, off-street facilities, on-street facilities, bicycle parking, support facilities, transit connections, maintenance, and innovation. Originally, technical topics were to be addressed in the Bicycle Master Plan. However, as both documents developed it became apparent that separating them made the most sense.

3.3.5 MPRB Bike Walk and Roll Plan—In 2008 the Minneapolis Park and Recreation Board initiated a study report to determine the needs of bicyclists, pedestrians, and roller-bladers using the park system. The planning process included input from neighborhoods, from bicyclists, and staff. The plan will outline goals to make the park system more bicycle friendly by adding additional facilities and better maintaining the facilities already in place. Perhaps the most ambitious park system goal is the completion of the Minneapolis Grand Rounds in Northeast Minneapolis. This project will complete a century old vision but would come at an estimated price of over $100 million.

Above: Bicyclist on the West River Parkway Trail

Above: Bicyclists using a parkway during the annual September bike ride.

3.3.6 Comprehensive Plan: Land Use Policies— The City of Minneapolis has a number of comprehensive plan policies that deal with land use, four of which directly relate to bicycling. As a bicyclist, it is important that the city maintain mixed use nodes at regular intervals to minimize trip length.

Above: Bicyclist in Uptown

Minneapolis Plan: Land Use Policy 1.3 - Ensure that development incorporate appropriate transportation access and facilities, particularly for bicycle, pedestrian, and transit.
Minneapolis Plan: Land Use Policy 1.3.2 - Ensure the provision of high quality transit, bicycle, and pedestrian access to and within designated land use features.
Minneapolis Plan: Land Use Policy 1.16 - Support a limited number of Major Retail Centers, while promoting their compatibility with the surrounding area and their accessibility to transit, bicycle, and foot traffic.
Minneapolis Plan: Land Use Policy 1.16.4 - Ensure the provision of high quality transit, bicycle, and pedestrian access to Major Retail Centers.

3.3.7 Comprehensive Plan: Transportation Policies— Strong policies that support the ability to easily and safely get around on bike is very important. The following policies support bicycling as a legitimate transportation option:

Minneapolis Plan: Transportation Policy 2.1 - Encourage growth and reinvestment by developing a multi-modal transportation system that includes light rail, commuter rail, intercity high speed rail, high frequency buses, and other modes.
Minneapolis Plan: Transportation Policy 2.1.1 - Address the need of all modes of transportation, emphasizing the development of a more effective transit network.
Minneapolis Plan: Transportation Policy 2.1.2 - Coordinate land use planning and economic development strategies with transportation planning.
Minneapolis Plan: Transportation Policy 2.1.3 - Ensure continued growth and investment through strategic transportation investments and partnerships.
Minneapolis Plan: Transportation Policy 2.5 - Ensure that bicycling throughout the city is safe, comfortable, and pleasant.
Minneapolis Plan: Transportation Policy 2.5.1 - Complete a network of on and off-street primary bicycle corridors where bicycles are given priority.
Minneapolis Plan: Transportation Policy 2.5.2 - Strive to accommodate bicycles on all streets but, when other modes take priority in a corridor, provide accessible alternate routes.
Minneapolis Plan: Transportation Policy 2.5.3 - Continue to integrate bicycling and transit facilities where needed, including racks on transit vehicles and bicycle parking near transit stops.

3.3.7 Comprehensive Plan: Transportation Policies— Continued

Above: Bicyclist in Downtown Minneapolis

Minneapolis Plan: Transportation Policy 2.5.4— Implement and expand zoning regulations and incentives that promote bicycling, such as racks, storage lockers, and changing facilities.
Minneapolis Plan: Transportation Policy 2.5.5 - Provide public bicycle parking facilities in major destinations such as downtown, activity centers, and growth centers.
Minneapolis Plan: Transportation Policy 2.5.6 - Identify sources of funding for long term maintenance of facilities, education, and outreach.
Minneapolis Plan: Transportation Policy 2.8 - Manage parking in line with objectives for improving the environment for transit, walking, and bicycling.
Minneapolis Plan: Transportation Policy 2.8.1 - Implement off-street parking regulations, which provide parking for nearby uses, while still maintaining an environment that encourages bicycle, pedestrian, and transit travel.
Minneapolis Plan: Transportation Policy 2.8.8 - Support the use of incentives that promote transit, walking, and biking while reducing parking requirements.
Minneapolis Plan: Transportation Policy 2.10 - Support the development of a multi-modal downtown transportation system that encourages an increasingly dense and vibrant regional center.
Minneapolis Plan: Transportation Policy 2.10.4 - Improve the pedestrian environment downtown, to ensure it is a safe, enjoyable, and accessible place to walk. Encourage strategies such as wider sidewalks for pedestrian movement, trees and street furniture, improved transit facilities, additional bicycle facilities, and on-street parking and other curb-side uses.
Minneapolis Plan: Transportation Policy 2.10.8 - Manage the growth and pricing of the parking supply consistent with objectives for transit, walking, and bicycling.

3.3.8 Comprehensive Plan: Economic Policies— A strong and vibrant local economy is good for everyone. Below are several economic development policies that support bicycles:

Minneapolis Plan: Economic Development Policy 4.13 - Downtown will continue to be the most sustainable place to do business in the metro area.
Minneapolis Plan: Economic Development Policy 4.13.2 - Encourage existing Downtown buildings to retrofit for improved sustainability, including energy efficiency, additional green space, and bicycle facilities.
Minneapolis Plan: Economic Development Policy 4.13.6 - Provide efficient transportation options for Downtown users to get around within the district.

3.3.9 Comprehensive Plan: Public Services and Facilities—

There are dozens of opportunities to improve conditions for bicycling that come up as part of public projects, whether it is a new public building or a street reconstruction. Below are policies that pertain to public services and facilities:

Above: A pair of Bicyclists in Downtown Minneapolis

Minneapolis Plan: Public Services and Facilities Policy 5.2 - The City of Minneapolis will support the efforts of public and private institutions to provide a wide range of educational choices for Minneapolis students and residents throughout the city.
Minneapolis Plan: Public Services and Facilities Policy 5.2.5 - Encourage the use of public transportation, walking, and bicycling as a means of connecting students to educational opportunities throughout the city.
Minneapolis Plan: Public Services and Facilities Policy 5.2.8 - Provide infrastructure (sidewalks, crosswalks, etc.) to ensure safe routes to neighborhood schools.
Minneapolis Plan: Public Services and Facilities Policy 5.4 - Minneapolis will enhance the safety, appearance, and effectiveness of its infrastructure.
Minneapolis Plan: Public Services and Facilities Policy 5.4.1 - Maintain and improve the quality and condition of public streets, sidewalks, bridges, water systems, and other public infrastructure.
Minneapolis Plan: Public Services and Facilities Policy 5.4.2 - Plan for and provide public facilities which anticipate growth needs, use fiscal resources efficiently, and meet realistic timelines.
Minneapolis Plan: Public Services and Facilities Policy 5.4.3 - Prioritize capital improvements according to an objective set of criteria consistent with adopted goals and policies, including those of the Minneapolis Plan.
Minneapolis Plan: Public Services and Facilities Policy 5.4.4 - Encourage the creation of special service districts downtown and in other business districts in order to enhance streetscapes, provide security services, and maintain the public realm.
Minneapolis Plan: Public Services and Facilities Policy 5.7 - Minneapolis will protect and improve individual, community, and environmental health.
Minneapolis Plan: Public Services and Facilities Policy 5.7.2 - Integrate physical activity into the everyday life of residents through land use and transportation planning.
Minneapolis Plan: Public Services and Facilities Policy 6.2 - Minneapolis will protect and enhance air quality and reduce greenhouse gas emissions.
Minneapolis Plan: Public Services and Facilities Policy 6.2.4 - Endorse the use of alternative modes of transportation such as public transit, bicycles, car and bike share programs, and carpools, as well as promote alternative work week schedules.
Minneapolis Plan: Public Services and Facilities Policy 6.2.6 - Support the development of multi-modal transportation networks.

3.3.10 Comprehensive Plan: Open Space and Parks— The Minneapolis Comprehensive Plan includes a number of Open Space and Parks policies that encourage bicycling:

Above: An Elliot Park resident riding her bike.

Minneapolis Plan: Open Space and Parks Policy 7.1– Promote the physical and mental health of residents and visitors by providing safe outdoor amenities and spaces that support exercise, play, relaxation, and socializing.

Minneapolis Plan: Open Space and Parks Policy 7.1.3– Promote safe pedestrian and bike routes to parks and open spaces.

Minneapolis Plan: Open Space and Parks Policy 7.6– Continue to beautify open spaces through well designed landscaping that compliments and improves the city's urban form on many scales - from street trees to expansive views of lakes and rivers.

Minneapolis Plan: Open Space and Parks Policy 7.6.7– Maintain multi-modal transportation corridors to link parks and open spaces with surrounding neighborhoods.

Minneapolis Plan: Open Space and Parks Policy 7.8– Strengthen existing and create new partnerships, including public-private partnerships, to deliver the best park and open space system possible.

Minneapolis Plan: Open Space and Parks Policy 7.8.2– Support the preservation of former transportation corridors that are intact or largely intact and use them to connect neighborhoods to each other and major amenities.

Minneapolis Plan: Open Space and Parks Policy 8.5– New multi-family development or renovation should be designed in terms of traditional urban building form with pedestrian scale features at the street level.

Minneapolis Plan: Open Space and Parks Policy 8.5.6– Integrate transit facilities and bicycle parking amenities into the site design.

Above: West River Parkway Trail near West Broadway Ave.

3.3.11 Comprehensive Plan: Urban Design— Public projects need to fit in within the context of the surrounding area. Bike projects need to adhere to the following policies.

Minneapolis Plan: Urban Design Policy 8.1.1 – Protect historic resources from modifications that are not sensitive to their historic significance.

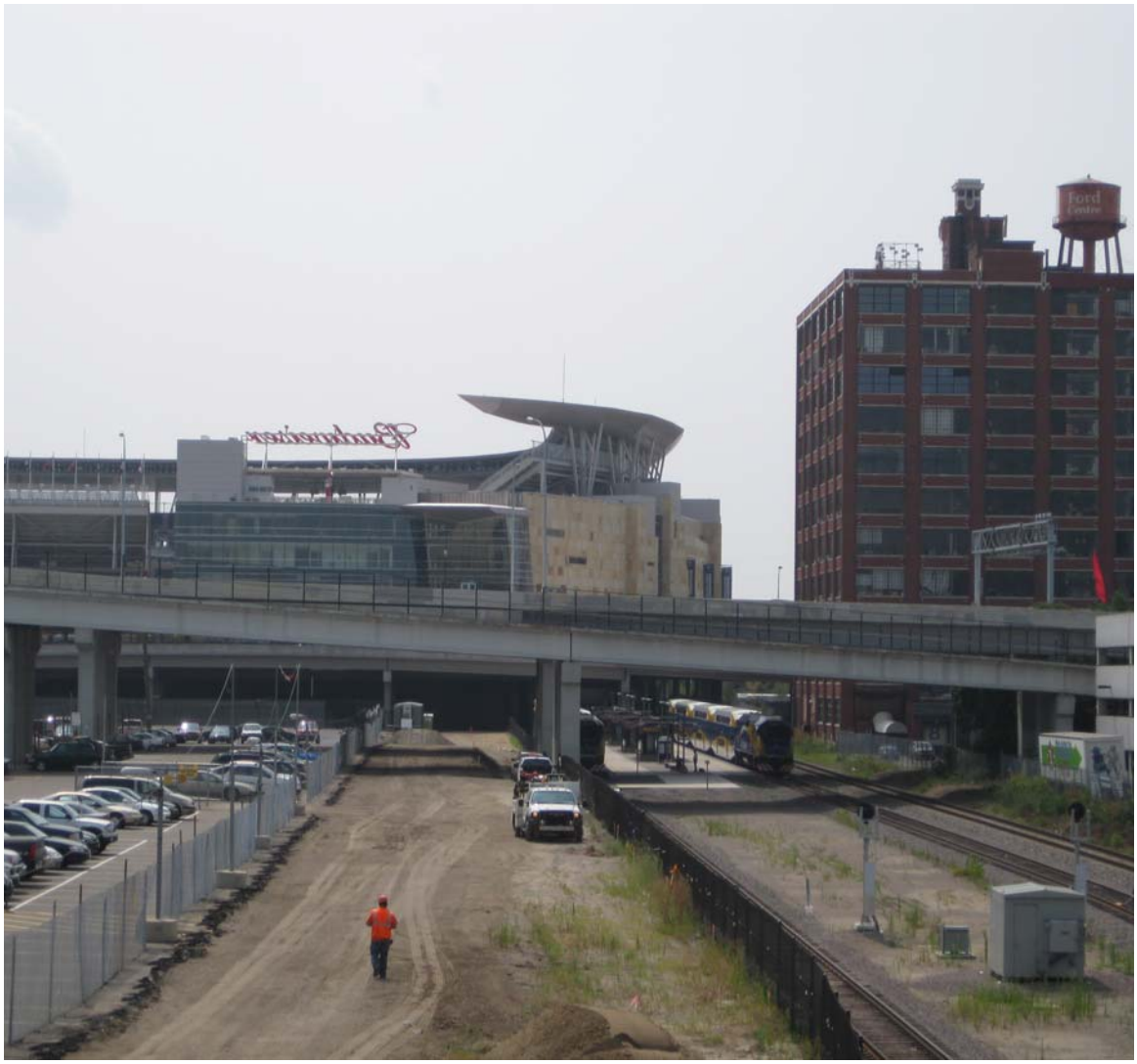
Minneapolis Plan: Urban Design Policy 8.1.2 – Require new construction in historic districts to be compatible with the historic fabric.

Minneapolis Plan: Urban Design Policy 8.19 – Promote an attractive environment by minimizing visual clutter and confusion caused by a proliferation of signage.

Minneapolis Plan: Urban Design Policy 8.19.4 – Develop a consistent city-wide way-finding signage design and maintenance plan for neighborhoods, trails, etc.

Minneapolis Plan: Urban Design Policy 8.22 – Preserve the natural ecology and the historical features that define Minneapolis' unique identity in the region.

Minneapolis Plan: Urban Design Policy 8.22.3 – Increase public recreational access to and across the river in the form of parks, bike/pedestrian bridges, greenways, and trails along the river.



Above: Twins Ballpark with the Cedar Lake Trail and Northstar Commuter Rail interface.

3.3.12 Small Area Plans— The City of Minneapolis has a number of detailed policy plans that are site specific. These plans solicit significant public input and in most cases include recommendations for both on-street and off-street bicycle facilities. Small area plans include:

Above: A bicyclist on the Stone Arch Bridge.

38th Street Station Area Plan—This plan promotes multi-modal connections to the light rail station. This plan includes a discussion about a trail on the east side of Hiawatha that could be possible with redevelopment.

38th Street and Chicago Avenue Small Area Plan/Corridor Framework Plan—This plan calls for bike lanes on both 38th Street and Chicago Avenue without widening either street. This plan also recommends bike racks at nodes and focusing resources on areas that improve access for bicycles and pedestrians. There is also emphasis on connections to both the RiverLake Greenway and to the Midtown Greenway.

46th and Hiawatha Station Area Master Plan– This plan supports trail connections to the Hiawatha LRT station with a future linear parkway/trail in the existing railroad right-of-way. Additional bike racks are also needed.

Above the Falls: A Master Plan for the Upper River in Minneapolis– This exhaustive plan evaluates future land uses along the Upper Mississippi River from the Camden Bridge to Downtown Minneapolis. The plan proposes to complete the trail gap on both sides of the River and also recommends east/west trail connections to the adjacent neighborhoods. Recommends creating a new trail (Bottineau Trail) along the BNSF spur on the east side of the river.

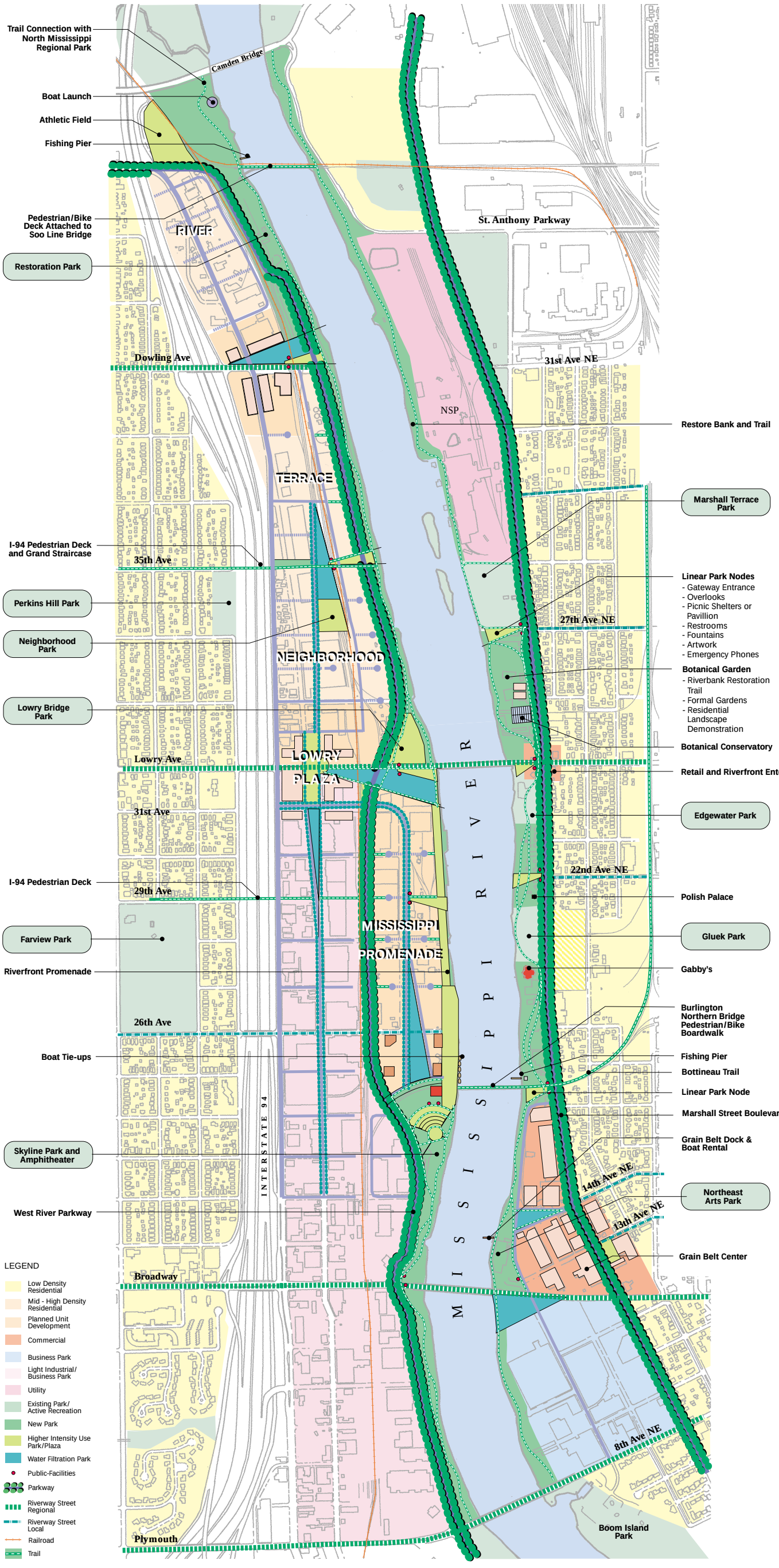
Audubon Park Small Area Plan—The community would like to see better connections to the Grand Rounds, a local bike shop, additional bicycle parking, and streetscape improvements.

Bassett Creek Valley Master Plan 2007— This plan supports bicycling as a mode of transportation and connections to regional trails such as the Cedar Lake Trail via Van White.

Bryn Mawr Neighborhood Land Use Plan—This plan acknowledges the good trail connections currently within the neighborhood. The plan also recognizes the low bicycle commuter mode share in the neighborhood compared to others. The plan strongly promotes additional bike racks in the area.

Next Page: The Above the Falls: Upper River Master Plan is a good example of a detailed small area plan.

Figure 3.5 - Upper River Master Plan



3.3.12 Small Area Plans— Continued

Above: A winter cyclist wearing warm gear.

Cedar-Riverside Small Area Plan—This plan recommends bicycle lanes on Riverside Avenue, bike lanes on 19th Avenue, and improvements to the bike lane on 20th Avenue. In general the plan supports bicycle connections to the U of M and to other neighborhoods within the city in addition to development that supports bicycling. There are opportunities for better bicycle connections to both the Central Corridor and Hiawatha LRT stations, and for more bike parking.

Central Avenue Small Area Plan—The plan recommends bicycle parking nodes along Central Avenue NE at 18th Ave NE, 22nd Ave NE, and 29th Ave NE. Bicycle lanes on Central Avenue are recommended with east/west connections along 18th Ave NE, 22nd Ave NE, 27th Ave NE (to the west), and 29th Ave NE (to the east). There are existing connections to St. Anthony Parkway.

Above: East River Parkway Trail.

Corcoran Midtown Revival Plan– This plan suggests traffic calming measures to help bicyclists get to and from destinations. There are also opportunities for good connections to the Midtown Greenway.

Development Objectives for the Hi-Lake Center– Secure bicycle parking is needed at this location as well as good connections to the Midtown Greenway, to Hiawatha Avenue, and Lake Street.

Development Objectives for North Nicollet Mall– This 1999 plan does not address bicycles.

Downtown East/North Loop Neighborhood Master Plan—This plan puts significance on bicycle movement throughout Downtown and the North Loop Neighborhood. Some of the priorities include the completion of the Cedar Lake Trail to the Mississippi River, bike lanes on 3rd St, bike lanes along the Hennepin Ave into NE, and bike lanes along 7th St into North Minneapolis. In 2010 a supplemental plan was prepared to reflect the changing conditions in the area, as a result of the new Twins Ballpark and the proposed Intermodal Station.

Elliot Park Neighborhood Master Plan—This plan mentions the need to strengthen bicycle connections to Franklin Steele Park, complete streets/traffic calming, and bicycle amenities.

3.3.12 Small Area Plans— Continued

Franklin-Cedar/Riverside Transit-Oriented Development Master Plan—This plan suggests that the bike network be completed by extending into other neighborhoods via 24th St and 11th Ave. 6th St provides a direct connection to 20th Ave, which is an existing bike route. The plan highlights the need for bicycle parking, lockers at transit nodes, and constructing bike lanes within existing street widths.

Above: A pair of bicyclists riding at night.

Grain Belt Brewery Area Development Objectives—The Grain Belt site presents opportunity for improving movements to the river from the neighborhoods. The plan strongly supports the goals outlined in the Above the Falls Master Plan, including a greener Marshall Street.

Hiawatha/Lake Station Area Master Plan—The Midtown Greenway is a dominant feature of this plan. There are opportunities for connections to the Lake Street station on both sides of Hiawatha Avenue.

Industrial Land Use and Employment Policy Plan—Although this study does not mention bicycles, it has a direct impact on two major local plans; the Above the Falls Master Plan and the Park Board Grand Rounds Completion. The Industrial Land Use Plan reaffirms the need to keep industrial land use districts in the city to keep jobs and tax base. It is recommended that those working to implement the Upper River Plan and Grand Rounds completion work closely with local businesses to minimize any negative impacts to business in the study areas.

Lowry Avenue Corridor Plan– Bicycle lanes and wide sidewalks are an integral part of this master plan. This plan suggests that bicycle lanes from Victory Pkwy to Stinson Blvd.

Lyndale Avenue: A Vision– Bicycle facilities are not being considered on this roadway north of 58th Street. Connections to Richfield via bike lanes on Lyndale Ave have been recently discussed.

Lyn-Lake Small Area Plan—Biking and walking are strongly encouraged in this plan, especially due to the proximity of the Midtown Greenway. Bike racks are needed in this area.

Master Plan for the Marcy-Holmes Neighborhood—The plan states the need for Share the Road signage on all bike route corridors in addition to accommodations on all roadway bridges over the freeway. The Marcy Holmes Neighborhood has a significant number of signed bike routes in addition to the Stone Arch Bridge, the 15th Street SE bike lanes, and bike lanes along University/4th Ave SE.

3.3.12 Small Area Plans— Continued

Midtown Greenway Land Use Plan—The Midtown Greenway is the defining feature of this land use plan. The plan strongly supports good bicycle and pedestrian connections to the Midtown Greenway and enhancements to the trail corridor.

Above: A Seward resident with her bicycle.

Midtown Minneapolis Land Use and Development Plan—The Midtown Greenway is a significant neighborhood asset. The plan supports transit connections, public promenades, and bicycle parking throughout the area.

Minneapolis Near Northside Master Plan—The plan generally supports bicycling and projects that support bicycling.

Minneapolis Warehouse Preservation Action Plan– This pertains to historic preservation and may limit certain types of bicycle facility improvements.

Nicollet Avenue: The Revitalization of Minneapolis Main Street—This plan presents an option for bike lanes along Nicollet Avenue. Bike lanes come with trade-offs however, such as loss of parking or traffic capacity. 1st Ave and Blaisdell Ave are alternative bike routes.

Nokomis East Station Area Plan—Bike racks and kiosks are recommended for 50th St. Bike lanes on 50th St have also been discussed.

Northside Jobs Park Design Guidelines Guidelines and Development Framework—This land use plan goes into significant detail regarding sidewalks and pedestrian amenities, but does not discuss bicycling.

Phillips West Master Land Use Plan—Solar access (sunshine on the trail) to the Midtown Greenway and traffic calmed roadways with on-street bike lanes are strongly desired. The plan also recommends 11 foot traffic lanes on minor arterials as a traffic calming measure.

Seward Longfellow Greenway Area Plan—The plan goes into significant detail on how to capitalize on the Midtown Greenway as a major neighborhood asset. There is also a fair amount of discussion about local bike routes and how connections to the Midtown Greenway can be achieved.

South Lyndale Corridor Master Plan—A combined bicycle and pedestrian trail from Grass Lake to Lyndale Avenue is recommended in addition to more bike parking.

3.3.12 Small Area Plans— Continued

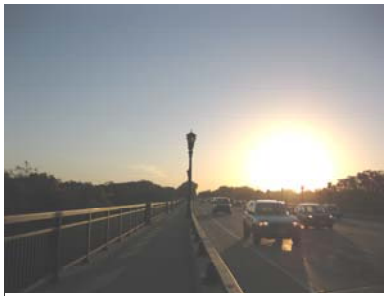
Southeast Minneapolis Industrial (SEMI)/Bridal Veil Refined Master Plan—This is an exhaustive plan that essentially looks at all of SE Minneapolis, especially east of the U of M campus. Planned trail corridors include the U of M Trail, Granary Parkway Trail, and a bridge over the BNSF corridor serving bicycles, motorists, and pedestrians. The plan calls for bike connections to Central Corridor stations.

Above: A Bancroft resident rides his bike.

University Ave SE and 29th Ave SE Development Objectives—Bike parking is needed in this area. There are also opportunities to connect to the U of M Transitway Trail, which is close by.

Above: A pair of bicyclists at Bike to Work Day.

Update to the Historic Mills District Master Plan—This plan recognizes a number of existing and proposed bicycle connections in the riverfront vicinity. The plan mentions the need for bicycle accommodations to newer attractions such as the Guthrie, Mill City Museum, and the Metrodome.



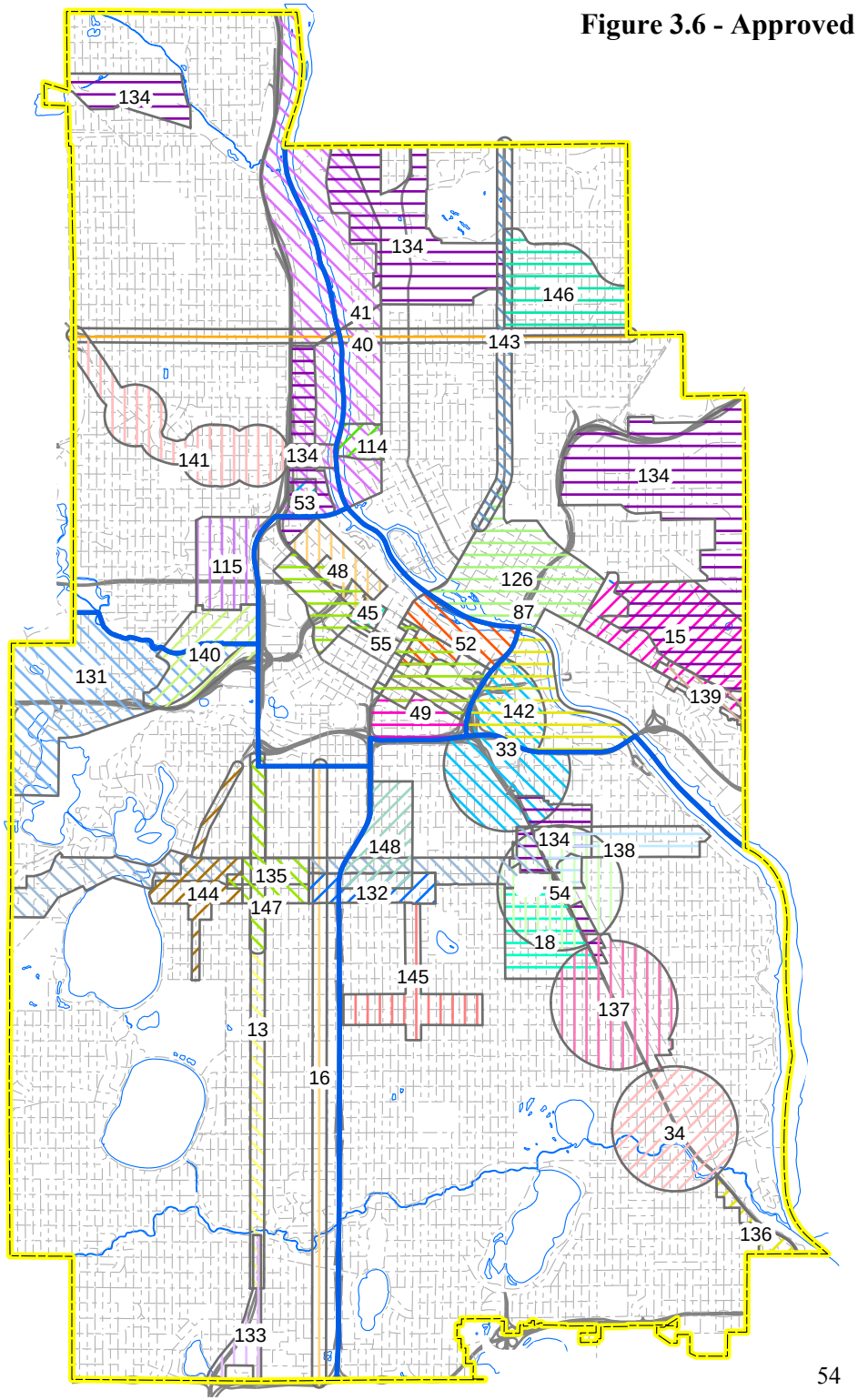
Above: Lake Street Bridge at sunrise.

Uptown Small Area Plan—One of the primary goals of this plan is to improve streets for bicycles, pedestrians, and transit. One specific need is to connect the Uptown core to the Midtown Greenway. Adding bike lanes to Hennepin Ave, Lake St, and Lagoon Ave were considered as part of this plan. There are 17 specific recommendations for improving bicycling and walking in Uptown including additional bike parking, intersection improvements, and wider sidewalks.

West Broadway Alive Plan—There appears to be consensus that additional bike parking is needed in this area. As part of the planning study many participants wanted to see a bike lane added to Broadway Ave, however there are capacity and parking trade-offs.

Above: Bicyclist on the Hennepin Avenue Bridge.

Figure 3.6 - Approved Small Area Plans



Small Area Plans

- 13, Lyndale Avenue: A Vision
- 15, Southeast Minneapolis Industrial (SEMI)/Bridal Veil Refined Master Plan
- 16, Nicollet Avenue: The Revitalization of Minneapolis Main Street
- 18, Corcoran Midtown Revival Plan
- 33, Franklin-Cedar/Riverside Transit-Oriented Development Master Plan
- 34, 46th and Hiawatha Station Area Master Plan
- 35, Development Objectives for the Hi-Lake Center
- 40, Lowry Avenue Corridor Plan
- 41, Above The Falls - A Master Plan for the Upper River in Minneapolis
- 45, Development Objectives for North Nicollet Mall
- 48, Minneapolis Warehouse Preservation Action Plan
- 49, Elliot Park Neighborhood Master Plan
- 52, Update to the Historic Mills District Master Plan
- 53, Northside Jobs Park Design Guidelines and Development Framework
- 54, Hiawatha/Lake Station Area Master Plan
- 55, Downtown East/North Loop Neighborhood Master Plan
- 114, Grain Belt Brewery Area Development Objectives
- 115, Minneapolis Near Northside Master Plan
- 126, Master Plan for the Marcy-Holmes Neighborhood
- 131, Bryn Mawr Neighborhood Land Use Plan
- 132, Midtown Minneapolis Land Use and Development Plan
- 133, South Lyndale Corridor Master Plan
- 134, Industrial Land Use and Employment Policy Plan
- 135, Midtown Greenway Land Use Plan
- 136, Nokomis East Station Area Plan
- 137, 38th Street Station Area Plan
- 138, Seward Longfellow Greenway Area Plan
- 139, University Avenue SE & 29th Avenue SE Development Objectives
- 140, Bassett Creek Valley Master Plan 2006
- 141, West Broadway Alive Plan
- 142, Cedar-Riverside Small Area Plan
- 143, Central Avenue Small Area Plan
- 144, Uptown Small Area Plan
- 145, 38th Street and Chicago Avenue Small Area / Corridor Framework Plan
- 146, Audubon Park Small Area Plan
- 147, Lyn-Lake Small Area Plan
- 148, Phillips West Master Land Use Plan

1 mile

3.4 Advisory Committees

3.4.1 Minneapolis Bicycle Advisory Committee (BAC)-

The Minneapolis Bicycle Advisory Committee (BAC) was created in 1990 to advise the Mayor, City Council, and Minneapolis Park and Recreation Board on bicycling related issues. The BAC was reorganized in 2010 with 27 voting members representing citizens, staff, and elected officials. The Bicycle Advisory Committee meets monthly and discusses a number of bicycling projects and issues.

Above: A Bicycle Advisory Committee meeting at Minneapolis City Hall.

Above: A Bicycle Advisory Committee mobile workshop.

Above: Several city staff members who work with the BAC.

Above: Winter bicyclist.

BAC Mission:

- Help advance the state of bicycle infrastructure by reviewing proposed bicycle facilities and other projects likely to have an impact on bicyclists, as a voice for end users.
- Encourage more people to bicycle both to meet their daily needs and for recreation, through such activities as participation in bike/walk celebrations and coordination with the Bicycle Ambassador program.
- Educate the public on safe bicycling.
- Work towards more compliance with traffic laws by both bicyclists and drivers through better enforcement.
- Help the City and Minneapolis Park and Recreation Board make bicycle plans and evaluate progress.
- Work to increase equity between bicyclists and other modes of transportation, especially equity in resource allocation.
- Review and suggest legislative and policy changes that will have an impact on bicyclists.
- Recommend priorities for the use of public funds on bicycle projects, both infrastructure and programming.
- Help ensure that Minneapolis keeps and improves its status as a League of American Bicyclists' Bicycle Friendly City.
- Serve as both a liaison between Minneapolis communities and the City and Park Board.
- Coordinate between different agencies that interact with bicyclists.

3.4.2 Hennepin County Bicycle Advisory Committee (BAC) -

The purpose of the Hennepin County Bicycle Advisory Committee is to advise the Hennepin County Board of Commissioners and county staff with ideas on how to incorporate bike accommodations into roadway and transit projects.

Above: Bicycle lanes on 26th Avenue South.

Staffing: The group is staffed by Hennepin County Public Works.

Membership: The Hennepin County Bicycle Advisory Committee consists of 7 appointed members, one from each of the County Commissioner districts in Hennepin County. The Bicycle Advisory Committee also has a number of ex-officio members that represent other biking interests, government agencies, and a liaison member to the Minneapolis Bicycle Advisory Committee. A number of the Bicycle Advisory Committee members are affiliated with area biking organizations and advocacy groups such as the Twin Cities Bicycle Club, Minnesota Coalition of Bicyclists, the Cedar Lake Park Association, and the Midtown Greenway Coalition. BAC members also participate in a number of area bicycling conferences and seminars.

Meetings: The Bicycle Advisory Committee meets on a monthly basis at various locations around Hennepin County. Discussion items include the status of current projects, bicycle issues, and planning studies. A bicycle tour of the local area often follows each meeting. Bicycle Advisory Committee meetings frequently have guest speakers that include local and regional park representatives, city trail coordinators, construction project engineers, and members of bicycle advisory groups. Minutes from Bicycle Advisory Committee meetings are posted on-line. On occasion, members of the Hennepin County Bicycle Advisory Committee will report on county projects at Minneapolis BAC meetings or vice/versa.

Topics: Past topics have included trail crossing issues, bicycle system gaps, construction project review, and funding discussions. The group often discusses how to capitalize on existing opportunities to add bicycle facilities. For example, if a county road is being paved, the group will weigh-in on whether or not to add bike lanes. Topics are balanced geographically throughout the county, however the group spends a considerable amount of time looking at Minneapolis projects and issues. Most of the meetings typically have an infrastructure item, announcements of upcoming events/seminars, and policy discussion.

Above: Gateway Trail in Ramsey County.

3.4.3 State Non-Motorized Transportation Committee—

The group's mission is to promote non-motorized transportation in Minnesota.

Above: Minnesota State Flag.

Vision Statement: Individually and collectively we will strengthen and encourage community support for non-motorized transportation throughout the state. We will do so through continuous and active participation with government agencies, and allied organizations, through education, public affairs, campaigns, and political initiatives.

Background: Appropriation law instituted the State Bicycle Advisory Committee in the mid 1980's to advise the Commissioner of Transportation and other state officials on issues pertaining to bicycle transportation in Minnesota. Over the ensuing years, it has operated under its own bylaws and with registration by the Secretary of State. In 2008, the committee was put into statute and asked to advise on non-motorized transportation modes. The committee then became the State Non-Motorized Transportation Committee (SNTC). The committee currently has 15 citizen members and 12 agency members and conducts 5 meetings per year. The executive committee and various short-term issue committees work on specific priority projects. The SNTC and Mn/DOT bike staff work to coordinate work plans and objectives.

Purpose of the Committee:

- Review and analyze issues and needs relating to operating non-motorized transportation on public rights-of-ways, and identify solutions and goals for addressing identified uses and needs.
- Work toward the goal of making non-motorized transportation a viable transportation and recreation option available to the citizens of Minnesota, recognizing the importance of action at all levels of decision-making and funding, including the local community level, in order for this goal to be realized.
- Assess and identify non-motorized transportation needs in the State's social and physical environments.
- Develop plans to meet the needs identified.

Membership: Membership consists of 18 appointed representatives by the MnDOT Transportation Commissioner. The committee also includes 7 citizen members who represent a non-profit trail organization, the bicycle industry, a bicycle club, and law enforcement. The committee shall also include representatives from state agencies including the Department of Administration, Department of Education, Department of Health, DNR, Department of Public Safety, Explore Minnesota, Department of Transportation, MPCA, Met Council, and from higher education.

Chapter 4 – Existing Conditions

4.1 Chapter Overview

Above: A bicyclist on the Cedar Lake Trail ramp near Royalston Avenue

4.1.1 Strategies: This section looks at the existing state of bicycling in Minneapolis. This chapter is divided into 6 sections, one for each of the "E's". The 6 E's are defined and discussed in Chapter 1.

The purpose of this chapter is to evaluate what is currently being accomplished throughout the city so that an accurate baseline can be established. Later chapters identify program needs and priorities, which are based on what is currently being done. This chapter will also look at strengths and weaknesses within the bicycle program and will recognize the various agencies and departments that are taking the lead.

Above: Bicycles parked at the University of Minnesota.

4.2 Education

Above: Children biking on a sidewalk along Minnehaha Parkway

Above: Children arriving at Lake Harriet School.

Above: A mother teaches her child to how to ride a bike.

Above: A promotional logo by Ken Avidor

4.2.1 Safe Routes to School—Safe Routes to School is a program that focuses on getting as many children as possible to bike or walk to school in a safe manner. As part of the SAFETEA-LU bill, Safe Routes to School is now a federal program with funding awarded to each state. MnDOT administers this process and awards funding to schools and cities for education and safety projects. In Minneapolis, every elementary and middle school has been evaluated by a professional engineer to identify all needed infrastructure/safety improvements in the immediate vicinity of the school. Many of these schools have already seen signage, striping, and signal changes around the school. Approximately half of all Minneapolis students live within a 20 minute bike ride of their current school. According to the Safe Routes Strategic Plan, the Minneapolis School District spends anywhere from $319 to $1,127 per elementary school student per year, between $658 and $1,792 per middle school student per year, and between $552 and $824 per high school student per year on transportation costs. Many schools have also started teaching bicycling safety in the classroom, and in many cases riding skills are taught in gym class. Some schools including Lake Harriet Upper, Anthony Middle, and South High have a high number of kids biking to school, whereas others have little or no bicycling at all. Bicycling barriers vary widely by school, however common challenges include distance, safety concerns, and bicycle theft. About half of the public schools have received new bicycle parking within the last 5 years. It is critical that parents, principals, teachers, students, and communities work together to make sure that Safe Routes to School is a success in the city.

Above: Bike lanes along North 7th Street.

4.2.2 Minneapolis TMO -The Minneapolis Transportation Management Organization (TMO) is an organization that works to promote alternative transportation modes including transit, carpooling, telecommuting, bicycling, and walking.

Convenient transportation choices are no longer a barrier for most in the city with access to buses, LRT, and plentiful bicycle and pedestrian facilities. TMO staff often attend commuter fairs and work with Downtown employers to reach out to Downtown employees. Commuter fairs are usually held in skyways or lunchrooms and are set up to distribute information like bike maps or bus schedules. Programs like the Guaranteed Ride Home and Metropass are helpful options for a bicyclist with a flat tire, stuck in bad weather, or too tired to make the trip by bike. The Bike 2 Benefits Incentives Program offers prizes for those who bike once a week for eight weeks.

In addition to the Minneapolis TMO, St. Paul Smart Trips and the I-494 Commuter Services offer similar services in the region.

Above: A TMO event at Wells Fargo.

4.2.3 Professional Development: The Twin Cities has been host to several national bicycling conventions and meetings including the bi-annual Pro Bike Pro Walk Conference, the National Rails-to-Trails Conference, and the Mid-America Trails and Greenways Conference. The city has also hosted national meetings for engineering and planning disciplines with mobile workshops featuring the local bicycle network. The City of Minneapolis has worked closely with educational institutions and with professional organizations to promote educational seminars, research, webinars, and workshops that benefit bicycling in the region.

Above: A public meeting to discuss a proposed plan.

4.3 Encouragement

4.3.1 The Benefits of Biking—There are four primary reasons the City of Minneapolis encourages residents to bike; health benefits, improving the environment, reducing traffic congestion, and

Above: This bicyclist is getting exercise while saving money.

4.3.1 The Benefits of Biking (Continued)

saving money. The vast majority of utilitarian bicyclists who have been surveyed feel healthier and happier than they did before they biked.

Above: A bicyclist riding near Lake Nokomis

Health Benefits: Bicycling is good for your health. According to the Center for Disease Control, obesity amongst both children and adults is at an all time high. Over 25% of adults in Minnesota are now considered obese. An active lifestyle which includes activities like bicycling helps prevent diabetes, stroke, and heart disease. Almost 700,000 people die each year in the United States of heart disease. Diabetes claims another 75,000 people per year nationally.

Above: The lagoon between Lake Calhoun to Lake of the Isles

Environmental Benefits: Bicycling is good for the environment. Based on past surveys the average commuter bicyclist travels about five miles to get to work. A person bicycling 5 miles (10 miles both ways) 3 times per week will keep almost 1,500 lbs of carbon dioxide out of the atmosphere each year given they had traveled in a vehicle that gets 20 mpg instead (freedombicycle.com). Minneapolis is a leader in environmental initiatives and bicycling is one of the performance measures tracked.

Above: Traffic approaching NE 35th Street

Traffic Congestion Benefits: Bicycling improves traffic congestion. On an average spring, summer, or fall day there are approximately 15,000 bicyclists that traverse the City of Minneapolis. To put this number in perspective, roughly 100,000 vehicles per day use I-394 entering the city limits. Even though only 25% of all bicyclists bike year-round, the city still has a 2.5% bicycling mode share (US Census), which creates enough reduction in driving to improve traffic congestion.

Financial Benefits: Bicycling saves money. Given the cost of fuel, bicycling can save hundreds, if not thousands of dollars every year in transportation costs. According to the Environmental and Energy Study Institute, transportation expenses are only second to housing expenses when it comes to the amount an average family or individual spends each year. According to Kiplinger.com a bicyclist can save $4.04 per day taking a bike, given a 10 mile round trip. When parking is factored in, this number can be considerably higher.

Above: Bicycling saves money by avoiding driving expenses

4.3.2 Barriers—Removing or mitigating barriers to bicycling is key to increasing bicycle use and improving safety:

Above: A full trail closure

Physical Barriers: Railroads, rivers, and freeways are huge physical barriers for bicyclists. In some cases existing bridges can be retrofitted to accommodate bicycles, but in many cases bicyclists must either travel out of their way to cross a physical barrier or use a roadway or bridge that may feel uncomfortable or unsafe. A number of bicycle and pedestrian bridges have been constructed throughout the city to help reduce barriers, which improves safety and increases bicycle use.

Above: Interstate-94 near the Camden Bridge

Safety Barriers: Many people choose not to bike because they do not feel safe. In some cases it is because of the lack of bicycle facilities or poor roadway design, but in other cases it is because of crime and personal safety concerns. The lack of safe and secure bicycle facilities is the leading reason for why people choose not to bike according to Minneapolis Public Works surveys. In some cases personal security barriers can be mitigated with better lighting or surveillance.

Above: 40th Street Bike Lane in the Kingfield Neighborhood

Time, Weather, and Convenience Barriers: When cyclists are surveyed about why they choose not to bike, common responses include “too far”, “can’t bike in bad weather”, and “does not fit into my schedule”. With nearly every transit vehicle in the Twin Cities now equipped with bike racks many bicyclists are now reconsidering bicycling as a mode of transportation. There are nearly 20 bicycle shops within the city that sell bicycles and clothing for Minnesota’s extreme climate.

Above: Midtown Greenway in winter

Social Barriers: Bicycling is a social activity. There are a number of bicycling clubs throughout the region and many companies offer incentives to bike to work. The environmental, transportation, health, and financial benefits of biking have been effectively marketed and it appears that bicycling is more widely accepted according to the Minneapolis TMO.

4.3.2 Barriers - Continued

2001 Survey—The last bicycle survey that asked about barriers to bicycling was completed in 2001 as part of the last Bicycle Master Plan process. 188 bicyclists were surveyed and responded to the question:

"What barriers prevent you from bicycling?"

Above: Riding with traffic is not a barrier for this bicyclist

Making the decision to bicycle:

- Weather (27% of the responses)
- Time (4% of responses)
- Distance (3% of responses)
- Impractical or Inconvenient (3% of responses)
- Laziness (1% of responses)

Above: This taxi is parked in the bike lane, a physical barrier

Barriers getting to the destination:

- Safety concerns/fear of drivers (28% of the responses)
- Not enough off-street trails and on-street bike lanes (17% of responses)
- Poor maintenance of roadways, bridges, bikeways (8% of responses)
- Construction activities (4% of responses)
- Poorly planned bikeways and lack of signs (2% of responses)
- Inadequate lighting (2% of responses)
- Transportation mode integration options (1% of responses)

Above: The sub-zero temperatures are not a barrier for this bicyclist

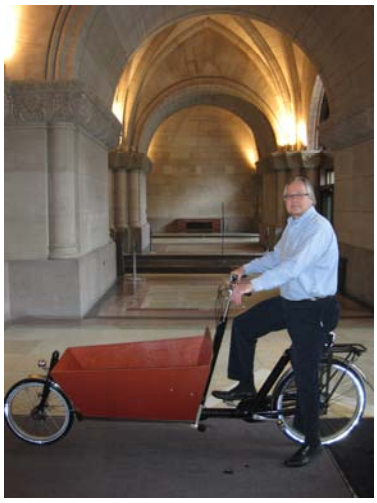
Barriers at the destination:

- Adequate and secure bicycle parking (6% of the responses)
- Locker and shower facilities (less than 1% of responses)
- Attitude of others (less than 1% of responses)
- Restricted Routes (less than 1% of responses)
- Vehicles in bike lanes (less than 1% of responses)

4.3.3 Trip Purpose—Day to day activities make up a significant amount of all trips regardless of mode. Trips to the grocery store, bakery, post office, schools, exercise club, convenience store, library, hardware store, churches, and community centers can easily be done on a bike. However, only 1.3% of all transportation trips in Minneapolis are made on a bike according to the 2001 National Household Travel Survey (NHTS). Although the city has a high bicycle mode share with regard to commuting to work, there are relatively few people using a bicycle for running errands. According to the National Bicycling and Walking Study published by the Federal Highway Administration, 9.9% of bicycling trips relate to earning a living, 19.7% for personal/family business, 55.4% for social/recreational purposes, and 14.1% for school, church, or civic purposes. 1% of bicyclists bike for other purposes than what was mentioned.

Above: Mackenzie Turner uses her bike to run errands.

In city surveys, adult bikers have indicated that they will travel up to 10 miles on a bike. According to the National Household Travel Survey, the average trip distance for all purposes is 10.14 miles. The NHTS also reveals that only 8.8% of American households are car-free. According to the European Union the average American cycles 0.06 miles every day as opposed to 1.5 miles each day for Dutch residents, 1 mile each day for Danish residents, and a half mile per day for Belgian and German residents.



Above: Paul Smith's Dutch Cargo bicycle will haul as many groceries as a car trunk.

Higher densities and a high number of mixed use nodes in the city help to create an environment where most necessary goods and services are available within a reasonable biking distance from most residences.

4.3.4 Bicycle Events—There are dozens of bicycle events throughout the City of Minneapolis each year. The following are several examples of bicycle related events throughout the city.

Above: Blessing of the Bikes at the Basilica.

4.3.3 Bicycle Events – Continued

Above: Great River Energy Bicycle Festival/ Nature Valley Grand Prix.

Above: Bike-In at the Bell. Events such as this help bring the community together.

Above: Midtown Greenway Arbor Day event.

Above: Bike Giveaway at Lake Harriet.

Above: Bike Walk to Work Day event.

Above: Minneapolis Bicycle Tour.

4.3.5 Tourism—Tourism is an $11.2 billion dollar per year industry in Minnesota with over half of that being generated from out-of-state visitors. The leisure and hospitality industry for the state employs over 250,000 workers with almost 75,000 of those jobs located in Hennepin County. Over 39 million people visit the state each year. Many of those individuals participate in outdoor recreational activities including hunting, fishing, boating, snowmobiling, skiing, hiking, and bicycling.

Above: Minneapolis Sculpture Garden

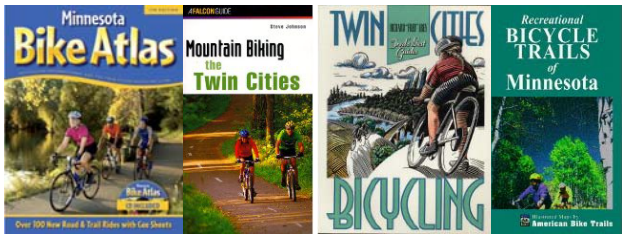
A 2009 study conducted by the University of Minnesota in collaboration with the State of Minnesota determined that bicyclists spend $481 million annually while recreating, creating 5,880 jobs and $40.6 million in state and local taxes. Meet Minneapolis and Explore Minnesota are two agencies that help promote the city and state and bring tourism and convention funding to the area.

Above: Great Rivers Trail in Lilydale

The Sheridan Hotel along the Midtown Greenway offers special rates and lodging packages to those who are seeking an urban bicycle adventure. Customers receive a "bicyclists welcome" package that includes local bike maps and other goodies. They also offer free bicycle valet service and 25% off bicycle rental at the nearby Freewheel Midtown Bicycle Center.

Minneapolis has one of the best off-street trail systems in the world. With over 700 miles of trails in the Twin Cities region not even Copenhagen or Amsterdam have the abundance of off-street facilities. By promoting the region as a world class bicycling city, more people will choose Minneapolis and Minnesota as their next vacation destination.

Above: Luce Line Trail



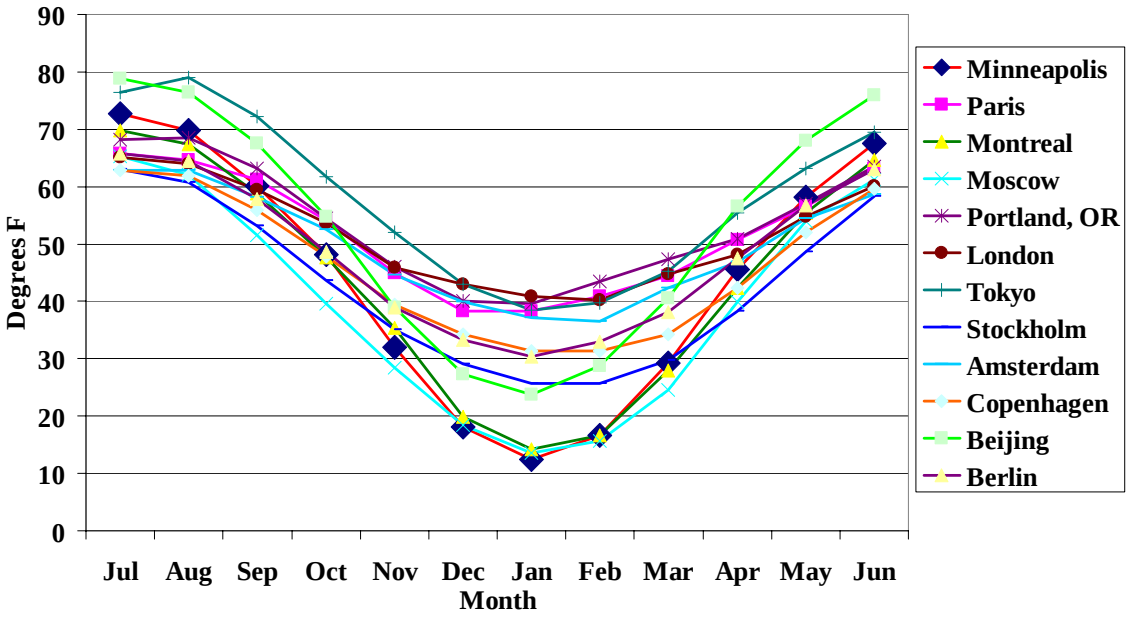
Above: There are numerous book by several authors that promote recreational bicycling in Minnesota.

4.3.6 Winter Bicycling—Minnesota is known for its weather extremes. Most long-time residents have experienced temperatures in excess of 100° F and –30° F. With such temperature extremes it is surprising to learn that Minneapolis has very high bicycle use compared to most US cities. According to a recent study completed by Transit for Livable Communities, 20% of all bicyclists ride in all winter conditions and 36% of all bicyclists ride during fair winter weather. There are several winter bicycling seminars that are taught each year, and local bike shops sell winter clothing and gear (such as studded tires). Most trails and bike lanes are plowed, sanded/salted, and swept. Adequate winter maintenance remains a huge concern for year-round bicyclists.

Above: A winter bicyclist in front of the TCF Bank Tower

Figure 4.1

Northern Cities Average Temperatures



Above: The graph shows average temperatures for several cities in the Northern Hemisphere. Most of the cities that have higher bicycle mode shares including Amsterdam, Copenhagen, and Portland have more moderate climates. Minneapolis can best be compared to Moscow and Montreal in terms of climate. Montreal is a very bicycle friendly city with excellent infrastructure whereas Moscow lacks bicycle accommodations. On average, Minneapolis receives 50 inches of snow per year, Montreal receives 86 inches, and Moscow receives 60 inches.

4.3.7 Bicycle Industry— Minnesota has one of the strongest bicycle industries in the nation and is home to a number of local bicycle shops and corporations that provide parts and services for bicycles. According to Bicycle Retailer and Industry News, the bicycle industry in Minnesota generates over $200 million annually. Over 250,000 bicycles are sold in Minnesota each year. 80% of bikes sold are at large retail chains including Wal-mart, Toys R Us, and Target (incidentally the Target corporate headquarters is located in Downtown Minneapolis). 20% of bicycles in Minnesota are sold at independent bicycle dealers. Located within the region are several large retailers including Penn Cycle and Eric's Bike Shop, which have 7 and 13 bike shops respectively. According to the National Bicycle Dealers Association, 18.5 million bicycles were sold nationwide in 2008. Over 60% of these bicycles were under $400.

Quality Bicycle Products located in Bloomington, Minnesota is one of the largest bicycle parts distributors in the world with approximately 450 employees. Park Tool of St. Paul is the largest bicycle tool manufacturer in the US and Dero Bike Rack Company is based in South Minneapolis. Kurt Manufacturing located in NE Minneapolis produces and sells bicycle training gear. There are dozens of other small businesses throughout the area that specialize in bicycle parts and manufacturing in addition to bicycle related services including bars, restaurants, and clothing shops that cater to cycling.

Above: Even though there is a high number of bike shops in Minneapolis, the majority of bicycles are purchased at Target, Wal-Mart, K-Mart, and Sears. The photo above is the entrance to the Target at the Quarry Shopping Center.

Table 4.1 – Bicycle Shops in Minneapolis

Bike Shops in Minneapolis	Address	Offers Bicycle Rentals
Alternative Bike and Board Shop	3013 Lyndale Avenue	Yes
Angry Catfish	4208 28th Ave S	No
Behind Bars	208 13th Ave NE	No
Calhoun Cycle	3342 Hennepin Avenue South	No
Calhoun Rental	1622 Lake Street	Yes
Carlson's Cycles	316 West 48th Street	No
Kvale Chris Cycles	2637 27th Avenue South	No
Curt Goodrich Bicycles	2010 E Hennepin Ave	No
Erik's Bike Shop	1312 4th Street SE	Yes
Flanders Brothers Cycles	2707 Lyndale Avenue South	No
Freewheel Bike Shop	1812 South 6th Street	No
Freewheel Midtown Bike	2834 10th Avenue South	Yes
Full Cycle	3515 Chicago Ave S	No
Grease Pit Bike Shop	1507 South 6th Street	No
Hiawatha Cyclery	4301 East 54th Street	No
Hub Bike Coop	3020 Minnehaha Avenue	No
Hub Bike Coop	301 Cedar Avenue	No
Nokomis Cycle	4553 Bloomington Avenue South	No
One on One Bicycle Studio	117 Washington Avenue North	Yes
Penn Cycle	710 West Lake St	Yes
Re-Cycle	2327 Hennepin Ave	No
Sunrise Cyclery	901 W Lake Street	No
Varsity Bike Shop	1306 SE 4th Street	No

Above: The table above is a list of all of the bicycle shops in Minneapolis, their location, and whether they offer bicycle rentals. Many of the local bike shop including the Hub Coop, Flanders, Behind Bars, and Penn Cycle have bike racing teams that compete regionally and nationally.

4.3.8 Bicycle and Pedestrian Ambassadors—

Minneapolis is one of a handful of American cities with a Bicycle and Pedestrian Ambassador Program. The mission of this program is to increase bicycling and walking as a part of transportation in Minneapolis and its neighboring communities. This is done by providing grassroots biking and walking education and outreach, encouraging people to drive less and bike and walk more.

Above: The Bicycle and Pedestrian Ambassadors meet with dignitaries

The Bicycle and Pedestrian Ambassador Program is funded through the Federal Non-Motorized Transportation Pilot Program and has been funded for three years. Four full-time city employees currently staff this program with several youth ambassadors that assist part-time. Staff work with several target audiences to increase cycling mode share.

Above: Bike Walk to Work Day event

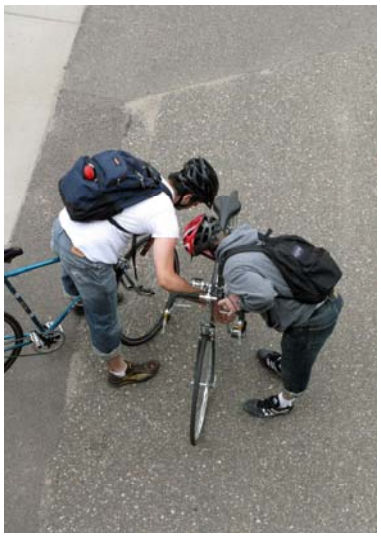
The program provides education and outreach to Minneapolis and all of the adjoining cities. Its work plan priorities include:

- To deliver an effective marketing campaign.
- To promote a culture of courtesy, acceptance, and safety, for all modes including motorists, bicyclists, and pedestrians.
- To build a program with long-term committed Steering Committee members.
- To foster a social norm where walking and biking are part of everyday routines.
- To work with community leaders to frame program strategies, build community based partnerships, and work with volunteers.
- To leverage existing governmental and community efforts to maximize results.
- To create a program with clear and measurable outcomes, as well as a built-in evaluation that fulfills the grant's intent.

Above: The Bicycle and Pedestrian Ambassadors participate in a number of events

Above: The Bicycle and Pedestrian Ambassadors

4.3.9 Advocacy—Minneapolis has a number of groups that advocate for better conditions for bicyclists. The primary role of advocates is to provide a forum in which members can work together to ask elected officials for specific infrastructure improvements and policy changes that improve cycling. Some of the most active advocacy groups in the area include the Bicycle Alliance of Minnesota, the Minneapolis Bicycle Coalition, the Midtown Greenway Coalition, the Minneapolis Off-Road Cycling Advocates, Transit for Livable Communities, and the Cedar Lake Park Association. According to the Alliance for Bicycling and Walking, advocacy capacity may be linked to higher levels of biking.



Above: A bicyclist helps another bicyclist fix his bike

4.3.10 Bike Clubs— The Twin Cities region has a number of bicycle clubs that travel the area on organized recreational bicycle rides. The following bike clubs are the most active:

- The Twin Cities Bicycle Club: One of the largest clubs in the nation with over 2,500 members and over 2,000 organized rides each year.
- Major Taylor Bike Club: An African American bicycling club named after world champion racer Marshall "Major" Taylor.
- Hiawatha Bike Club: Local bicycle club with over 150 participating members with over 400 rides per year.
- Minnesota Cycling Federation: Comprised of several bicycle racing clubs throughout the region. Its purpose is the education and promotion of bicycle racing skills and safety, and the promotion of bicycle races for bicycle racers.

Above: A number of bikes at a bicycle facility grand opening

Above: Nice Ride kiosk in Downtown Minneapolis.

Table 4.2 – Twin Cities Bicycling Club Ride Types

Ride Type	Description	Minimum Average Riding Speed	Riders Must Have	Rest Stops	Repairs	Leader Rides
A	Very Strenuous Fast Paced, most difficult terrain, or longer distance	About 18 mph-riders may ride faster or slower	Advanced cycling skills, spare tube, patch kit, pump	At leader's discretion	Riders fix their own bikes	Anywhere
A/B	Strenuous Swift, more difficult terrain, or long distance	About 16 mph—riders may ride faster or slower	Intermediate to advanced cycling skills, spare tube patch kit, pump	About every 20-30 miles	Riders fix their own bikes	Anywhere
B	Brisk Social, but emphasis is on riding– A good choice for experienced group riders generally intermediate or greater pace, terrain and distance.	About 14 mph	Intermediate to more advanced cycling skills; spare tube, patch kit, pump	About every 15-20 miles	Leader helps	At the rear of the riders who are riding at a B pace.
B/C	Moderate Social emphasis, but for those with riding experience—generally intermediate pace, terrain and distance	About 12 mph	Intermediate cycling skills; spare tube, patch kit, pump	About every 10-15 miles	Leader helps	At the rear of the riders who are riding at a B/C pace.
C	Relaxed Easier, for a more laid back time, perfect for newer riders, slower pace and flatter terrain, shorter distance.	About 10 mph	Entry level to intermediate cycling skills; spare tube, patch kit, pump	About every 10-15 miles	Leader helps	At the rear
N (Night)	Night B/C pace, social, safety stressed, lights required	About 10 mph	Generally intermediate cycling skills; spare tube, patch kit, pump, front	About every 10-15 miles	Leader helps	Front and rear (must have 2 leaders) Night Ride
R (Randonneur)	Strenuous Long distance "brevet" ride with time limits and required checkpoints . Randonneur USA rules apply. Cooperative Spirit.	About 12-20 mph; must finish within time limits	Intermediate to advanced cycling skills; spare tube, patch kit, pump, spirit of self-sufficiency	About every 30 miles	Riders fix their own bikes	Anywhere

Table 4.2: Table 5.2 is used by the Twin Cities Bicycle Club (TCBC). The table is based on the AASHTO classification system and demonstrates the need to accommodate different bicyclist's skills and abilities. Table 5.2 is also more specific with A/B and B/C riders defined.

4.4 Enforcement

4.4.1 Law Enforcement—Police officers receive general training regarding bicycle-related traffic laws in the police academy and are constantly keeping up with changes in state statute and city ordinance. The projects and programs below are a sampling of the commitment to bicycling and bicycling safety from local law enforcement.

Above: Police officers on bicycles. The Minneapolis Police Department has 229 of out 825 officers (28%) who are certified by the International Police Mountain Bike Association to be bicycle officers. Approximately 35 officers per year receive this certification. In 2010, the Downtown Precinct regularly uses 14 full-time and 6 part time bicycle patrol officers.

Bicycle Recovery Program: Police officers have created a program to recover hundreds of stolen and lost bicycles throughout the city. The police department sponsors bicycle auctions on a regular basis to sell the bicycles that can't be returned.

Decreasing Bicycle Theft: Bicycle theft is going down, especially at the U of M. More U-locks and the Bike Bait program have helped to deter thieves.

Bike Cops for Kids: Police officers in North Minneapolis have started a program where the department gives bicycle helmets to kids. If officers later spot these kids wearing their helmets while on patrol, they are awarded a new bike.

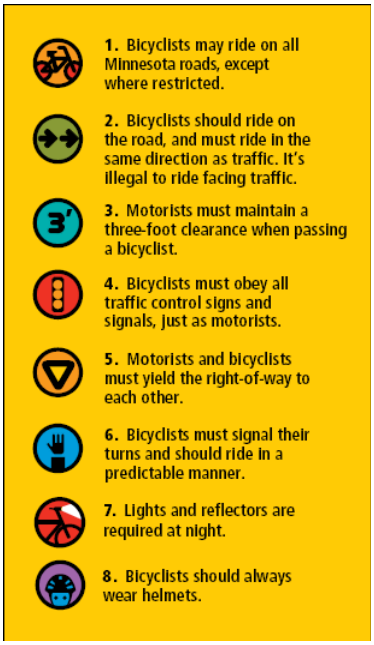
National Bicycle Unity Tour: Several Minneapolis Police officers have participated in the National Bicycle Unity Tour, which supports the National Law Enforcement Officers Memorial. Police officers have also sponsored local rides to honor local officers who have died . This fund is used to assist family members of fallen officers.

Non-Motorized Transportation Pilot Program: Federal dollars are being used for targeted enforcement along road and trail corridors that are being improved as part of this program.

4.4.2 Rules of the Road—The State of Minnesota and City of Minneapolis have established a number of statutes and ordinances that pertain to bicycling. Below are some statutes and ordinances that are specific to Minnesota and to Minneapolis.

- In Minnesota, bicycles are considered vehicles and can legally ride two-abreast in a traffic lane.
- Minnesota is currently one of 14 states that require motorists to give three feet of space to bicyclists when they pass.
- In Minnesota, a bicyclist is not required to use a bike lane or path if one is provided.
- Although wearing a helmet is recommended, it is not required by statute.
- Bicyclists are prohibited from using freeways in Minnesota. Some western states allow bicycling on freeways.
- State statute states that bicyclists are not allowed to ride on a sidewalk in a business district unless the local community allows it. By ordinance, Minneapolis does not allow riding a bicycle on a sidewalk in a commercial district to protect pedestrians.
- Bicycle registration is no longer required in the City of Minneapolis.
- Bicyclists riding on a sidewalk must give audible signal when passing a pedestrian.
- Bicyclists must provide hand signals.

Minneapolis ordinances also have provisions for bicycle parking at planned developments, impounding bicycles, bicycle parking regulations, permits for bicycle parades/races, showers and clothing locker requirements, and pedicab operation. Bikes are allowed to use the Nicollet Mall 24 hours per day, 7 days per week. Biking is permitted on the 2nd and Marquette bus lanes during off-peak periods (6AM-9AM and 3PM-7PM).



Above (Right): To the upper right is a brochure that the Minnesota Department of Transportation prepared based on current statutes. This is distributed to the public to promote safe bicycling.

Above: Rachel Speck demonstrates how to signal a left turn.

4.5 Engineering

Above: The Midtown Exchange

4.5.1 Density—Dense communities typically result in more bicycling. Bike projects that are located in areas that connect high population densities to high employment densities are very desirable because they are likely the projects that will serve the highest numbers of bicyclists. These areas also tend to be the most congested and tend to generate the most crashes. Population and employment density are two factors often used to prioritize regional funding.

4.5.2 Development Factors—Minneapolis was platted in a grid before the invention of the automobile. Most of the surrounding first ring suburbs were constructed between 1940 and 1965 in the height of the interstate era with little consideration for bicycles. Many of the bicycle accommodations in Minneapolis are the result of redevelopment. Newer communities (second and third ring suburbs) have also included bicycle facilities into new streets and developments. A map of all bicycle facilities in the metropolitan area was completed a few years ago and a striking observation can be made. There are relatively few bicycle facilities in first ring suburbs, creating a donut around both Minneapolis and St. Paul. Several regional trails have been completed within the last 15 years that have helped bridge this gap including the SW LRT Trails, the Luce Line Trail, the Gateway Trail, and the Bruce Vento Trail. Many of the first ring suburbs now also have policies that support bicycling and walking.

4.5.3 Spacing of Bikeways —To ensure a safe and reasonable bicycle facility network, it has been concluded that trails should be spaced approximately 2 miles apart, bike lanes 1 mile apart, and local signed routes 1/2 mile apart. This density ensures that no one within the city is more than 1 mile from a trail, a 1/2 mile from a bike lane, or 1/4 mile from a signed route. In denser areas including Downtown and the U of M, facilities may be spaced more closely together.

4.5.4 Planning and Zoning—The Minneapolis Comprehensive Plan addresses land use and planning policy for the city. The zoning code implements those policies through the regulation of new building development. The zoning code encourages and gives incentives for the integration of bike friendly design and amenities by requiring public and private bike parking within new developments. City of Minneapolis staff review all new projects and developments to make sure that the goals, policies, and ordinances of the city are met. Building proposals are typically taken to the Minneapolis Planning Commission for approval. The city has also taken on a number of small area plans, which are site specific land use plans. Small area plans typically evaluate a given corridor, node, or district. Most small area plans address transportation issues including bicycling by offering suggested bikeway improvements.

Figure 4.2 – Existing Land Use in Minneapolis

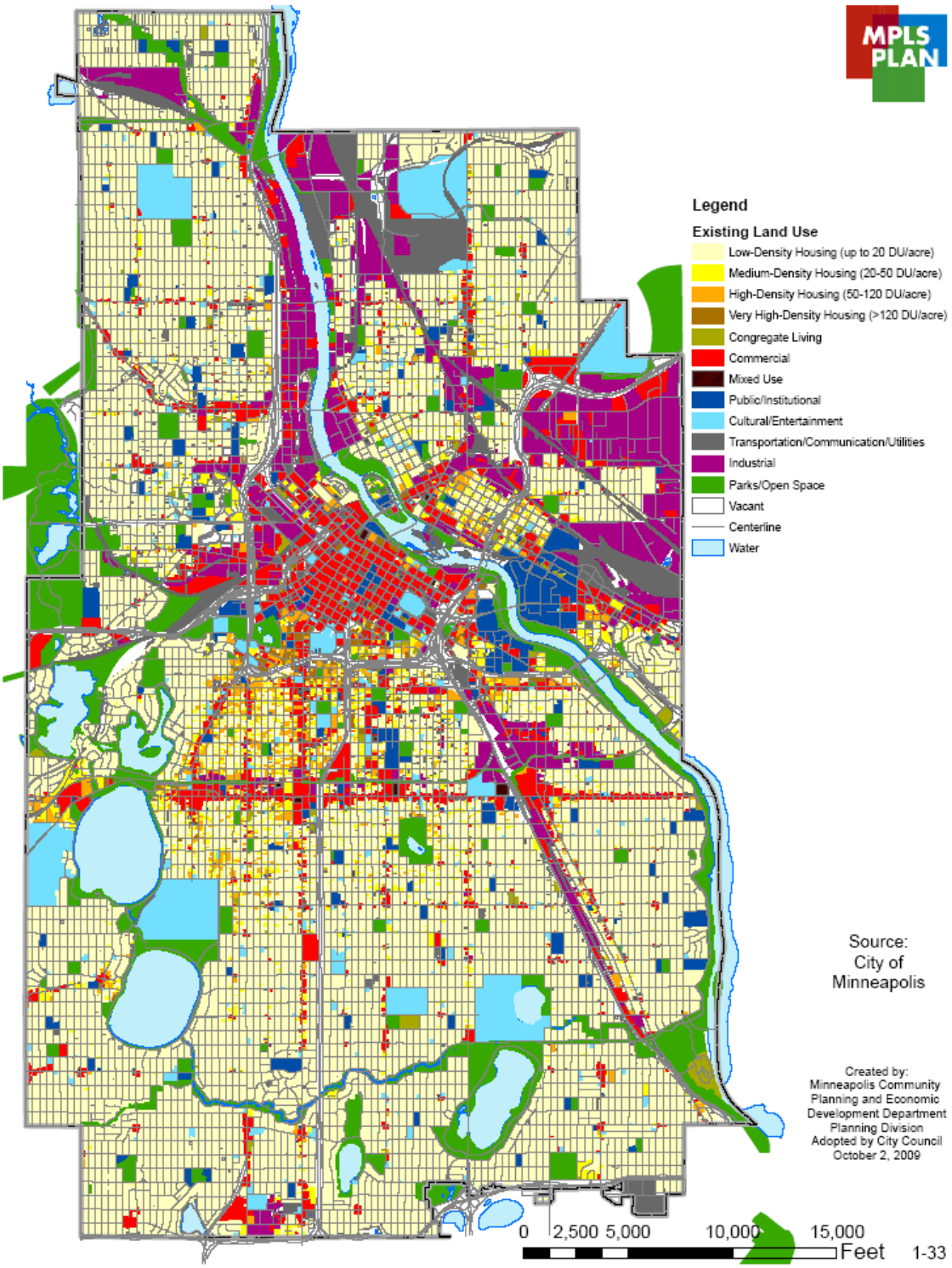


Figure 4.3 - Employment Density of Minneapolis

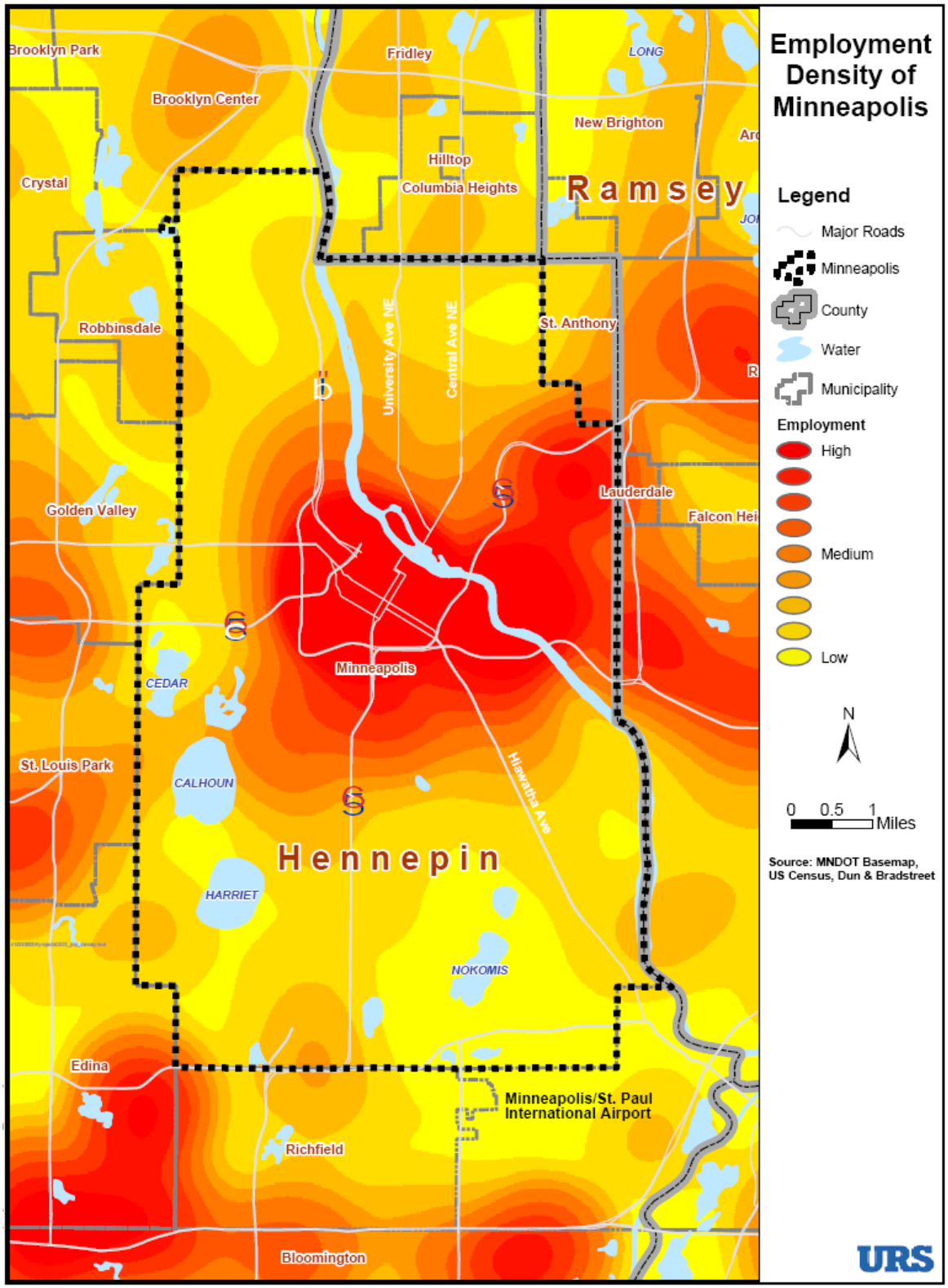
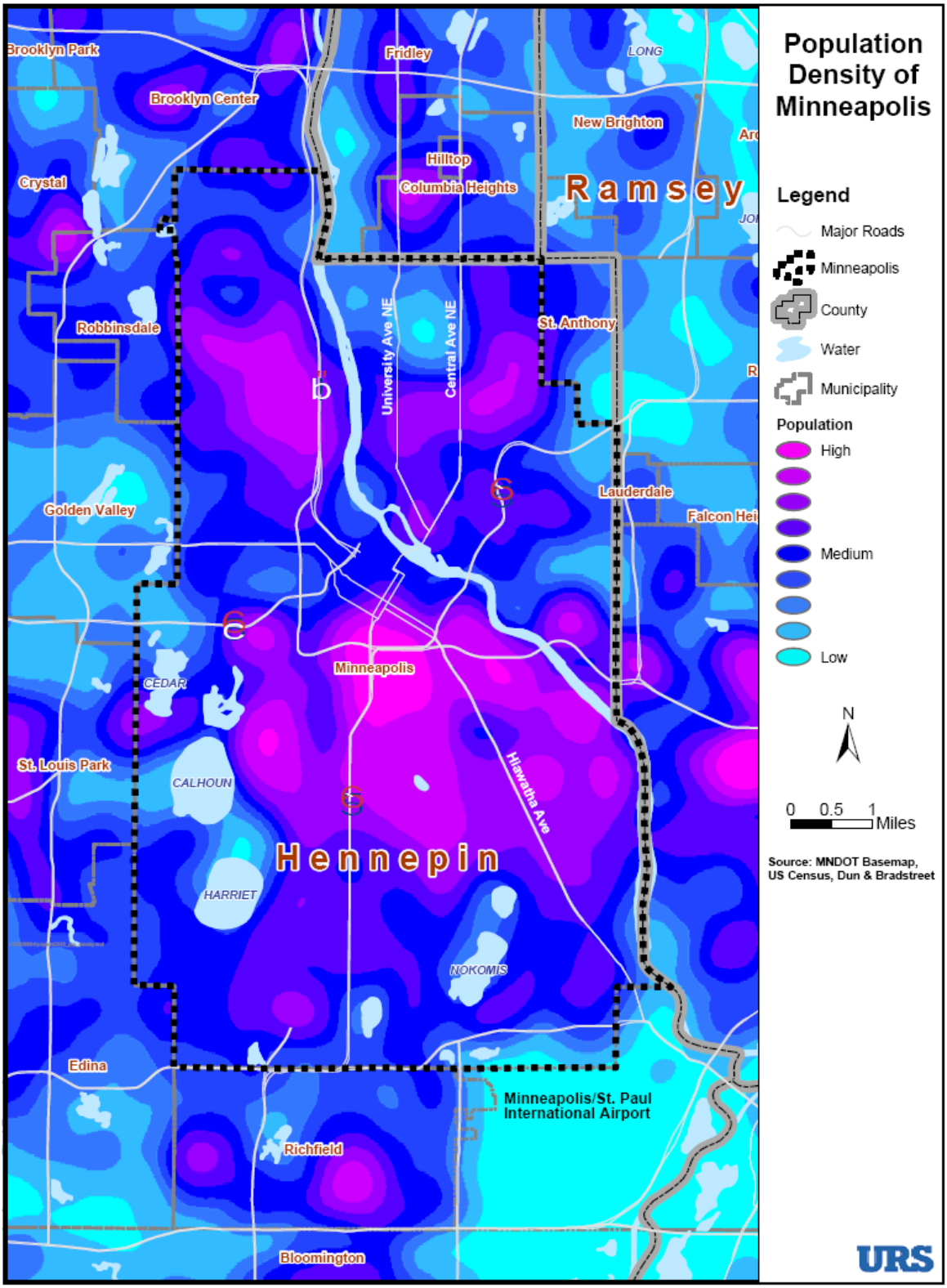


Figure 4.4 – Population Density of Minneapolis



4.5.5 Historic Preservation—Historic preservation is currently enforced by the Minneapolis Heritage Preservation Commission, MnDOT Cultural Resources, and the State Historic Preservation Office (SHPO). Projects, including bike projects, with federal funding must undergo a review to protect the historical character of an area. There are a number of historic districts throughout the city including:

- The South Ninth Street Historic District
- The St. Anthony Falls Historic District
- The Stevens Square Historic District
- The Victory Memorial Drive Historic District
- The Washburn Fair-Oaks Historic District
- The Fifth Street Southeast Historic District
- The University of Minnesota Greek Letter Chapter House Historic District
- The Harmon Place Historic District
- The Healy Block Historic District
- The Milwaukee Avenue Historic District
- The Minnehaha Historic District
- The North Loop Warehouse Historic District

Above: Historic St. Anthony Main

4.5.6 Protecting Natural Resources—Protecting natural resources is a high priority for the city. The City of Minneapolis, in partnership with several watershed groups works to improve stormwater quality and manage stormwater quantity. Capital projects, including bike projects, must mitigate stormwater runoff and need to follow best practices with regard to erosion control. In addition to protecting water quality, the Department of Natural Resources reviews all federal projects to see if any endangered or threatened species are impacted by the project. Bicycle facilities are often coupled with environmental projects, presenting a number of funding opportunities for new bike projects.

Above: Mississippi River near Coon Rapids

Above: Mississippi River near the University of Minnesota

4.5.7 Access to Destinations—Access to destinations is important for all travel modes, especially for popular locations that attract large numbers. Colleges/universities, shopping malls, stadiums, and central business districts require planning and accommodations for bicycles.

Above: Guthrie Theatre

Not every destination is easy to get to by bike. There are often physical barriers or lack of safe facilities in the vicinity of popular destinations that inhibits or prevents bicycling as a transportation mode. A classic example of this can be found at the Minneapolis/St. Paul International Airport. Until the opening of the Hiawatha Light Rail Line, it was impossible to get to the Lindbergh Terminal (Terminal 1) by a bicycle. It is also difficult for many to bike to most regional malls, to find safe routes that cross rivers and freeways, and to get to business nodes along minor arterials. Progress has been made in Minneapolis to easily get to major bicycling destinations including the U of M, Lake Street, Uptown, and Downtown through the addition of trails, bike lanes, and signed bicycle routes.

Above: Minneapolis Institute of Art

It is estimated that there are 15,000 bicyclists traveling throughout the city on an average spring, summer, or fall day. This number is closer to 4,000 in the winter months. Over 50% of bicyclists within the city are destined for the U of M and 25% of all bicyclists are destined for Downtown Minneapolis. The remaining 25% of bicyclists are traveling to schools, community business/retail nodes, parks, cultural attractions, and to other residential areas within the city. These estimates are based on cordon (perimeter) counts, citywide bike counts, census data, and surveys.

Above: Chain of Lakes

Above: St. Paul Riverfront

Above: Downtown St. Paul

Above: Mall of America

Above: Lake Minnetonka

4.5.8 Bikeways—Currently there are several types of bikeways that can be found throughout the city:

Trails: There are close to 84 miles of off-street paved trails throughout the city. This does not include unpaved trails or mountain biking trails throughout the city. Some of the most prominent trails include the Minneapolis Grand Rounds, the Midtown Greenway, Cedar Lake Trail and Minneapolis Diagonal Trail. Most of these trails are plowed in winter, and are open to the public 24/7.

Above: Stone Arch Bridge

Bicycle Boulevard: The City of Minneapolis is adding several miles of bicycle boulevards, which are local streets adjacent to minor arterials that are traffic calmed to give preference to bicycles.

Above: RiverLake Greenway

Bike Lanes: There are over 44 miles of on-street bike lanes throughout the city. Most of the bike lane mileage is in Downtown Minneapolis or connections to Downtown. Some of the highest used bike lanes are located near the University of Minnesota campus. Many of the bike lanes are located on minor arterial roadways including University Ave, Park/Portland Ave, Plymouth Ave, and Riverside Ave.

Above: North 7th St Bike Lane

On-Street Greenways: Streets like Milwaukee Avenue have been closed to cars and are for bicycles and pedestrians only.

Above: A greenway along Milwaukee Ave

Signed Bike Lanes: There are several miles of signed routes throughout city (marked with a bike route or share the road sign). Most of the signed routes are located in the Como Neighborhood, Prospect Park Neighborhood, Audubon Park Neighborhood, and Marcy Holmes Neighborhood.

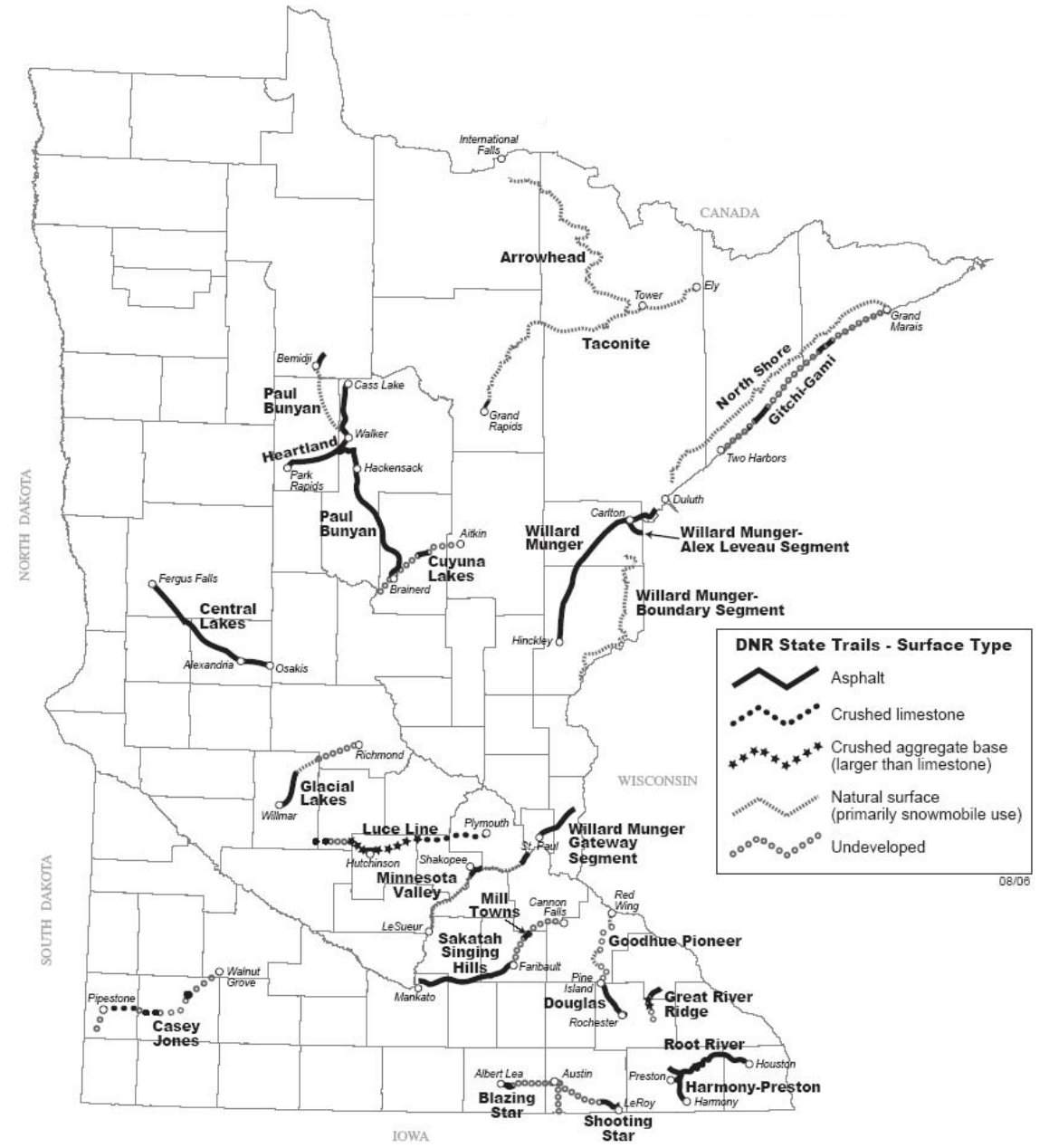
Shared Use Pavement Markings (Sharrows): Bryant Ave was the first roadway in the city to have shared use pavement markings installed. Several new corridors are being implemented as part of the Non-Motorized Transportation Pilot Program.

Above: A Share the Road sign. There are several of these signs In Audubon Park.

Left: Shared Use Pavement Markings

4.5.9 Minnesota State Trails—Minnesota has more miles of paved rail-to-trail bikeways than any other state. There are a total of 14 state trails with 523 miles of paved trails in the system. Map below courtesy of the Minnesota DNR.

Figure 4.5 – Minnesota's State Trail System



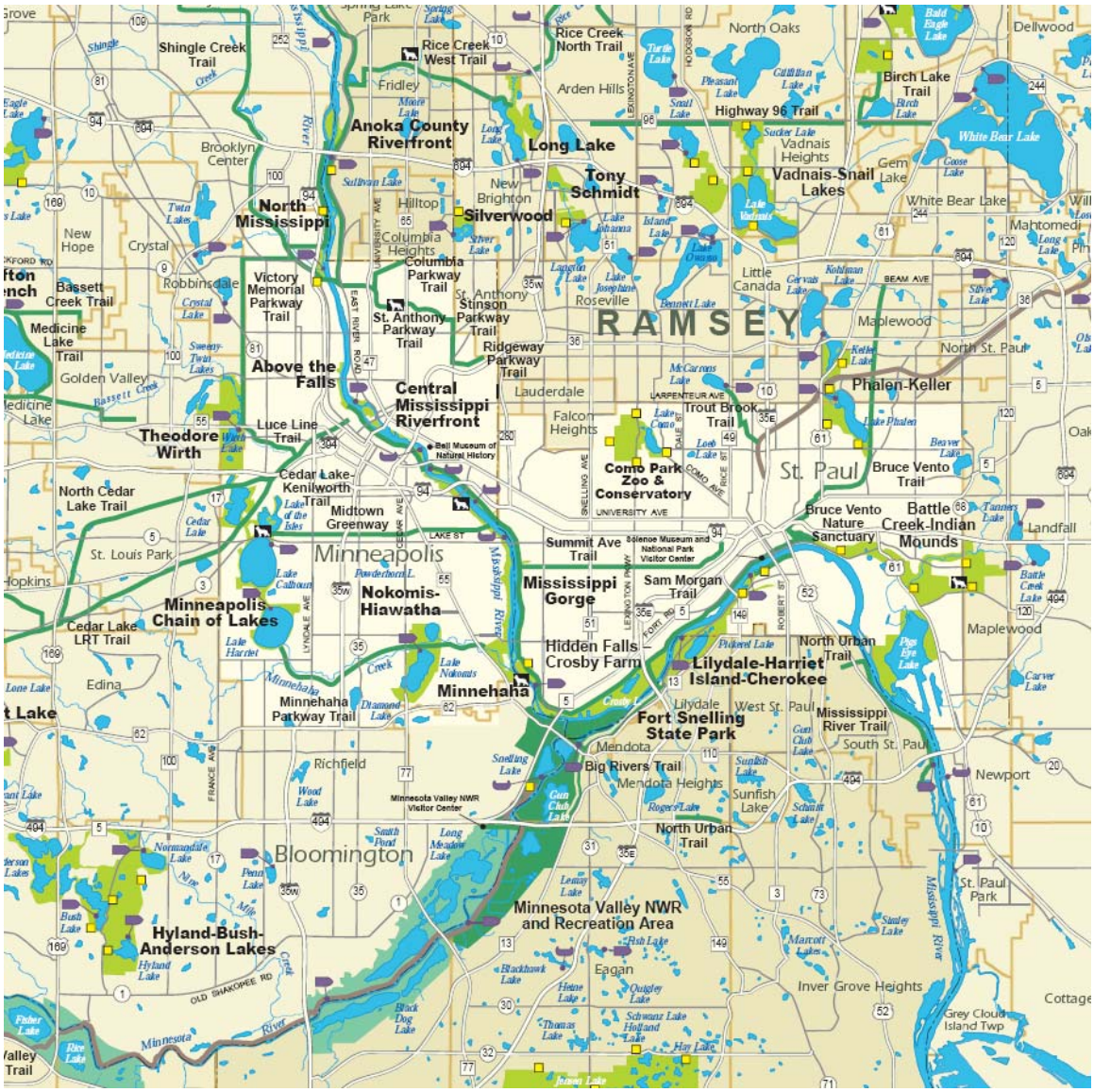
Above: A DNR State Trail

4.5.10 Regional Trails—The regional park system in the Twin Cities consists of 49 regional parks and regional park preserves, 29 trails, and 6 special recreation areas. There are several regional trails in Minneapolis, some of which are the busiest in the region. A 2008 regional park survey found that 48% of regional trail users in Minneapolis are visitors from other parts of the region. Only 8% of regional park visitors in Minneapolis arrived by bicycle.

Right: Regional trail connection at the Coon Rapids Dam

Below: Map of existing regional trails. Courtesy of the Metropolitan Council

Figure 4.6 – Met Council Regional Parks and Trails System



4.5.11 Bicycle Parking: The City of Minneapolis completed an exhaustive bicycle parking inventory in Fall 2007. The study found that there were 4,169 bicycle racks with 17,026 bicycle parking spaces available to the public. The city also counted 331 locker spaces, most of which are located in Downtown, at the U of M, and at Metro Transit stations Since 2007, approximately 300 racks have been added within the city. A special Non-Motorized Transportation Pilot Program (NTP) grant will add an additional 200 bike racks to parks, schools, post offices, and business nodes throughout the city. Approximately 50% of existing parks and schools currently have adequate bicycle parking. The 2007 map shows bicycle parking locations.

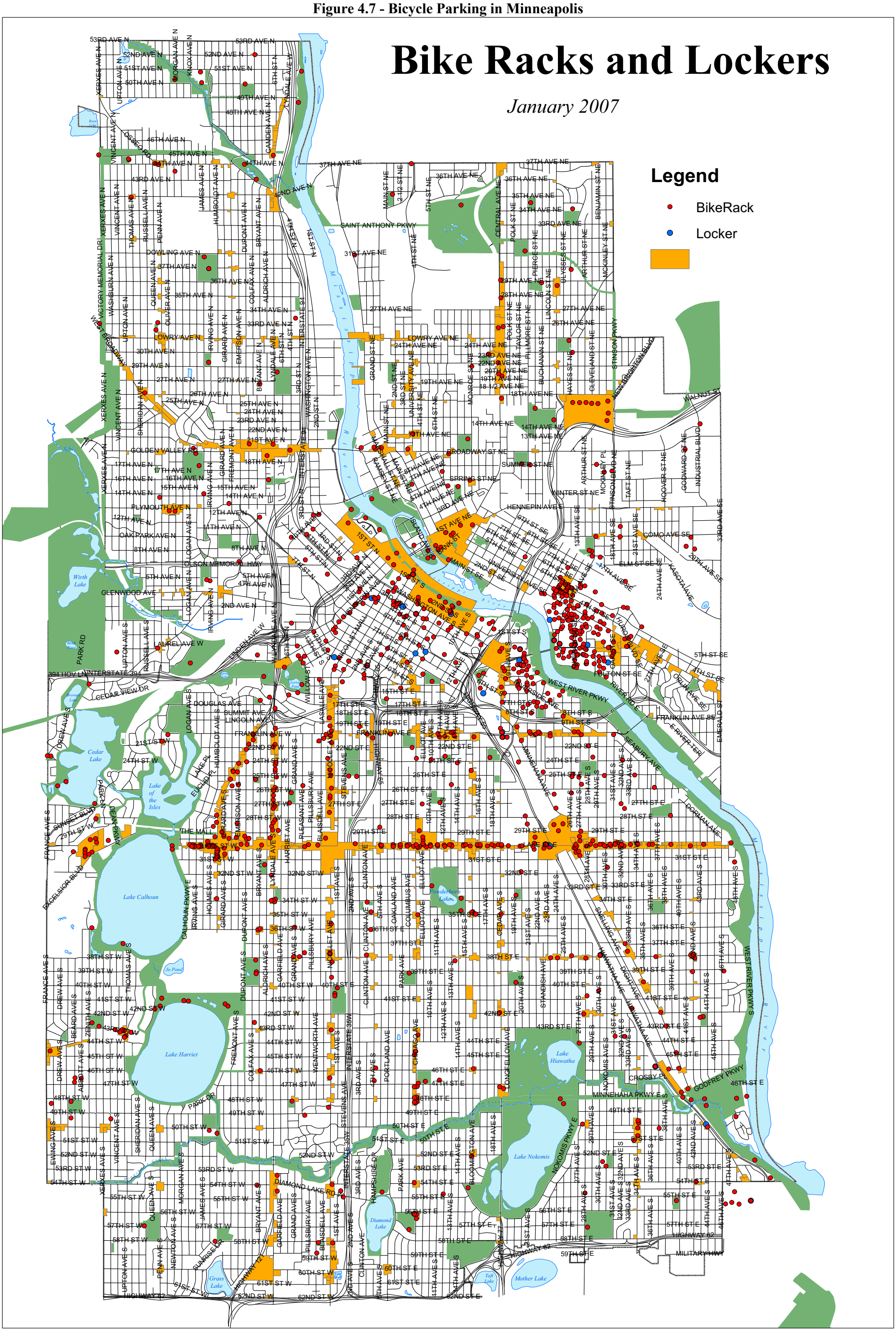
Above: Bicycle Parking at the Central Library

Table 4.3 - Bicycle Parking Ordinance

New Buildings (as of 1/09)	Minimum Bicycle Parking Requirement
Non-residential uses < 1,000 square feet	Exempt
Residential—Single family to 4 units	Exempt
Multi-family dwellings (5 or more units)	1 space per two dwelling units
Schools (K-12)	3 spaces per classroom
Community Centers	6 spaces
Theatres	3 spaces
General retail sales and services	3 spaces or 1 space per 5,000 sq ft of general floor area
Offices	3 spaces or 1 space per 15,000 sq ft of general floor area
Restaurant or coffee shop	3 spaces
Indoor or outdoor recreation facility	3 spaces
Sports and health facility	3 spaces or 1 space per 10,000 sq ft of general floor area
Medical clinic	3 spaces
Industrial uses	2 spaces or 1 space per 20,00/30,000/40,000 sq ft
Post office	3 spaces

*This table is a summary. Additional standards exist mandating the location of long-term and short-term bicycle parking, and there are separate rules for Downtown Minneapolis. For the full version, see Table 541-3 of the City of Minneapolis Zoning Code (Title 20, Chapter 541).

Figure 4.7 - Bicycle Parking in Minneapolis



4.5.12 Support Facilities—There are several types of bicycle support facilities that can be found throughout the city. These facilities include:

Above: Bicycle in Downtown Minneapolis

Bike Corrals: All major bicycle events with more than 100 people have staffed corrals. Some of the local major events include the State Fair, Taste of Minnesota, and Bike to Work Day.

Bicycle Shower and Locker Facilities: There are public shower and locker facilities at the Hawthorne Transportation Center and at the Midtown Bike Center. City and County employees can use the showers and lockers at the Federal Courthouse for a fee. Several Downtown corporations including Ameriprise and Target have showers and lockers for their employees.

Bike Share: Minneapolis is one of the first cities in the United States to roll out this program. It is also one of the largest systems. Users rent bikes at a kiosk and are able return them to a different kiosk.

Above: Bicycle Corral in Washington D.C.

Bike Station: Minneapolis has the only Bike Station in the state of Minnesota (located along the Midtown Greenway) and will soon get another one at the University of Minnesota campus. Services include showers/lockers, rentals, repair, and retail.

Maps: Both the city and county distribute free bike maps to the public both on-line and at some events. Bike maps can also be purchased at local book stores and gas stations.

Pedicabs: The city has a number of operating pedicabs that operate when the weather is nice. Special ordinances govern their use.

Above: Bike share in the Warehouse District

Above: Midtown Bike Center

4.5.13 Innovative Bicycle Facilities: Innovative facilities are used in situations where traditional methods or treatments do not adequately address a given problem or situation. Below are examples of innovative and experimental treatments used or proposed in the City of Minneapolis:

Above: Bicycle Box at Franklin and E River Parkway

Bicycle Boulevard: The City of Minneapolis has received funding to add several miles of bicycle boulevards, which are local streets adjacent to minor arterials that are traffic calmed to give preference to bicycles.

Bike Box: Advance stop lines, commonly know as bike boxes, allow bicyclists to make a transition at an intersection when the light is red. This better positions a bicyclist to make a left turn. The first bike boxes in the city were installed on 1st Ave N.

Above: Pavement markings along Hennepin Avenue

Colored Bike Lanes: Colored bike lanes have been installed on several routes in Downtown Minneapolis. 4th street is the only bike lane corridor left with a red sealcoat. Green will be used in the future.

Monolithic Gutter Pan Bike Lanes: A 60-inch (5-foot) monolithic gutter pan can be used to meet CSA and MSA lane width standards. This has been done on Hennepin Avenue, Como Avenue, and 10th Street.

Above: Pavement markings along Hennepin Avenue

Separated Trails: First installed around the lakes, this treatment has become common throughout the region. Separating bicycles from pedestrians not only improves safety, but also improves capacity where there are a lot of cyclists.

Above: Separated trail along the Midtown Greenway

Above: Signage along 1st Avenue North

4.5.14 Safety and Security—A handful of trail corridors, including the Midtown Greenway and Lake Calhoun, have Code Blue Emergency Phones. These devices are directly linked to 911 dispatchers. In the case of the Midtown Greenway, the emergency phones are supplemented by security cameras. The cameras have been very helpful in solving crimes and for prosecution. These devices are expensive to install and maintain and were funded/installed before it became common for most to carry cell phones. Lighting and regular patrol are also effective tools in fighting crime. Most of the commuter trails have been designed to allow for emergency vehicles to drive on the trails for easy rescue and patrol.

Above: A Code Blue Phone near Lake Calhoun

4.5.15 Traffic Safety– One of the most important considerations in bicycle facility design is safety, particularly along on-street corridors. Unless special situations warrant, bicycle lanes should be striped on the right side of the road, should be 5-6 feet in width, and should not be placed in a door zone. There is considerable debate with regard to how streets should be designed. Lane widths, number of traffic lanes, and whether bike lanes should even be placed on some minor arterials are frequently discussed topics. A traffic engineering study should be conducted before changing a roadway to ensure safety and modal balance. More information on this topic can be found in the Minneapolis Bicycle Design Guidelines.

Above: A surveillance system at the 5th Precinct.

Above: Traffic safety is an important consideration when building and maintaining transportation infrastructure.

Above: A fiber optic cabinet along the Midtown Greenway

4.5.16 Maintenance: The City of Minneapolis, University of Minnesota, Hennepin County and the Minneapolis Park and Recreation Board maintain trails and on-street bikeways throughout the city. The October 2000 Bikeways Report defines what regular maintenance and extraordinary maintenance should be. The document also assigned maintenance responsibilities.

Above: A street sweeper in Downtown Minneapolis

The following existing bikeways are maintained by the Minneapolis Park and Recreation Board:

- Bridge #9
- Cedar Lake Trail
- Kenilworth Trail
- Loring Bikeway
- Minneapolis Diagonal
- Minneapolis Grand Rounds
- Humboldt Greenway
- Stone Arch Bridge

Above: A snow plow along the Midtown Greenway

The following existing bikeways are maintained by the Minneapolis Public Works:

- All on-street bike lanes
- Midtown Greenway
- Van White Memorial Trail

The following existing bikeways are maintained by the University of Minnesota:

- Harvard Street bike lane
- Pillsbury Drive bike lane
- Union Street bike lane
- U of M Transitway Trail (not plowed in winter)
- Washington Avenue Bridge

Above: A snow plow along the Midtown Greenway

Bike lane striping on county roads is maintained by Hennepin County and the signage is maintained by the City of Minneapolis.

4.5.17 Non Motorized Transportation Pilot Program (NTP)—In 2005 Congress authorized $25 million to be spent in Minneapolis and surrounding communities on a pilot project "to demonstrate the extent to which bicycling and walking can carry a significant part of the transportation load, and represent a major portion of the transportation solution, within selected communities." The program is a partnership between the Federal Highway Administration (FHWA), the Minnesota Department of Transportation (MnDOT), Transit for Livable Communities, and the City of Minneapolis. The program is scheduled to add 35 miles of new trails, bike lanes, and bicycle boulevards to the existing bikeways network within the city (see page 5-33). The NTP program has also funded the Bicycle and Pedestrian Ambassador Program, the Nice Ride Bike Share initiative, several planning studies, and the proposed Bike Station at the U of M. The results of this program will be reported to Congress in 2010.

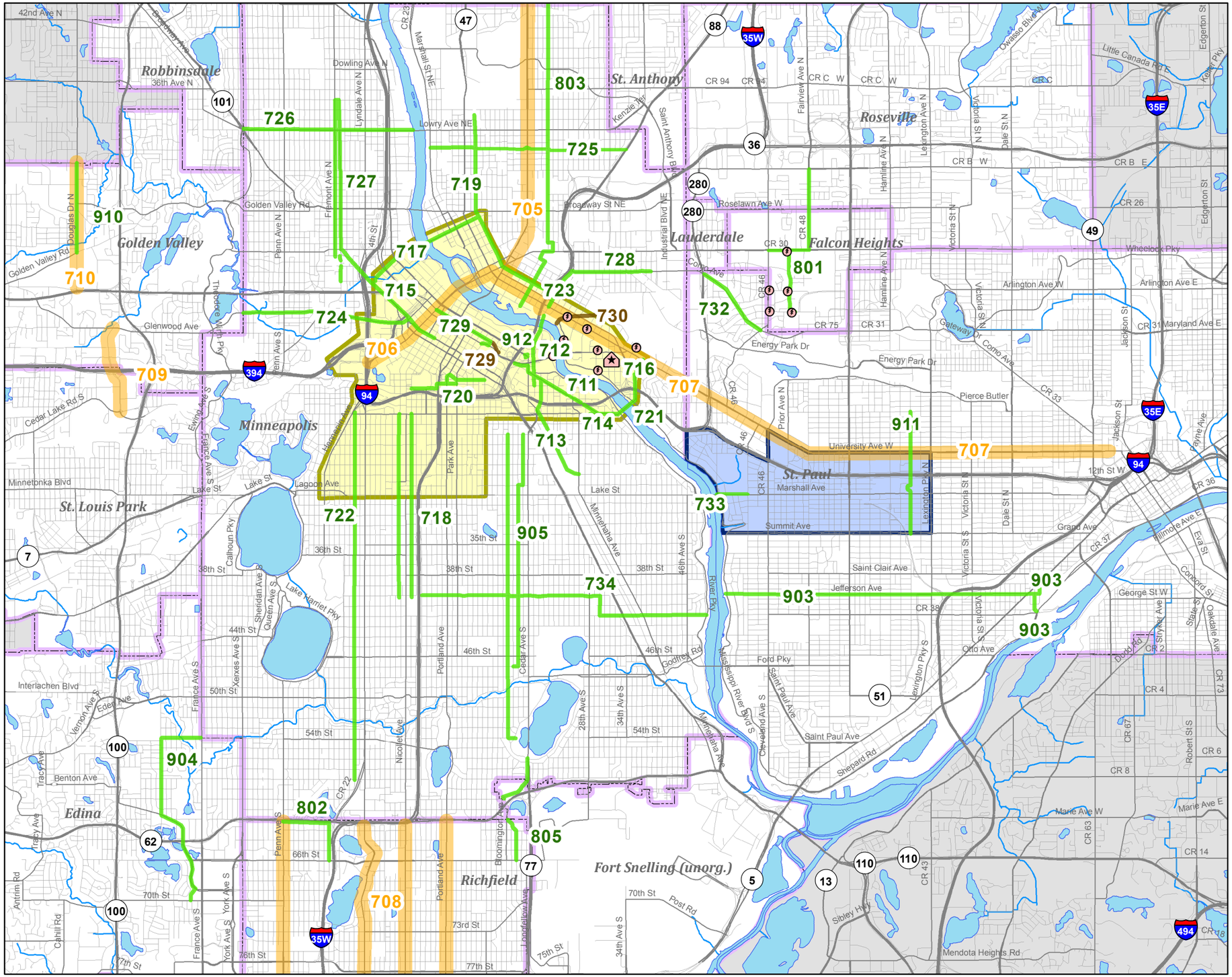
Above: A new fleet of bicycles

Table 4.4 – 1990 to 2007 Means of Transportation to Work

1990 to 2007 Means of Transportation to Work for Minneapolis Residents					
	1990	2000	2005	2006	2007
Total:	100.0%	100.0%	100.0%	100.0%	100.0%
Drove alone	60.3%	61.6%	62.4%	62.6%	61.1%
Carpooled	10.5%	11.3%	12.8%	9.3%	10.0%
Public transportation (excluding taxicab)	15.8%	14.4%	12.5%	13.2%	13.4%
Bicycle	*1.6%*	*1.9%*	*2.4%*	*2.5%*	*3.8%*
Walked	*7.8%*	*6.6%*	*5.8%*	*7.1%*	*6.4%*
Taxicab, motorcycle, or other means	0.9%	0.8%	1.1%	0.9%	0.5%
Worked at home	3.1%	3.4%	2.9%	4.5%	4.8%

Source: U.S. Census Bureau, 1990 and 2000 Decennial Census, 2005 - 2007 American Community Survey

Transit for Livable Communities - Bike Walk Twin Cities



Transit for Livable Communities Bike/Walk Twin Cities
This map contains information obtained from various sources believed to be reliable
S:\GIS\BWTC\NTP projects\Project map.mdx SEPT 2009

Figure 4.8 - NTP Projects

Funded Projects July 2009

705-Central Avenue NE Planning Study
706-Hennepin Avenue Planning Study
707-Central Corridor Bicycle and Pedestrian Plan
708-Richfield Arterials Study
709-Xenia Ave/Park Place Blvd Corridor Planning
710-Douglas Dr Corridor Planning Study
711-Riverside Avenue - Western Segment - Bicycle Operations
712-19th Avenue S - Bicycle Operations
713-Minnehaha/20th Avenue S - Bicycle Operations
714-Franklin Avenue E - Bicycle Operations
715-7th Street/10th Avenue N - Bicycle Operations
716-27th Ave SE - Bicycle Operations
717-Plymouth Avenue N/8th Avenue NE - Bicycle Operations
718-1st/Blaisdell Avenues - Bicycle Operations
719-5th Street NE - Bicycle Operations
720-14th/15th/16th Street S - Bicycle Operations
721-Riverside Avenue - Eastern Segment - Bicycle Operations
722-Bryant Avenue S - Bicycle Operations
723-10th Ave SE - Bicycle Operations
724-Glenwood Avenue - Bicycle Operations
725-22nd Avenue NE - Bicycle Operations
726-Lowry Avenue Corridor Project - Bicycle Operations
727-Emerson/Fremont Avenue N - Bicycle Operations
728-Como Avenue SE - Bicycle Operations
729-LRT Trail Downtown Connection
730-University of Minnesota Trail
732-Como Ave Bicycle and Pedestrian Improvements
733-Marshall Ave: Miss R Blvd (MRB) to Cretin Ave
734-Riverlake Greenway
801-NE Suburban Campus Connector
802-Oliver Avenue Bicycle Street
803-Filmore & 6th Avenues Bike Blvd
805-Richfield Parkway Stage 2 Pedestrian/Bikeway Trail
901-City of Minneapolis Bike Sharing Program
902-University Bike Center
903-Jefferson Avenue project
904-Wooddale/54th St/Valley View Road project
905-The Southern Connector
908-Smart Trips Union Park
909-U of M (RFID) commuter validation system
910-Douglas Drive Complete Street
911-Griggs Street Bicycle & Pedestrian Facilities
912-Cedar & Washington (7 Corners) Intersection

Projects not mapped:

701-Metro Transit Bike/Ped Improvements Study
702-Minneapolis Pedestrian Plan
703-Minneapolis Bike Parking Project
704-Bike and Pedestrian Ambassador Program
907-Cycloplan
913-Sibley Bike Depot Bike Library

Legend

Bike Walk Funded Projects
STREET PROJECT
TRAIL PROJECT
PLANNING STUDIES
902 - University Bike Center
909 - University RFID Readers
901 - City of Minneapolis Bike Sharing Program
908 - St. Paul Smart Trips - Union Park

Bike Walk Twin Cities

4.5.18 Downtown Minneapolis—Biking in Downtown Minneapolis still remains a challenge for many bicyclists. Although great strides have been made over the years to build a bicycle lane network and to add bicycle parking, there is still a lot of work that needs to be done to make downtown more bicycle friendly. Currently many of the bike lanes are located on the left side of the roadway to avoid conflicts with buses and to allow for rush hour parking removal on the right side. Many bicyclists have asked for left sided bike lanes to be re-evaluated and for the city to explore more innovative ways to accommodate bicycles.

Above: ATT Tower with Foshay Tower reflection

Below is a list of current bicycle routes. A map can be found on the following page.

Existing North/South Bicycle Routes:

- 1st Avenue North—Cycle track bike lanes off-peak; bike lanes during peak.
- Hennepin Avenue—Shared use lane with buses in both directions.
- Nicollet Mall—Shared use lane with buses in both directions.
- Marquette Avenue—Bicycles may use shared use lanes with buses during off-peak hours; bicycles can also share the road with vehicle traffic in a wide curb lane.
- 2nd Avenue South—Bicycles may use shared use lanes with buses during off-peak hours; bicycles can also share the road with vehicle traffic in a wide turn lane.
- 4th Avenue South—Right-sided bicycle lanes in 2010. Bicycle lane travels southbound.
- 5th Avenue South—Right-sided bicycle lanes in 2010. Bicycle lane travels northbound.
- Portland Avenue—Left sided bicycle lanes. Bicycle lane travels southbound.
- Park Avenue—Left sided bicycle lanes. Bicycle lane travels northbound.
- 11th Avenue South—Bicycle lanes in both directions.

Existing East/West Bicycle Routes:

- 2nd Street South—Bicycle lanes in both directions
- 3rd Street South—Right-sided westbound bicycle lanes in 2010.
- 4th Street South—Reverse flow eastbound bicycle lane; left side of traffic.
- 5th Street South—Left-sided bike lane in 2011. Bike lane travels westbound.
- 6th Street South—Left-sided bike lane in 2011. Bike lane travels eastbound.
- 9th Street South—Left-sided bicycle lane. Bike lane travels westbound.
- 10th Street South—Left-sided bicycle lane. Bike lane travels eastbound.
- 11th Street South—Right-sided bicycle lane. Bike lane travels westbound.
- 12th Street South—Left-sided bicycle lane. Bike lane travels eastbound.

Downtown Bicycling

Figure 4.9 - Downtown Minneapolis Bicycle Facilities

Bicyclists cannot ride on sidewalks in business districts.

Bridges into downtown Minneapolis (marked as pedestrian shortcuts):

- Bicyclists can use sidewalks over these bridges.
- Bicyclists should use caution and yield to pedestrians.
- Once across the bridge, carefully re-enter street or merge onto a trail when it is safe to proceed.

For more information or questions, call or visit "311" in Minneapolis, or call 612-673-3000 outside.

www.ci.minneapolis.mn.us/bicycles/

Key

- Bike Trails (Off-Street)
- Bike Lanes (On-Street)
- On-Street (Both Sides)
- Shared Lanes
- Marquette/2nd Bikes Prohibited in Bus Lanes 6-9am, 3-7pm Mon-Fri
- Pedestrian Shortcuts

Facilities

- Bike Lockers
- Bike Racks
- Bike Banks
- Bike Corral

March 15, 2011

4.6 Equity

4.6.1 Modal Connections—Distance and weather are two common barriers for bicyclists. By ensuring good modal connections, bicyclists can travel seamlessly from place to place using public transit for part of their trip. Buses and trains can be easily retrofitted to accommodate bicycles and many of the major transit stops have bicycle parking for those who do not wish to take their bike with on a round trip.

Above: Metro Transit bus with a bike rack

All Metro transit buses are equipped with bike racks and most SW Metro Transit, Minnesota Valley Transit Authority, and Maple Grove Transit buses also have bike racks. Currently Metro Transit allows drivers to use discretion to allow bicycles on the bus when the racks on the front of the bus are full.

Above: Bicycle locker at Hiawatha LRT Station

Metro transit bus drivers conducted a special regional bike count in the fall of 2008. Results indicated that customers loaded 870 bicycles on an average weekday, 586 bicycles on an average Saturday, and 378 on an average Sunday. Surveyors counted bicycles being loaded and unloaded on Hiawatha light-rail trains during a similar study period (weekends were not included). On average, about 2.5 bicycles were loaded on each trip. A similar count was performed in May 2007 and it was found that the number of bikes on buses doubled and the number of cyclists riding on Hiawatha LRT trains rose by 41% in 1 year.

Above: Bikes must be walked on all platforms. Photo courtesy of Metro Transit.

All trains including the Hiawatha Line and the Northstar Line allow bicycles at all hours (including rush hours) to be brought onto a train. Future rail lines including the Southwest Corridor and Bottineau Corridor will have the ability to accommodate bikes as well. As high speed rail projects progress, taking a bike by rail to Chicago or Duluth may also be possible

Above: Bike rack in a Northstar Commuter Rail Train. Photo courtesy of Metro Transit.

4.7 Evaluation

4.7.1 Bike Counts—Bike counts are a good way to find out how many people are bicycling and what routes bicyclists use most. Each September, Public Works (PW) coordinates an extensive 12-hour bicycle count, which is supplemented by numerous 2-hour PM peak counts performed by Transit for Livable Communities (TLC). These values are interpolated using Institute of Transportation Engineers (ITE) methods to estimate 24-hour daily counts. The results of these counts have been mapped by location and can be found on the following page.

Above: A count being conducted at the Washington Avenue Bridge

Below are key observations based on the Minneapolis PW and TLC counts:

- On average bicycling went up 15% between 2007 and 2008 based on 30 count locations (PW counts).
- 74% of bicyclists are using lights after dark (TLC Counts).
- 64% of cyclists are wearing helmets (TLC Counts).
- Males represented 72% of cyclists counted and women represented 28% of cyclists counted (TLC Counts).
- Only 2% of those counted were children (TLC counts).
- Only 18% of bicyclists ride on sidewalks when an on-street bike lane is provided (PW).
- 78% of bicyclists use off-street paths along roadways when provided (PW Counts).

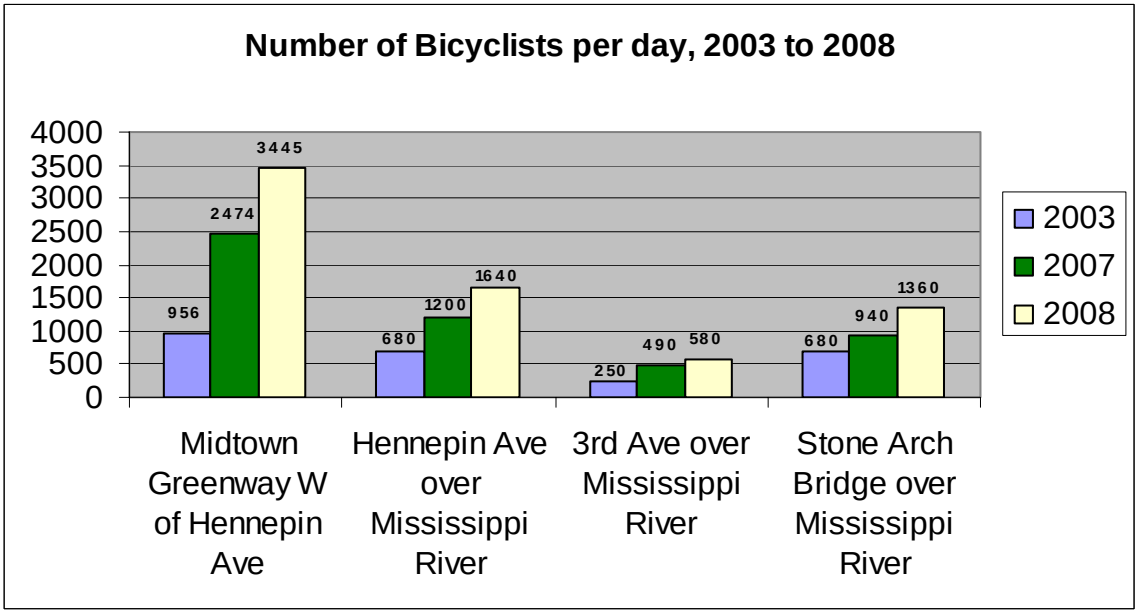
Table 4.5 – Top 5 Count Locations Within the City of Minneapolis

Top 5 count locations within the City of Minneapolis.		
	Count Location	**Sept 2008 Daily Count**
1	15th Avenue North of 5th Street Southeast	3,570
2	Washington Avenue West of Union Street	3,350
3	15th Avenue North of University Avenue	2,990
4	Midtown Greenway West of Hennepin Avenue	2,860
5	Midtown Greenway Sabo Bridge	2,800

Table 4.6 – Top 5 Count Locations With the Largest Increases in Bicycling Within the City of Minneapolis

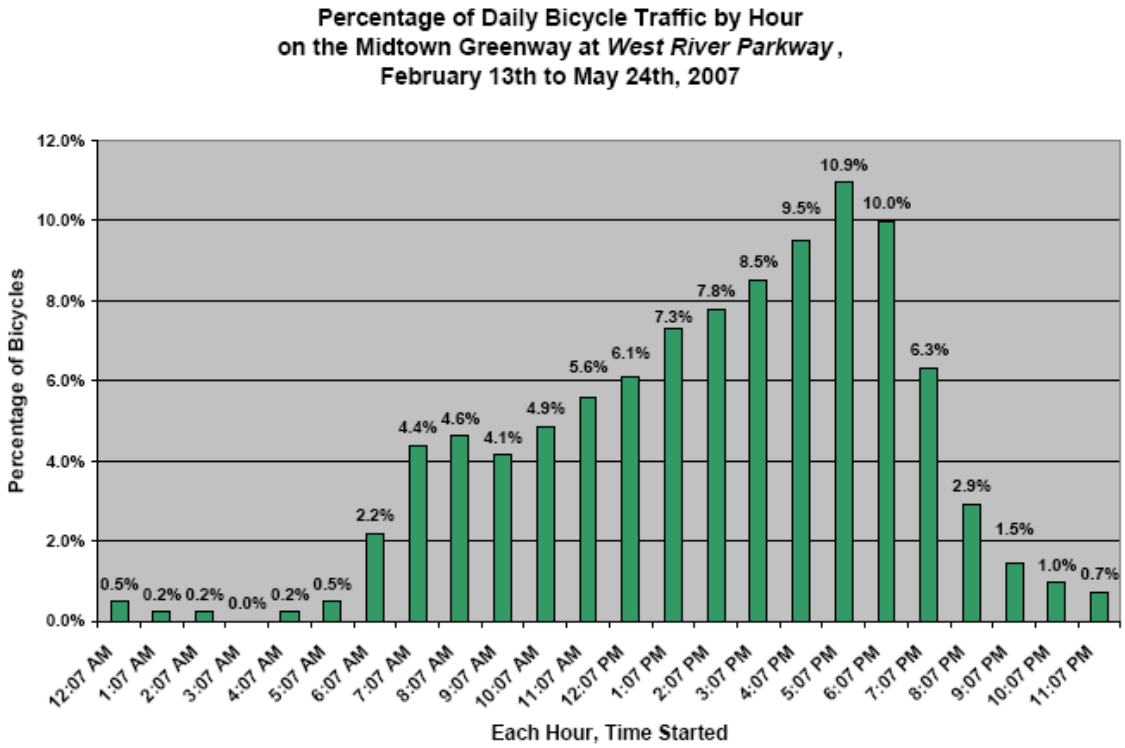
Top 5 count locations with the largest increases in bicycling within the City of Minneapolis.				
	Count Location	**Sept 2007 Daily Count**	**Sept 2008 Daily Count**	**% change**
1	Bridge 9 over the Mississippi River	130	440	238%
2	Hiawatha LRT Trail East of 11th Avenue	800	2110	164%
3	42nd Street East of Minnehaha Avenue	70	180	157%
4	Central Avenue North of Lowry Avenue	110	280	155%
5	Cedar Lake Trail East of Royalston Avenue	510	1170	129%

Table 4.7 – Number of Bicyclists per Day, 2003 to 2008



Above: 18th Ave NE Trail after a snowfall

Table 4.8



Above: Midtown Greenway near 29th Avenue.

Table 4.9 – Average Temperatures in Minneapolis/St. Paul

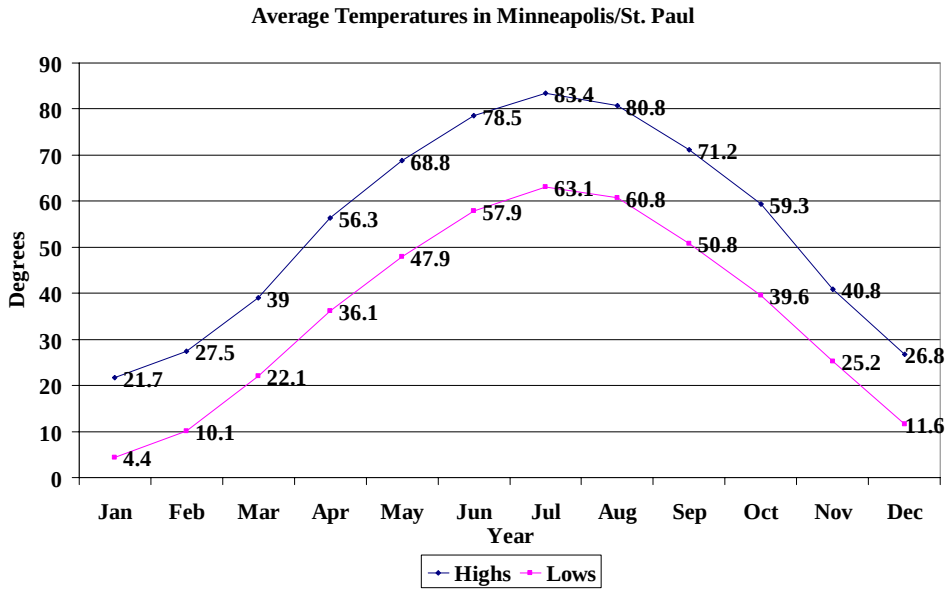


Table 4.10 – Midtown Greenway Average Daily Trips, by Month (2007-2009)

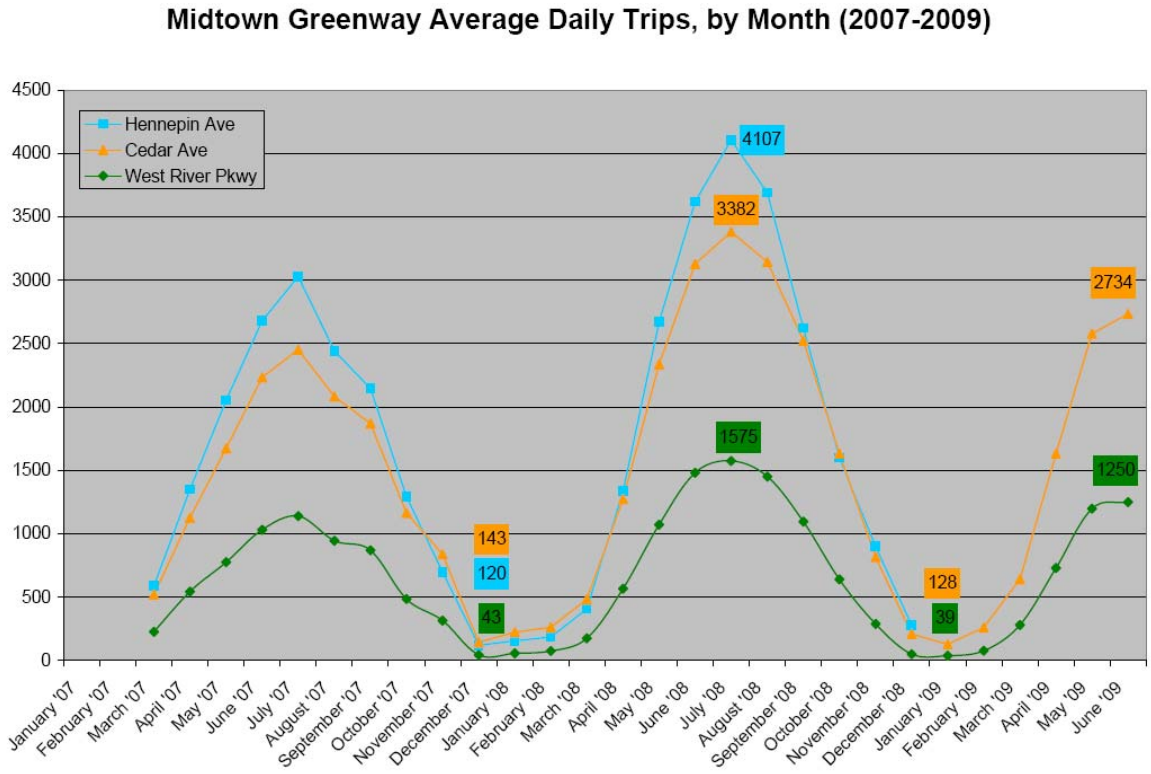
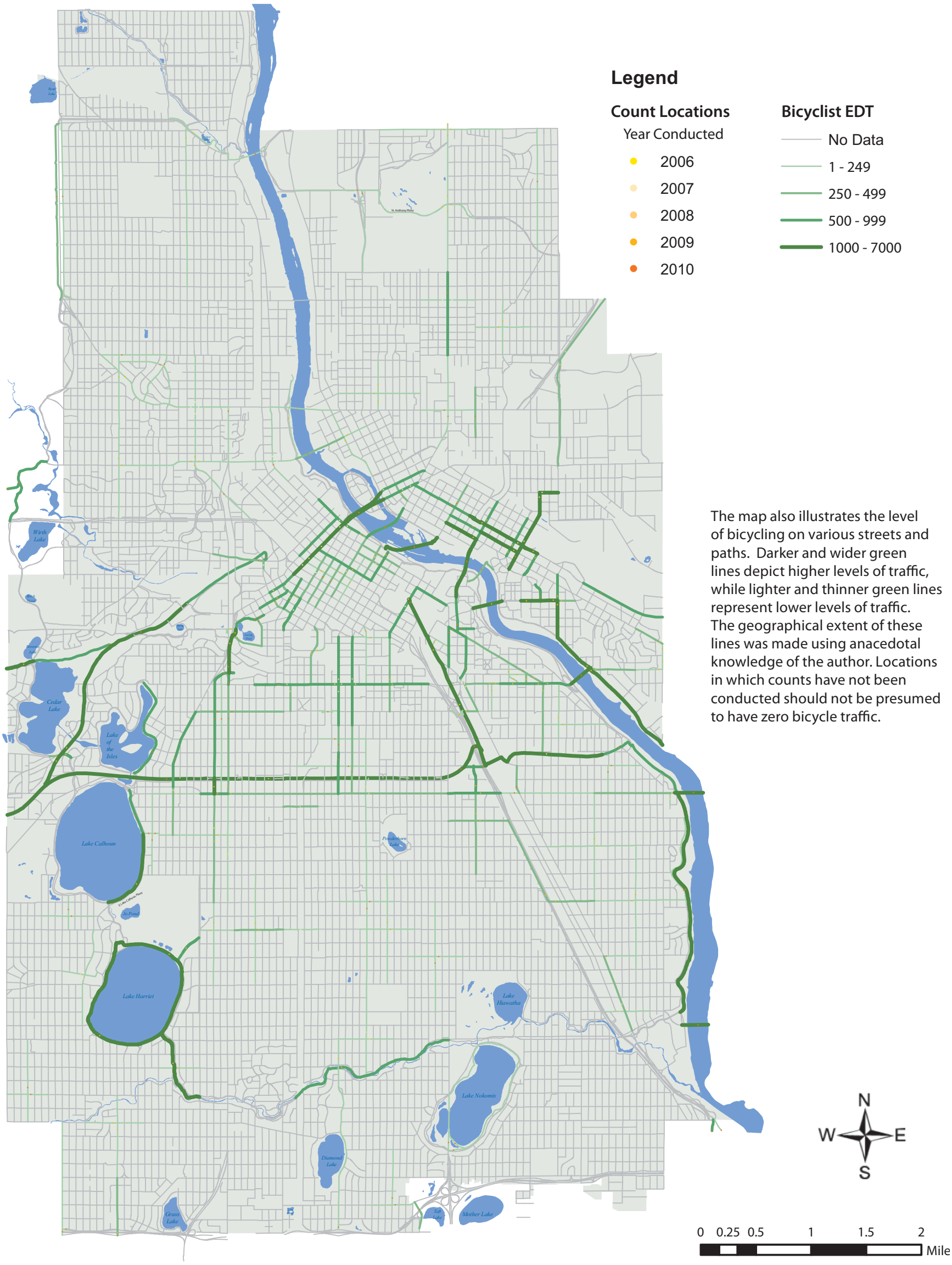


Figure 4.10 - City of Minneapolis 24-Hour Bicyclist Estimated Daily Traffic



The map also illustrates the level of bicycling on various streets and paths. Darker and wider green lines depict higher levels of traffic, while lighter and thinner green lines represent lower levels of traffic. The geographical extent of these lines was made using anacedotal knowledge of the author. Locations in which counts have not been conducted should not be presumed to have zero bicycle traffic.

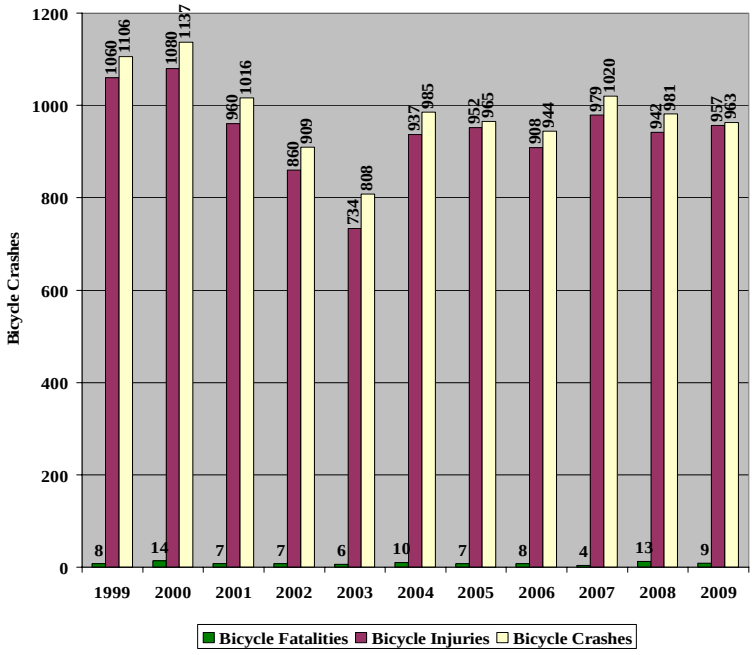
4.7.2 Crash Reduction—Both Public Works and the Minneapolis Police Department monitor crash trends. Targeted enforcement and engineering improvements are used as needed in addition to public education to reduce crashes. Bicycle crashes have stayed steady the past several years, however the crash rate is actually going down due to an increasing bicycle mode share.

Above: North 7th Street bike lane

4.7.3 Reducing Injuries—Currently over 90% of documented bicycle crashes result in an injury in Minneapolis. According to the Brain Injury Association of Minnesota:

- More children ages 5 to 14 go to the hospital emergency room with injuries related to biking than with any other sport.
- The average bicycle injury in Minnesota costs $49,000, including hospitalization, loss of productivity, and pain and suffering.
- 8% of Minnesotans regularly use a helmet.
- Each year, about 567,000 people go to hospital emergency rooms with bicycle-related injuries; about 350,000 of those injured are children under 15. Of those children, about 130,000 sustain brain injuries.
- In Minnesota, approximately 13% of traumatic brain injury related injuries are caused by bike crashes in children ages 5 to 14.
- Wearing a properly fitted bicycle helmet can decrease the probability of a brain injury by 88%. Several agencies have sponsored helmet giveaways and HCMC has started a "save your brain" campaign. Minnesota does not have any laws that require helmet use.

Table 4.11 – 1999-2009 Bicycle Injuries and Fatalities in Minnesota



Above: A ghost ride after a bicycle fatality

4.7.4 Toward Zero Deaths—Better response times and improvements in vehicle safety technology have improved overall fatality rates, however bicycle fatalities are still of concern. The charts below show Minneapolis bicycle crash statistics. According to the Minnesota Department of Public Safety:

- Most bicycle fatalities occur between June and September.
- Most deaths are people over 40.
- Males are 3 times more likely than females to be killed on a bicycle.
- More than 60% of bicycle fatalities occur in urban areas.
- Almost 40% of fatalities were at crossings.

Reducing fatalities is a shared responsibility between drivers and cyclists. The City of Minneapolis continues to work with partner agencies on educational, enforcement, and engineering initiatives that make the streets safer. Achieving zero bicycle deaths is very achievable if agencies work together and if everyone pays attention on the roadways.

Table 4.12 – 1996-2009 Bicycle Crashes in Minneapolis

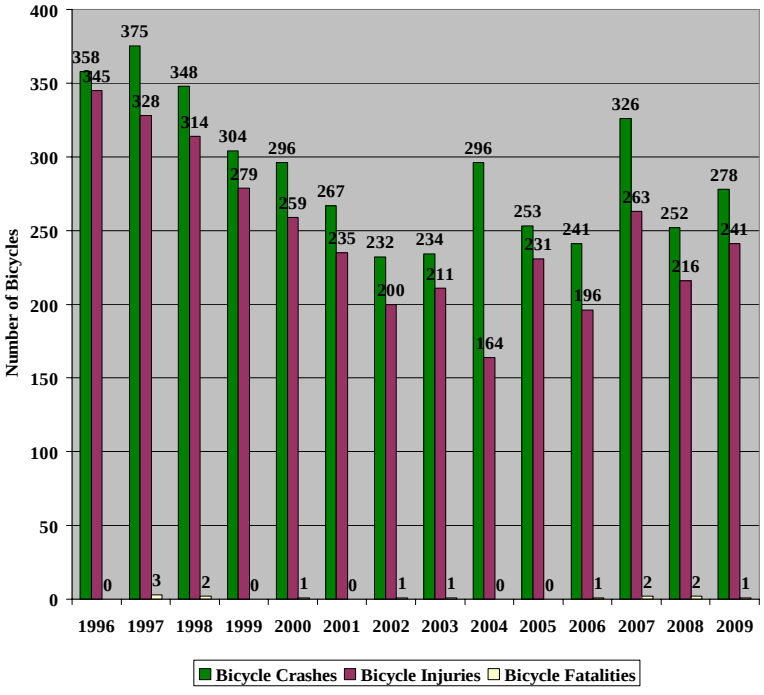
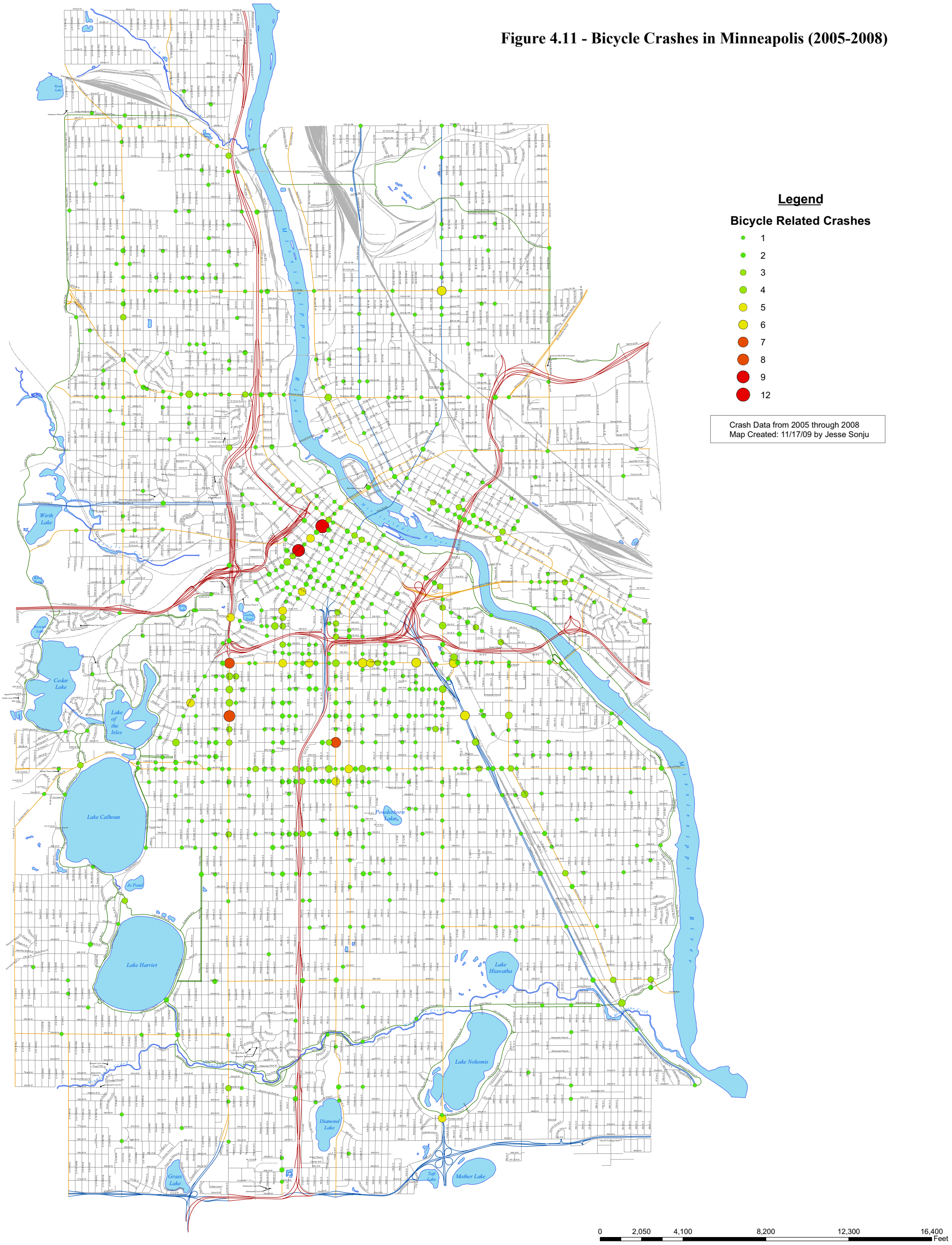


Figure 4.11 - Bicycle Crashes in Minneapolis (2005-2008)



4.7.5 Miles of Bikeways—Several bikeways have been added in the last decade. Over 15 miles of trails have been constructed in addition to 17 miles of on-street bike lanes since 2000. The Non-Motorized Transportation Pilot Program (NTP) is funding several additional miles of bikeways in 2010.

Above: Midtown Greenway

Table 4.13 - % Bicycle Mode Share (2000-2009) – U.S. Census Bureau

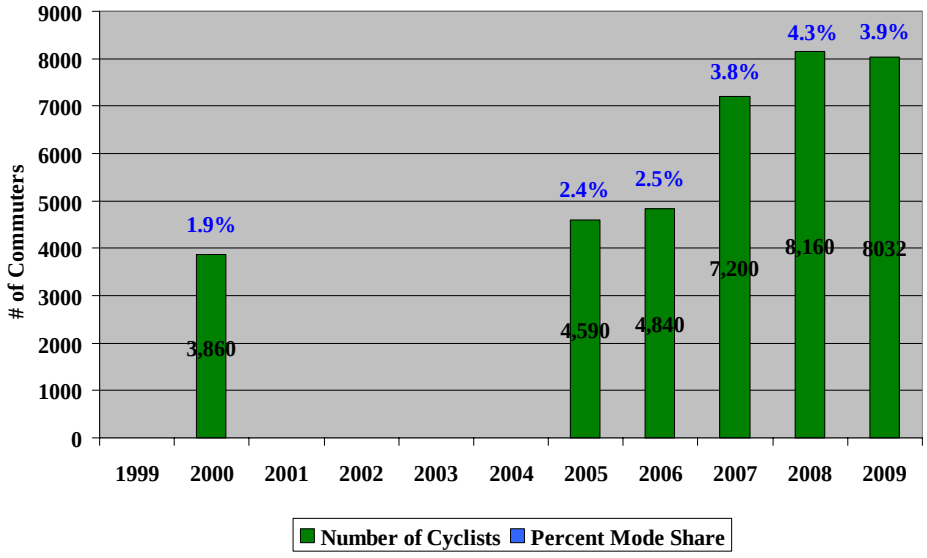
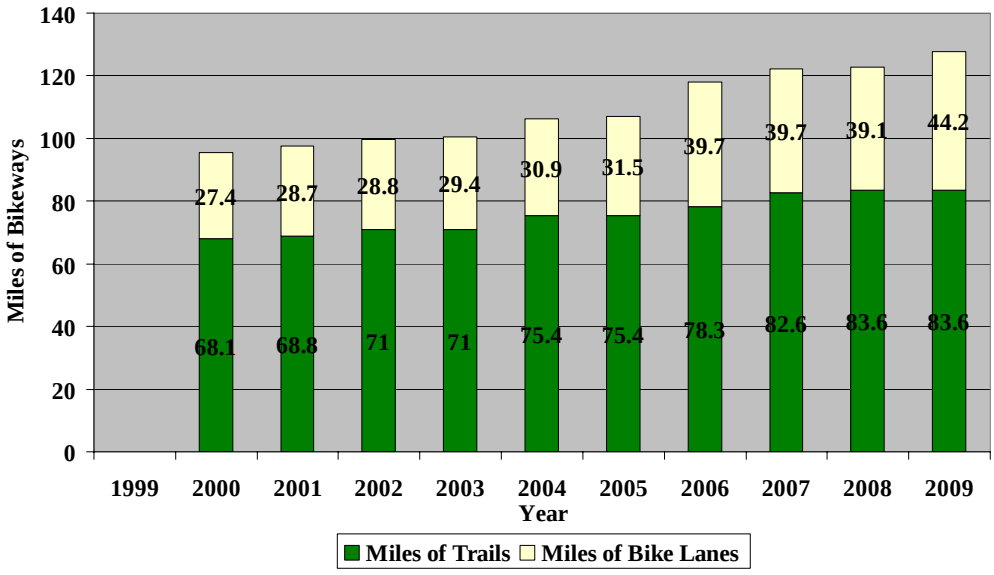
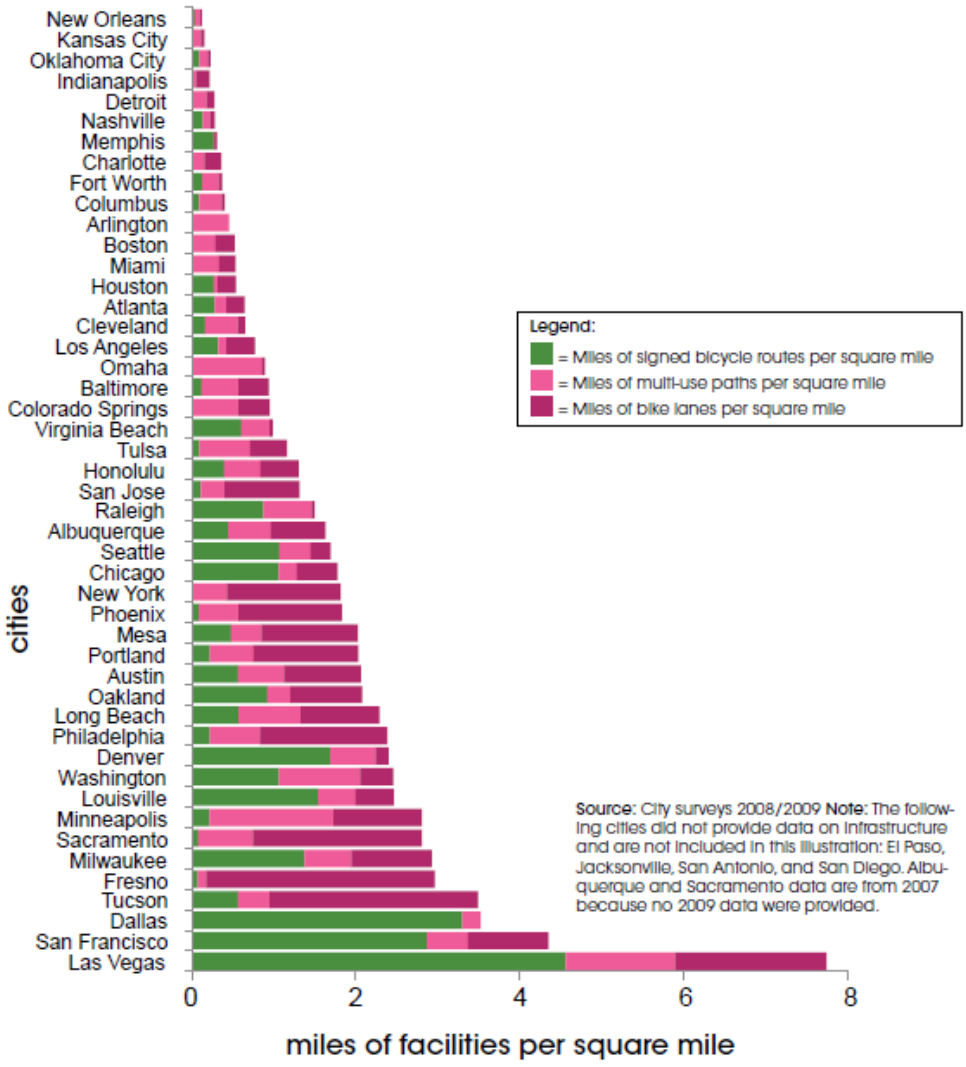


Table 4.14 – Miles of Bikeways (2000-2009)



4.7.5 Miles of Bikeways - Continued

Figure 4.12 – Existing Bicycle Facilities in Major U.S. Cities (2010)



Above: This graph from the Alliance for Bicycling and Walking 2010 Benchmarking Report shows the miles of facilities per square mile for 47 major cities in the United States. Minneapolis has one of the highest densities of bicycles facilities when compared to other cities.

Figure 4.13 - Number of Workers Commuting by Bicycle

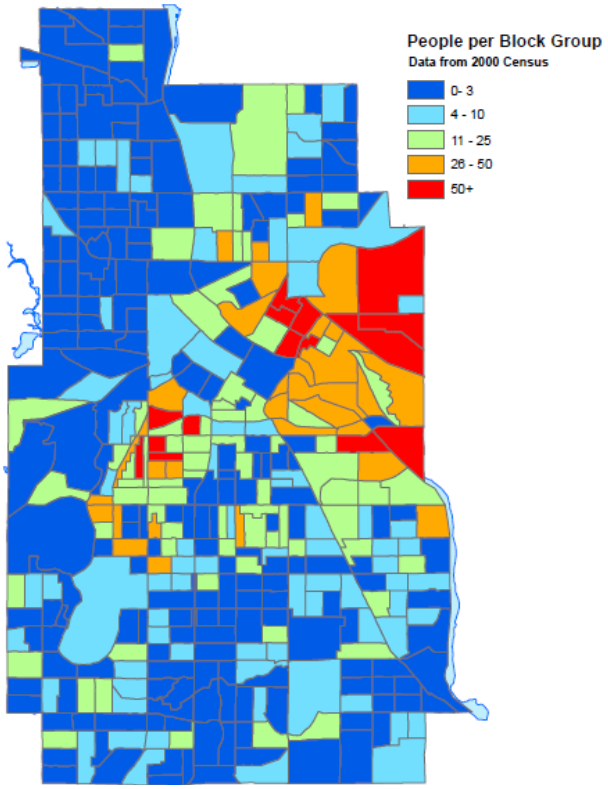
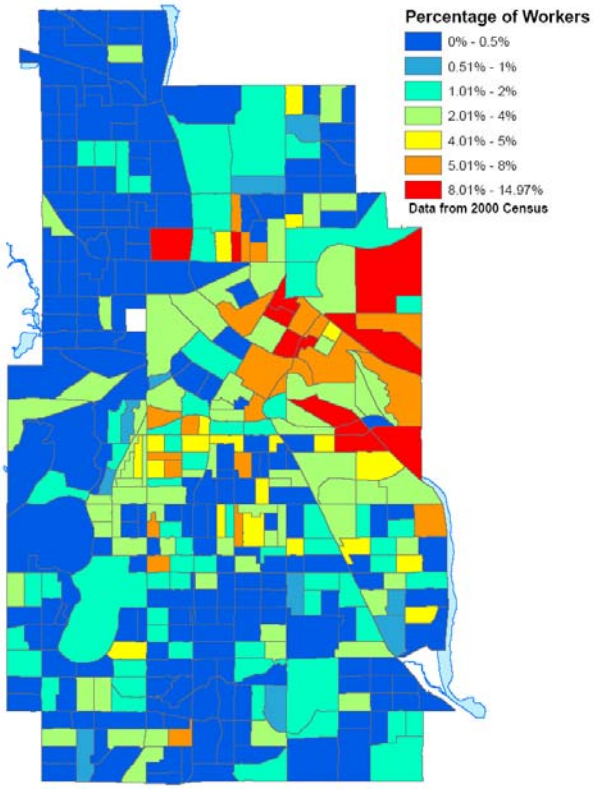


Figure 4.14 - Percent of Workers Commuting by Bicycle



4.7.6 Regional Parks—A 2008 Met Council survey found that 48% of regional trail and parks users in the Minneapolis Park System are visitors from other parts of the region. Only 16% of regional park visitors in Minneapolis arrived by bicycle (41% came by walking, skating, or running). The 2008 Met Council survey also analyzed demographic information including age, race/ethnicity, and gender.

Above: Lake Calhoun Trails

Table 4.15 – Local visits versus Non-Local Visits

Local visits versus Non-Local Visits																
Minneapolis	N	Anoka County	Bloom-ington	Carver County	Dakota County	MPRB	Ramsey County	Scott County	St. Paul	Three Rivers	Wash-ington County	Greater MN	Out of State	Outside US	Unknown	% of Visits Non-local
Agencywide	866	2%	2%	<1%	3%	52%	2%	<1%	5%	27%	<1%	1%	4%	<1%	<1%	48%
Cedar Lake Regional Trail	44	2%			2%	55%				36%				5%		45%
Central Mississippi Riverfront	45					76%			2%	9%			13%			24%
Minneapolis Chain of Lakes	174	2%	2%	1%	3%	48%	3%	1%	1%	32%	1%	1%	5%		1%	52%
Mississippi Gorge	34				3%	47%	3%		35%	9%					3%	50%
Minnehaha Regional Park	40		8%			50%	3%	3%	3%	23%		3%	10%			50%
Minnehaha Parkway Regional Trail	192		4%		3%	59%	1%		2%	23%	1%	1%	7%			41%
North Mississippi	30	3%				53%	3%		3%	37%						47%
Nokomis-Hiawatha	61		3%		8%	44%	2%	2%	25%	11%	2%	2%	2%			56%
Theodore Wirth	30	3%				63%	7%		3%	23%						37%
Victory Memorial Parkway Trail	123	4%			2%	38%	2%		3%	49%		2%	1%			62%
Columbia Parkway Regional Trail	30	20%				73%	3%					3%				27%
Ridgeway Parkway Regional Trail	30	3%			3%	47%	13%	3%		23%					7%	47%
Kenilworth Regional Trail	30		7%			37%			7%	47%	3%					63%
Luce Line Regional Trail**	3															

Table 4.16 – Mode of Travel to Regional Parks/Trails

How did you travel to this park/trail on your visit today? (Q1)								
Minneapolis	N	Walk, ran or inline skates	Bicycle	Drove or rode in auto, truck, RV or van	Metro Transit bus or LRT	Charter Bus	Some other way^	Refused
Agencywide	866	41%	16%	42%	<1%	<1%	<1%	<1%
Cedar Lake Regional Trail	44	64%	18%	18%				
Central Mississippi Riverfront	45	73%	9%	18%				
Minneapolis Chain of Lakes	174	41%	3%	55%	1%			
Mississippi Gorge	34	65%	24%	12%				
Minnehaha Regional Park	40	8%	18%	68%	3%	3%		3%
Minnehaha Parkway Regional Trail	192	42%	7%	51%				
North Mississippi	30	13%	17%	67%	3%			
Nokomis-Hiawatha	61	25%	8%	67%				
Theodore Wirth	30	3%	3%	90%			3%	
Victory Memorial Parkway Trail	123	48%	40%	12%				
Columbia Parkway Regional Trail	30	50%	7%	43%				
Ridgeway Parkway Regional Trail	30	57%	33%	10%				
Kenilworth Regional Trail	30	20%	73%	7%				
Luce Line Regional Trail**	3							

Table 4.17 - Age of Regional Trail User

Age (Q8)							
Minneapolis	N	12 to 17	18 to 24	25 to 44	45 to 64	65+	Refused
Agencywide	866	1%	6%	32%	48%	13%	<1%
Cedar Lake Regional Trail	44		2%	32%	50%	16%	
Central Mississippi Riverfront	45		9%	36%	49%	7%	
Minneapolis Chain of Lakes	174		4%	31%	49%	15%	1%
Mississippi Gorge	34		6%	35%	56%	3%	
Minnehaha Regional Park	40	5%	20%	30%	35%	10%	
Minnehaha Parkway Regional Trail	192		1%	29%	55%	15%	1%
North Mississippi	30		3%	47%	37%	13%	
Nokomis-Hiawatha	61	5%	15%	38%	28%	15%	
Theodore Wirth	30	3%	17%	30%	40%	10%	
Victory Memorial Parkway Trail	123	2%	4%	37%	49%	9%	
Columbia Parkway Regional Trail	30		10%	37%	37%	13%	3%
Ridgeway Parkway Regional Trail	30		10%	23%	57%	10%	
Kenilworth Regional Trail	30		3%	13%	67%	17%	
Luce Line Regional Trail**	3						

Table 4.18 – Race/Ethnicity of Regional Trail User

Race / Ethnicity (Q10)									
Minneapolis	N	White or Caucasian	Black or African American	American Indian	Asian	Hispanic	Two or more races	Some other race	Refused
Agencywide	866	89%	4%	<1%	2%	2%	1%		1%
Cedar Lake Regional Trail	44	91%	5%			5%			
Central Mississippi Riverfront	45	82%	7%		2%	7%	2%		
Minneapolis Chain of Lakes	174	89%	3%		4%	1%			2%
Mississippi Gorge	34	94%	3%				3%		
Minnehaha Regional Park	40	83%	5%			10%	3%		
Minnehaha Parkway Regional Trail	192	95%			3%		2%		1%
North Mississippi	30	67%	17%	3%	3%	10%			
Nokomis-Hiawatha	61	75%	16%		3%	2%			3%
Theodore Wirth	30	70%	10%		13%	3%			3%
Victory Memorial Parkway Trail	123	93%	2%			1%	1%		2%
Columbia Parkway Regional Trail	30	93%	3%				3%		
Ridgeway Parkway Regional Trail	30	97%							3%
Kenilworth Regional Trail	30	97%			3%				
Luce Line Regional Trail**	3								

Above: Lake Calhoun

Chapter 5 – Needs Analysis

Above: Stone Arch Bridge

5.1 Chapter Overview

5.1.1 Purpose—The purpose of this section is to identify specific bicycling needs and suggest action items needed to improve bicycling in Minneapolis. Below is an overview of some of the existing problems and recommendations that have been suggested to make the city more bicycle friendly. The comments in this chapter are based on existing conditions and support the goals, objectives, and benchmarks established in Chapter 4.

5.1.2 Highlights – Below are some suggestions for improving the bicycle program based on the needs outlined in this chapter.

- It is recommended that more attention be given to non-infrastructure projects and initiatives.
- Safe Routes to School curriculum needs to be expanded to include all private and charter schools.
- Minneapolis has one of the most developed trail systems in the United States, but the system still lacks sufficient off-street facilities in North Minneapolis, Northeast Minneapolis, and south of Minnehaha Creek. The bicycle plan needs to identify projects in these parts of the city in order to ensure geographic equity.
- Adding a variety of on-street and off-street routes in a reasonably spaced grid will help attract bicyclists of all ages and abilities.
- More innovative solutions may be needed to attract new bicyclists.
- Projects that close gaps, remove barriers, or complete networks should be given priority.
- Substandard bicycle facilities should be corrected or removed as soon as possible to address system gaps and discontinuities.
- Improve maintenance of the existing system.
- Projects should be environmentally responsible with consideration of impervious surfaces, erosion control, and maintaining wildlife habitat.
- Decisions should include all effected stakeholders and there should be no pre-determined outcomes.
- Try to take advantage of free media opportunities to promote bicycling.
- There is a need for better data to evaluate the success and progress of the bicycle program.
- Bicycle theft continues to be a problem in Minneapolis. Theft rates will likely be reduced by installing secure bicycle parking and through targeted enforcement.

5.1.2 Highlights - Continued

- An "opportunity fund" should be created to acquire and maintain property for trails from willing landowners when it becomes available. Eminent domain should be avoided.
- Consistent enforcement of laws is needed throughout the city precincts and between motorists and bicycles.
- Continue to build on past success. The 50/50 cost share is a good example of a successful initiative, which has helped allow the city to be a national leader in the number of bicycle parking spaces per capita.

Above: Bridge Square

5.1.3 Opportunities/Challenges - Below are a list of opportunities and challenges facing the bicycle program today. The comments below are generalizations made by city staff based on surveys, phone calls, and e-mails received by the public.

Opportunities:

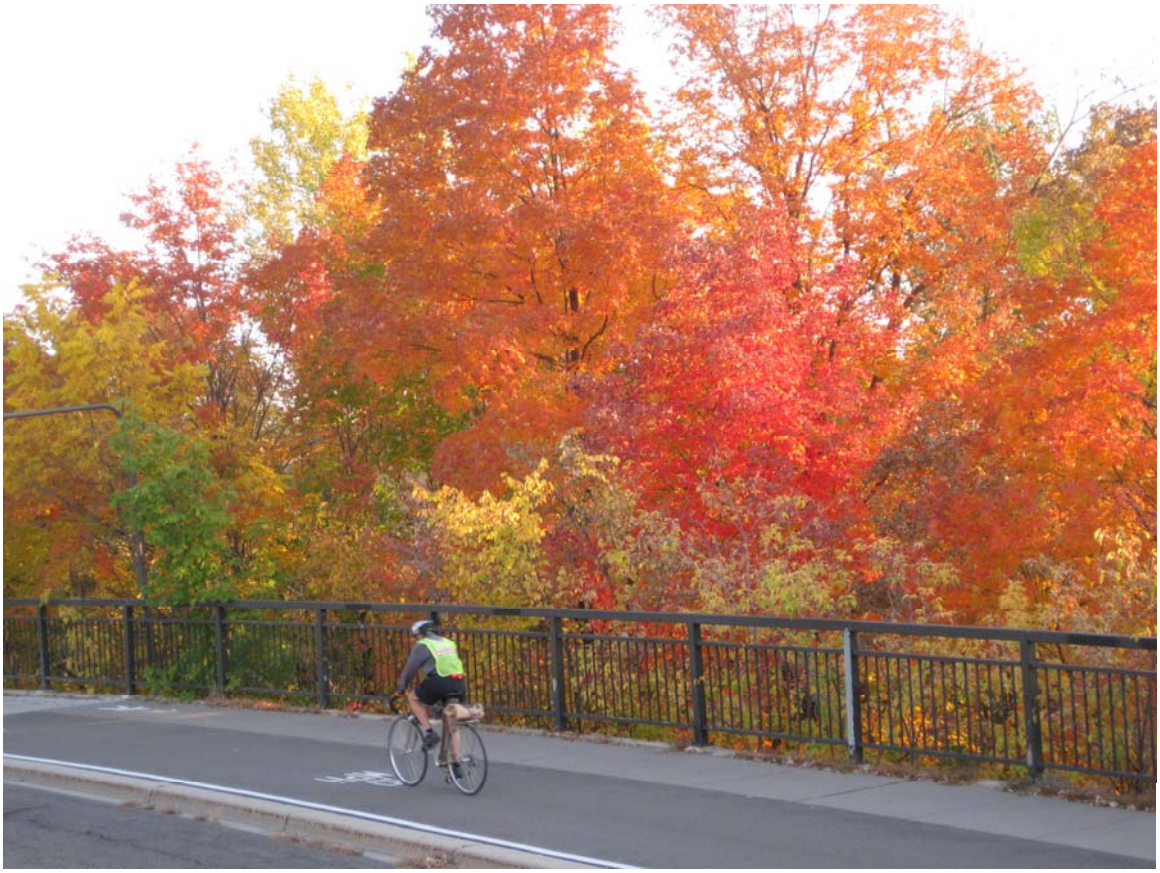
- There is considerable support by elected officials to complete bicycle related projects. There is also willingness by the elected officials to try new and innovative things.
- Transit accommodations throughout the region are improving.
- Health and wellness partnerships bring additional promotion and funding.
- Environmental awareness has never been higher and there is a public appetite for bicycle facilities.
- The number of people who travel by bicycle is on the rise.
- Despite the fact that bicycling is on the rise, bicycle crash rates have remained steady in Minneapolis for the last decade.
- Funding opportunities for bicycle facility construction have increased and the city and MPRB have secured numerous grants for the bicycle program.
- Citizens, business owners, and neighborhoods play an active role in project development.
- Minneapolis has become a regional and national leader in bicycling and has the ability to influence other communities.
- There is a willingness by staff and elected officials to make constant improvements to the bike program.
- Despite the fact that resources are becoming scarce, there are still several federal and state funding sources available for bicycle related projects.

5.1.3 Opportunities/Challenges

Challenges:

- There is no clear vision or direction for the city to take with regard to bicycling due to the lack of a bicycle plan (not just a map).
- The demand for resources far outweighs available resources. There is also significantly more competition for regional funding.
- There are only a few easy projects left. The "low hanging fruit" is gone.
- Bicycles are still seen by many as a secondary transportation mode when compared to other modes.
- Right-of-way constraints rival complete streets policies against State and County standards. On many projects there is significant competition for space in the public right-of-way. It is often difficult to balance the needs of all stakeholders including bicyclists.
- There are often disagreements on how limited f

5.1.4 The 6 "E's" – This section will examine the needs for each strategy; education, encouragement, enforcement, engineering, equity, and evaluation.



Above: A bicyclist on West River Parkway

5.2 Education

5.2.1 Education Needs—Whether it's understanding the rules of the road or discovering the best places to ride, education is a fundamental component of the Minneapolis Bicycle Plan. The comments below will strive to support the two primary educational objectives, which are to improve safety and increase the number of bicyclists.

There are several audiences that should be considered for targeted education. The following programmatic needs should be addressed to further education efforts:

Bicycle education for children: It is beneficial for children to be exposed to bicycle safety education at an early age. Minneapolis Safe Routes to School needs to be expanded to include a uniform curriculum for all students, including students attending private and charter schools.

Education for adult drivers: The general public needs more exposure to bicycling laws. Working with the Department of Public Safety to add more bicycling questions to driver education exams would be a good start, however this does not target those who have had a driver's license for years. A public bicycle safety campaign on at least a yearly basis is required to keep motorists and bicyclists from forgetting the rules of the road.

Education for professional drivers: Identify outside funding to educate professional drivers including bus drivers, taxi drivers, truck drivers, and emergency services personnel about their role in keeping the street safe for bicyclists.

Education for adult bicyclists: All bicyclists should be encouraged to take bicycle safety courses. Special events for bicyclists are also good opportunities to distribute educational materials.

Education for adults with special needs: Support programs that help adults with special needs get around by bicycle.

Above: Students from a Minneapolis school take a field trip by bike.

Education for Senior Citizens: Support programs that help senior citizens make short trips by bicycle.

5.3 Encouragement

5.3.1 Encouragement Needs—Many bicyclists don't need much of an incentive to bike, however others require more encouragement. Getting information to the general public that sends a positive message is critical to attracting new bicyclists.

Above: Mayor Rybak with the Bicycle and Pedestrian Ambassadors.

On the front line of this effort are the Minneapolis Bicycle Ambassadors. This group of Minneapolis staff members is funded by a 3-year federal grant program that ends in 2011. The Minneapolis Bicycle Ambassadors have helped hundreds of businesses, non-profit groups, schools, neighborhoods, and families learn about the benefits of biking and helping to remove barriers for those who are not comfortable riding a bicycle.

Above: Bike Walk to Work Day activities.

The following programmatic needs should be addressed to further encouragement efforts:
Encouragement for Minorities: An increase in targeted marketing toward communities of color and immigrant groups including those who speak English as a second language.
Encouragement for Seniors: Expanding involvement with seniors.
Encouragement for Youth: Intensifying the youth ambassador program particularly within the public schools, at recreation centers, and at charter schools. Create regional community training centers where people can go to learn basic bicycling skills. This should include an obstacle course for children and a classroom for adult curriculum. This concept could also include a bicycle shop for learning bicycle maintenance. This could be sited at existing schools or community centers at minimal cost.
Encouragement for Business: Corporations and small businesses continue to need assistance with providing information for its employees. Encouraging bicycling as a transportation option helps to improve congestion and alleviate parking demand in addition to health and environmental benefits. More resources are needed to help groups like the Minneapolis TMO keep up with the demand for commuter fairs, printed materials, and customer service requests.

Above: A community event to promote bicycling

Above: The Bike and Pedestrian Ambassadors help children with their bikes

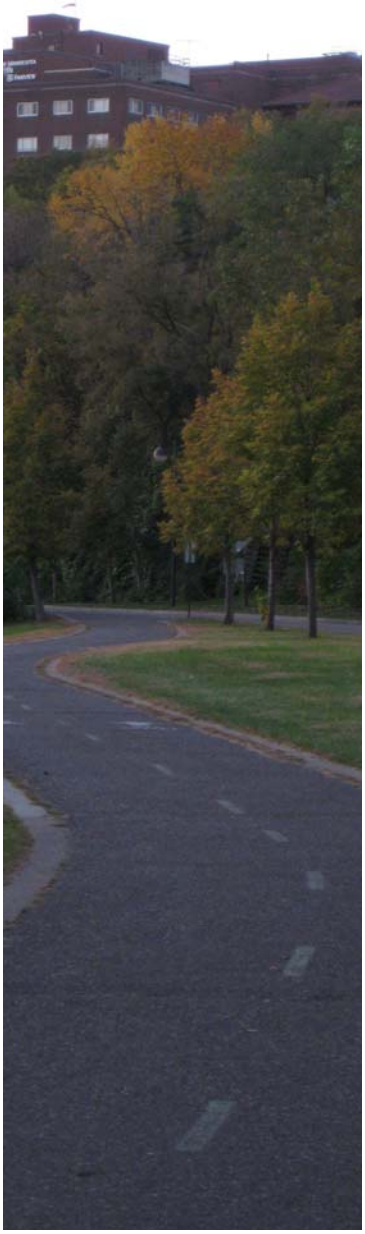
5.3.1 Encouragement Needs - Continued

Encouragement for Tourists: Minnesota is a tourist magnet for those who enjoy the outdoors. The bicycle tourism market needs to be further exploited by marketing Minneapolis as a premier bicycle riding destination. The local economy could benefit significantly if Minneapolis bicycling was better marketed nationally and internationally.

Encouragement for Women: Recent census statistics show that men outnumber the number of women who bike 2 to 1. Existing bicycle clubs, bicycle advocacy groups, non-profit groups, and government agencies need to take note. There are clearly barriers that keep many women from biking that don't pertain to men. Realizing and mitigating those barriers are key to a higher bicycle mode share in Minneapolis. A survey geared toward women would be a good first step in determining those barriers.

Encouragement for the Inactive: According to the Center for Disease Control, heart disease is the number #1 cause of death for Americans. Obesity has reached epidemic proportions with over 24% of Minnesotans now considered obese. Approximately two thirds of U.S. adults and one fifth of U.S. children are now obese or overweight. Active living initiatives that encourage activities such as bicycling are critical in reversing this trend and must be expanded.

The role of implementing encouragement initiatives requires further discussion. Non-profit groups and volunteer organizations may be better situated to take on implementation roles, and in some cases encouragement is best accomplished through incentives sponsored by businesses.



Above: West River Parkway

Above: A bicycle near Lowry Ave

Above: Bicyclists near Minnehaha Avenue

5.4 Enforcement

5.4.1 Enforcement Needs—Keeping our streets safe through enforcement is often overlooked when developing a bicycle plan, but it is an important element that can not be omitted. Police officers not only keep the peace but also help deter poor behavior. Enforcing laws pertaining to bicycling is a high priority for Minneapolis, which requires commitment and resources. The following comments reflect the need to improve enforcement in Minneapolis:

Above: A delivery truck in a bike lane

Need for Targeted Enforcement: Additional resources are needed to oversee targeted enforcement. Targeted enforcement may include speed management along a specific bike route, ensuring that the 3-foot passing law is respected, and making sure that motorists are not parking in a bike lane. Targeted enforcement may also include issuing citations to bicyclists for not stopping for signals or stop signs, riding at night without a light, and traveling the wrong way on one-way streets.

Need for Collaboration/Need for Improved Design: Public Works needs to better inform the Police Department about infrastructure improvements. Police officers should also have input into the design of a trail. Better collaboration between the two departments may also be useful in reducing crashes through targeted enforcement, public education, and better engineering. Project engineers need to think about how to prevent crime as part of a project. Will a new trail project create hiding spaces? Will a new trail be adequately lit? How can an emergency vehicle access a non-motorized facility? What components of a project could be used as a weapon? Crime (and perceived crime) continues to be a barrier for bicyclists.

Need to Reduce Theft: More emphasis needs to be placed on preventing bicycle theft through targeted enforcement and through by adding more secure bicycle parking. Education is needed, especially with youth to use u-locks instead of chains.

Need for Better Information: A clear map of where you can and can't ride a bike on a sidewalk needs to be developed. Detailed crash reports for bicycle crashes are needed. Some bicycle crash reports are well documented and easy to comprehend; others are not. Crash diagrams are an essential tool in determining whether engineering countermeasures are required.

Need for Improved Policies: Ordinances pertaining to bicycling need to be re-evaluated on a regular basis. This pertains to zoning ordinances in addition to ordinances pertaining to moving vehicles. A citywide trail use ordinance is needed to define rules and regulations including hours of use (24/7 in most cases), types of users permitted, and a pet policy.

5.4.1 Enforcement Needs - Continued

Need for constancy: With regard to bicycle laws, consistent enforcement approaches by the Minneapolis Police Department, U of M Police, MPRB Police, and Metro Transit Police are needed. A bicycle training program should be offered to all officers in all four departments. It is important that officers keep up to date on statute changes and know all of the rules of the road. A sworn Police officer should be invited to attend Bicycle Advisory Committee meetings. Finally, Police officers need to lead by example. In many corridors it is common to see squad cars parked in bike lanes. Some bicyclists have also complained about misinformed officers reprimanding bicyclists for breaking laws that were not really being broken.

Above: West River Parkway Trail at the I-35W Bridge

5.5 Engineering

5.5.1 Engineering Needs—Engineering relates to the design, operation, and maintenance of infrastructure and includes all bicycle facilities including trails, bike lanes, bicycle parking, and support facilities. Infrastructure needs can be sorted into three categories; corridor improvements, system-wide improvements, and spot improvements. Improvement types are described below:

Corridor Improvement Needs: These needs are based on a number of factors including existing bikeway gaps and discontinuities, bikeway spacing, adjacent land use, available right-of-way, potential use, topography, and minimizing conflicts with other modes. The Bikeways Master Plan Map is the result of considerable public input and includes guidance for specific corridor improvement needs. The map includes suggestions for both off-street and on-street facilities throughout the city and should be referenced to determine corridor improvement needs.

System-wide Needs: These improvements resolve citywide problems that are not specific to one location or corridor and can be approached more holistically. There is a need to retrofit many of the actuated signals in the city so that they can detect bicycles. There are a number of outdated signs and pavement markings within the system that still need to be upgraded. There is also a need to improve the quality of pavement along many bike routes within the city.

Spot Improvement Needs: Spot improvements are specific to a given intersection or roadway segment. Most of the spot improvements are needed to address safety concerns at a given intersection or segment of roadway. There are also a number of small gaps and discontinuities within the bikeway system.

Above: Warning signage near Camden Bridge

Above: Signage near Camden Bridge

5.6 Equity

5.6.1 Equity Needs—The Minneapolis Bicycle Program must be fair and present opportunities for all. There are three areas of emphasis with regard to equity; geographic, demographic, and modal equity.

Above: Nicollet Mall bicyclist

Need for Geographic Equity: Geographic equity ensures that all parts of the city will see the same types of facilities at the same density and quality.

Need for Demographic Equity: Demographic equity ensures that people of all age, race, ethnicity, and gender are treated equally.

Need for Modal Equity: Modal equity is achieved when bicycling is treated as an equal mode of transportation alongside autos, trucks, motorcycles, buses, and pedestrians.

Above: Bicyclist near St. Thomas campus.

5.7 Evaluation

Above: Midtown Greenway Counter

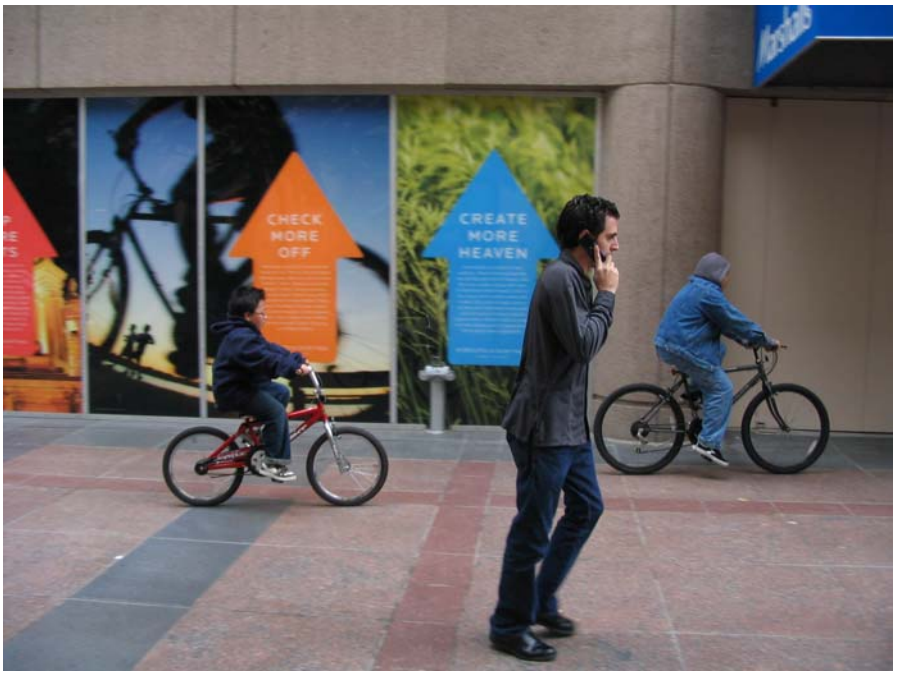
5.7.1 Evaluation Needs—Evaluation is all about measuring success. By creating and tracking evaluation measures, limited resources can best be directed to projects and initiatives that work. There are four target areas that pertain to evaluation; safety, bicycle counts, public involvement, and research.

Safety Needs: Evaluating safety on a regular basis needs to be a high priority. Over 200 bicyclists each year are involved in a bicycle crash, with 90% of reported crashes involving an injury. Crash statistic reports need to be done yearly, with statistics checked on a monthly basis. If negative trends are recognized, appropriate countermeasures may be pursued to help curb the number or type of crashes occurring.

Need for Better Count Data: Conducting bicycle counts is a necessary and valuable way to evaluate bicycle use. Bicycle count information can be helpful in determining project needs and can also be used to prioritize resources. 12-hour bike counts are needed during all 4 seasons. 50 locations need to be counted on a regular basis to maintain a good sample of system-wide bicycle use.

Need to better engage the public: Involving the public by reporting results helps to achieve bicycling goals.

Need to Participate in Research Initiatives: Research can result in new and exciting improvements for bicyclists.



Above: Bicyclists riding on a downtown sidewalk

Chapter 6 – Goals, Objectives, and Benchmarks

6.1 Chapter Overview

6.1.1 Purpose - This chapter presents new goals, strategies, objectives, and benchmarks that represent the 6 E's.

6.1.2 Definitions —The Minneapolis Bicycle Master Plan creates goals, objectives, and benchmarks for the bicycle program that are defined below:

Goals - Goals are the desired end result, general in nature, the product of a specific objective or objectives. A goal is finished when the desired end result has been achieved.

Strategy – The method in which a goal is achieved. In this plan, strategies are the 6 E's, Education, Encouragement, Enforcement, Engineering, Equity, and Evaluation. Each of these E's are defined in Chapter 1 of this plan.

Objectives - How the desired end result is achieved. The specific path to reach the goal is defined as an objective. There are usually many ways to achieve a goal. Objectives involve specific projects and initiatives, whereas goals are the desired product of those specific projects/initiatives.

Selected Initiatives – An initiative is defined as a specific non-infrastructure idea or program that supports a given objective. While most initiatives are identified in Chapter 7, the initiatives in this chapter have been selected for benchmarking.

Benchmarks - Checkpoints to measure progress in the process of achieving a desired end result. Benchmarks are significant events such as the end of a given project or initiative and often measure the success of objectives. It is recommended that benchmark goals be set in 5-year increments to coincide with the Bicycle Master Plan planning update process. Achieving benchmarks will be dependent on available resources.

Above: Bicyclist in the Longfellow Neighborhood.

Above: Bicyclists in Stadium Village.

Above: A mother and her daughter next to their bicycles.

Above: There are a number of bicycle murals within the City of Minneapolis.

6.1.2 Definitions (Continued)

Performance Measures – Means of measuring success. Typical measuring tools could include bicycle counts, bike rack inventory, crash reports, surveys, number of maps/brochures distributed, or miles of facilities completed.

Responsibility – Identification of agency or group responsible for carrying out objectives, benchmarks, and performance measures. In many cases, partner agencies will need to assist the lead agency by providing additional resources. Although, the goals and objectives identified in this plan are very ambitious, they are consistent with other benchmarking reports including the annual City of Minneapolis Green Print Report and the Results Minneapolis efforts. It is very important to note that achieving the mentioned goals, objectives, and benchmarking will be contingent on available resources. **The ability to measure progress toward goals in this chapter is contingent on available resources.**

Above: Martin Olav Sabo Bridge along the Midtown Greenway.

6.1.3 Acronyms

DPW – Minneapolis Department of Public Works
TMO – Downtown Minneapolis Transportation Management Organization
BAC – City of Minneapolis Bicycle Advisory Committee
T&PW – City of Minneapolis Transportation & Public Works Committee
DHFS – Minneapolis Department of Health and Family Support
MPD – Minneapolis Police Department
MPS – Minneapolis Public Schools
CPED – Community Planning and Economic Development

Above: A number of bikers riding along 5th Street SE in the Marcy Holmes Neighborhood.

Above: The RiverLake Greenway has a number of traffic calming devices including this diverter at 11th Avenue and 40th Street.

6.2 Goals

6.2.1 Minneapolis Bicycle Master Plan Goals – There are three primary goals. The first goal attempts to increase the number of bicyclists and to increase bicycle mode share. The second goal focuses on safety and the quality/comfort of the trip. The third goal ensures that all locations within the city can be easily and conveniently reached by bicycle.

Goal #1 – Increase bicycle mode share.
Goal #2 - Bicycling in Minneapolis is safe and comfortable.
Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle.

Above: The majority of the trail system in Minneapolis consists of separated paths.

6.3 Strategies

6.3.1 The 6 E's – The League of American Bicyclists recommends that a balanced bicycle program consist of projects and initiatives that support one or more of the following categories:

- Education
- Encouragement
- Enforcement
- Engineering
- Equity
- Evaluation

Each of the E's are defined in Chapter 1.

Above: Public art along the Midtown Greenway.

Above: A sign along the RiverLake Greenway.

6.3.2 Minneapolis Bicycle Master Plan Strategies-

14 specific strategies support the three primary master plan goals and one of the "E's":

Goal #1 Strategies (Increase bicycle mode share):

Strategy #1 (Encouragement) - Encourage and facilitate bicycling as an important mode of personal transportation and recreation in Minneapolis.

Strategy #2 (Education) - Educate community members and visitors about the benefits of bicycling.

Strategy #3 (Equity) - Ensure that bicyclists of different backgrounds and experiences feel safe and comfortable bicycling throughout the city.

Strategy #4 (Evaluation) - Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan.

Goal #2 Strategies (Bicycling in Minneapolis is safe and comfortable):

Strategy #5 (Education) - Disseminate information and support comprehensive education for bicyclists, motorists, professional motor vehicle operators, city engineers, elected officials, and the general public.

Strategy #6 (Enforcement) – Focus on enforcement initiatives pertaining to bicycle theft and the rules of the road.

Strategy #7 (Engineering) – Use the Minneapolis Bicycle Design Guidelines to design and maintain bicycle facilities. Using these guidelines will help ensure bicycling is safe, convenient, and comfortable for all travelers.

Strategy #8 (Engineering, Enforcement, Education) – Improve bicycle safety.

Strategy #9 (Evaluation) - Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan. (Same as Strategy #4 above, but has different objectives).

Goal #3 Strategies (Destinations in Minneapolis are reasonably accessible by bicycle):

Strategy #10 (Engineering) - Ensure bikeway connectivity throughout the city by implementing the Bicycle Master Plan.

Strategy #11 (Encouragement) - Encourage developers to evaluate the need for bicycle support facilities at new developments and construction projects and to install facilities where appropriate.

Strategy #12 (Equity) - Ensure that bicyclists of different backgrounds and experiences feel safe and comfortable bicycling throughout the city. (Same as Strategy #3 above, but has different objectives).

Strategy #13 (Evaluation) - Ensure that the city qualifies for and pursues the maximum amount of available outside funding for bikeways, other biking facilities, bicycle programming, and staffing.

Strategy #14 (Evaluation) - Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan. (Same as Strategies #4 and #9 above, but has different objectives).

Goal #1 - Increase bicycle mode share

6.3.3 Strategy #1 – (Encouragement) - Encourage and facilitate bicycling as an important mode of personal transportation and recreation in Minneapolis.

Above: A couple participate in a September bike event.

Table 6.1 – Encouragement Objectives (Goal #1)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
1-1	Support projects and initiatives that encourage people to bike to school, work, and other destinations.	Continue to support Bike/ Walk Week. (ENC-1)	Increase the number of participants with destinations in Minneapolis by 10% by 2015, 20% by 2020.	Number of participants with destinations in the City of Minneapolis.	**Primary:** TMO **Secondary:** DPW Non-profit & Advocacy Organizations
		Work with organizations and businesses to promote and expand bicycle share/rental locations within the city. (ENC-2)	Based on 2010 locations, double the number of locations where bike share or rental bikes are available by 2015 and triple the # of locations by 2020.	Number of locations with bike share or rental bikes available.	**Primary:** Private/Non-Profit Sector (Such as Nice Ride) **Secondary:** DPW CPED
1-2	Increase the number of students biking to school.	Implement policies that encourage students to bike to school (K-12 & Colleges/ Universities). (ENC-3)	10% of students bike to school by 2015, 15% bike to school by 2020, and 20% of students bike to school by 2025.	% of students biking to school.	**Primary:** MPS, Private/Charter Schools, Post-Secondary Schools **Secondary:** DPW

Above: Nice Ride bikes in the Warehouse District.

Goal #1 - Increase bicycle mode share

6.3.4 Strategy #2 – (Education) – Educate community members and visitors about the benefits of bicycling.

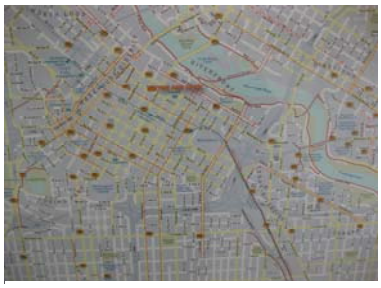
Above: Bike Walk to Work Day event.

Table 6.2 – Education Objectives (Goal #1)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
2-1	Ensure a consistent message and improve the distribution of information.	Complete, distribute, and update regularly a citywide bicycle map for public distribution that includes bicycle facilities, amenities, destinations, parking locations, connections to regional bikeways, and other information. (ED-1)	Citywide bicycle map created and distributed by 2010 and updated every two years thereafter.	# of entities distributing the map. # of maps distributed.	**Primary:** DPW **Secondary:** Communications Non-Profits TMO
		Facilitate the creation of a bicycling tourism packet to be distributed by organizations and businesses. (ED-2)	Bicycling tourism packet created by 2012 and updated every two years thereafter.	# of entities distributing the tourism packet. # of packets distributed.	**Primary:** Meet Minneapolis

Goal #1 - Increase bicycle mode share

6.3.5 Strategy #3 – (Equity) – Ensure that bicyclists of different backgrounds and experiences feel safe and comfortable bicycling throughout the city.



Above: Bike Share Map.

Table 6.3 – Equity Objectives (Goal #1)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
3-1	Provide education and information resources that reach diverse groups.	Provide bicycle educational, informational, and promotional materials in multiple languages and formats. (EQ-1)	City produced bike map available for distribution in Somali, Spanish, and, Hmong by 2020.	% of city-produced materials available in multiple languages and formats.	**Primary:** All city departments producing bicycle-related materials.
3-2	Facilitate inter-agency and inter-community cooperation in a culturally appropriate way.	Reach out to minority groups to facilitate networking and collaboration. (EQ-2)	Increase bicycle mode share among under-represented groups 5% faster than citywide bicycle mode share increases.	% modes share increase among underrepresented communities such as (gender, socio-economic status, race/ethnicity, age). % increase in citywide bicycle mode share.	**Primary:** All departments and agencies.

Above: A bicyclist along 1st Avenue in Downtown Minneapolis.

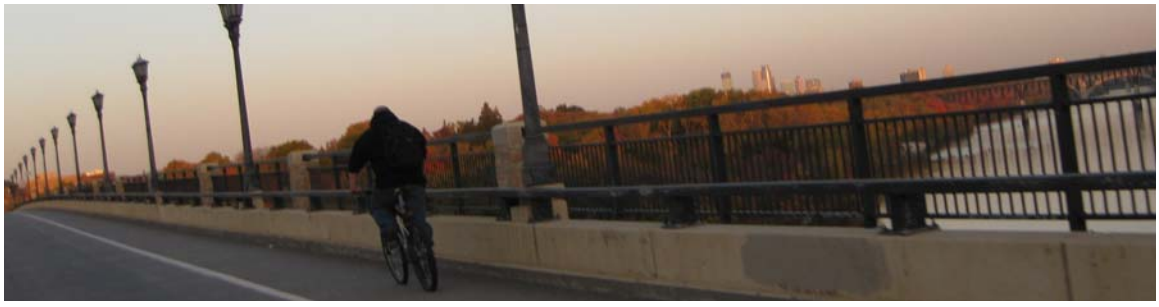
Goal #1 - Increase bicycle mode share

6.3.6 Strategy #4 – (Evaluation) - Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan.

Above: A presentation about bike counting in Minneapolis.

Table 6.4 – Evaluation Objectives (Goal #1)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
4-1	Better understand bicycle flow within the city.	Perform, analyze, and report annual bike count data. (EV-1)	Report including bicycle count data and analysis is created annually.	Completed report.	**Primary:** DPW
4-2	Better understand who is bicycling.	Analyze and report available bicycle mode share data broken down by gender, race/ethnicity, and income when possible. (EV-2)	Report including bicycle mode share data and analysis is created annually based on American Community Survey information.	Completed report.	**Primary:** DPW
4-3	Regularly evaluate the bicycle program to ensure progress.	Publish a report on the progress of the Bicycle Master Plan's implement-ation. (EV-3)	DPW staff report to T and PW Committee annually.	Completed report.	**Primary:** Staff



Above: Franklin Avenue bicyclist.

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.7 Strategy #5 – (Education) - Disseminate information and support comprehensive education for bicyclists, motorists, professional motor vehicle operators, city engineers, elected officials, and the general public.

Above: Nice Ride Kiosk.

Table 6.5 – Education Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
5-1	Instill bicycling at a young age.	Expand and maintain bicycle education curriculum in Minneapolis K-12 schools as part of the Safe Routes to School Program. (ED-3)	By 2020, all public and private schools will have a basic bicycle curriculum.	Number of Schools.	**Primary:** MPS Charter and private schools **Secondary:** DPW
5-2	Facilitate community education opportunities.	Establish and maintain a community bicycle education course available at no cost to participants. (ED-4)	By 2020, increase by 25% the number of community bicycle education courses taught.	Number of community bicycle education courses taught.	**Primary:** Non-Profit Groups **Secondary:** DPW
5-3	Focus on staff development to improve the quality of infrastructure	City of Minneapolis and MPRB planners and transportation engineers receive opportunities for professional development on planning and design for bicycle facilities. (ED-5)	1 voluntary class offered each year by 2015, and 2 voluntary classes offered per year by 2020.	Percent of planners and engineers receiving professional development.	**Primary:** DPW MPRB

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.7 Strategy #5 – (Continued)

Above: Youth in training

Table 6.5 – Education Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
5-4	Target professional drivers to prevent conflicts between modes.	Assist entities that employ professional drivers (such as transit operators, ambulance, taxi, and truck drivers) in developing and implementing training materials about sharing the road. (ED-6)	Develop and implement training materials by 2015.	Number of entities implementing the training materials.	**Primary:** TMO Non-Profits **Secondary:** Entities that employ professional drivers.
5-5	Increase helmet use.	Educate and encourage the use of helmets and other safety equipment by developing and distributing informational materials. (ED-7)	Bicycle safety informational materials developed and distributed by 2015.	Number of informational materials distributed.	**Primary:** TMO Non-Profits Health care organizations, DHFS. **Secondary:** DPW

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.8 Strategy #6 – (Enforcement) - Focus on enforcement initiatives pertaining to bicycle theft and the rules of the road.

Above: According to the University of Minnesota, U-locks significantly reduce bicycle theft.

Table 6.6– Enforcement Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
6-1	Reduce crashes through improved enforcement.	Establish a bicycle crash safety and enforcement campaign targeted at bicyclists and motorists. (ENF-1)	Bicycle crash safety campaign established and launched by 2015.	# of campaign impressions. Amount of funding secured. Total police officer hours dedicated to the campaign.	**Primary:** Nonprofit agencies, health care organizations, DHFS TMO MPD Other enforcement agencies in Minneapolis DID **Secondary:** DPW
6-2	Reduce bicycle theft through improved enforcement.	Establish a bicycle anti-theft campaign including a bike bait program, anti-theft brochures, and press releases to reduce the number of bicycle thefts. (ENF-2)	Anti-theft campaign implemented by 2015.	Total police officer hours dedicated to the campaign.	**Primary:** Minneapolis Police Department, other enforcement agencies in Minneapolis, DID.

Above: A bicycle lane along 20th Avenue South.

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.8 Strategy #6 – (Continued)

Above: Many unregistered bicycles are auctioned since the owner can not be found.

Table 6.6– Enforcement Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
6-3	Increase bicycle registration.	Encourage bicyclists to register their bicycle through the National Bicycle Registry by including registration information on city-produced bicycle-related materials and websites. (ENF-3)	Bicycle registration information included on 100% of city-produced, bicycle-related materials and websites by 2015.	% of city-produced, bicycle-related materials and websites with registration information.	**Primary:** TMO Communications MPD **Secondary:** DPW
6-4	Encourage citizen feedback.	Encourage citizens to call 311 to report behavior or conditions that endanger bicyclists by including a message about 311 on city-produced bicycle-related materials and websites. (ENF-4)	311 information included on 100% of city-produced, bicycle-related materials and websites by 2015.	% of city-produced, bicycle-related materials and websites with 311 information.	**Primary:** TMO Communications 311 **Secondary:** DPW

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.9 Strategy #7 – (Engineering) – Use the Minneapolis Bicycle Design Guidelines to design and maintain bicycle facilities. Using these guidelines will help ensure bicycling is safe, convenient, and comfortable for all travelers. These objectives require major budget commitments. The ability to achieve these objectives will depend on what becomes available in terms of resources.

Above: A bus along the Nicollet Mall with a bike rack.

Table 6.7– Engineering Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
7-1	Ensure that bikeways have a safe and smooth riding surface.	Expand pavement condition assessment to include off-street bikeways. (ENG-1)	100% of trails inspected on a 5-year schedule.	PCI database. % of bikeways inspected and recorded in database annually.	**Primary:** DPW
7-2	Ensure that all existing and future bikeways are designed and constructed to a high standard.	Ensure that all existing and future bikeways are safely marked, signed, appropriately lighted, and address personal safety as per the Minneapolis Bicycle Design Guidelines. (ENG-2)	50% of miles of bikeways meet guidelines by 2015 and 100% of miles of bikeways meet guidelines by 2020.	% of miles of bikeways that meet the guidelines.	**Primary:** DPW
7-3	Make biking to transit a convenient transportation option.	Ensuring that all major transit hubs in Minneapolis have adequate bike parking. (ENG-3)	50% of all major transportation hubs have adequate bicycle parking by 2015, 100% by 2020.	% of major transportation hubs with adequate bicycle parking.	**Primary:** DPW Metro Transit

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.9 Strategy #7 – (Continued)

Above: A changeable message sign along 2nd Avenue.

Table 6.7– Engineering Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
7-4	Improve bicycle safety at intersections	Accommodate bicycles at actuated signals. (ENG-4)	50% of all actuated signals within the city with detection by 2015, 75% by 2018, and 100% by 2020.	% of intersections updated, repaired, or adjusted.	**Primary:** DPW-TPS
7-5	Improve bicycle safety along corridors	Evaluate the use of traffic calming along bike routes and evaluate all mid-block trail crossings. (ENG-5)	Evaluate 25% of existing on-street bikeways by 2015. Evaluate 50% of existing on-street bikeways by 2020. Evaluate 50% of existing mid-block crossings by 2015. Evaluate 100% of existing mid-block crossings by 2020.	% of on-street bikeways evaluated. % of suggested improvements implemented.	**Primary:** DPW
7-6	Improve bicycle detour guidance	Develop and implement standard detour strategies based on the MMUTCD for construction projects to ensure safe passage for bicyclists. (ENG-6)	Use the 2010 MUTCD to develop more specific guidance by 2012. Upon completion, 100% of detour routes to comply with the guidelines.	% of detour routes that follow the standard and allow for safe passage of bicyclists.	**Primary:** DPW

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.9 Strategy #7 – (Continued)

Above: A bike lane along 40th Street South in Minneapolis.

Table 6.7– Engineering Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
7-7	Improve bicycle wayfinding	Secure funding and install comprehensive wayfinding and informational signage. (ENG-7)	25% of miles of bikeways meet signage guidelines by 2015 and 50% of miles of bikeways meet signage guidelines by 2020.	% of miles of bikeways meeting signage guidelines.	**Primary:** DPW **Secondary:** Neighborhood Groups
7-8	Consider innovative solutions when designing bicycle facilities.	Design bicycle facilities that meet or exceed Minnesota Bicycle Design Guidelines and AASHTO guidelines and apply innovative treatments where appropriate. (ENG-8)	100% of new bikeway miles meet or exceed the guidelines and standards by 2012. At least 5 experimental treatments are advanced/ explored by 2015; 10 treatments by 2020.	% of bikeway miles meeting or exceeding guidelines and standards. # of experimental treatments tested.	**Primary:** DPW

Above: Mayor Rybak and the Minneapolis Bicycle and Pedestrian Ambassadors at a Bike Share event.

Above: Bicyclists at a Bike to Work Day in Spring.

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.9 Strategy #7 – (Continued)

Above: Road closure signs along a new bike route.

Table 6.7– Engineering Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
7-9	Facilitate private investment in bicycling.	Encourage office building managers and owners to install shower/locker facilities and secure bicycle storage facilities. (ENG-9)	5 new public shower/locker facilities by 2020. Bicycle storage facilities at 50% of public buildings by 2020.	Number of facilities installed.	**Primary:** CPED DPW **Secondary:** TMO

Above: The Federal Courthouse has showers and lockers for bicyclists.

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.10 Strategy #8 – (Engineering, Enforcement, Education) – Improve Safety.

Above: Bicyclist crossing 26th Street at the LRT Trail.

Table 6.8– Engineering, Enforcement, and Education Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
8-1	Reduce bicycle fatalities.	Implement Toward Zero Death Initiative. (ENG/ ENF/ED-1)	Cut fatality rate in half every 5 years.	Number of bicycle fatalities.	**Primary:** MPD DPW **Secondary:** Hennepin County Three Rivers Park District MnDOT
8-2	Reduce bicycle crashes.	Implement the Crash Reduction Project (ENG/ ENF/ED-2)	Reduce crashes by 10% each year.	Number of bicycle crashes.	**Primary:** MPD Public Works **Secondary:** Hennepin County Three Rivers Park District MnDOT
8-3	Reduce bicycle injuries.	Implement the Crash Reduction Project (ENG/ ENF/ED-2)	Reduce crashes by 10% each year.	Number of bicycle injuries.	**Primary:** MPD Public Works **Secondary:** Hennepin County Three Rivers Park District MnDOT

Above: Wearing a helmet greatly reduces head injuries.

Goal #2 - Bicycling in Minneapolis is safe and comfortable

6.3.11 Strategy #9 – (Evaluation) – Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan.

Above: Pavement markings along the Midtown Greenway.

Table 6.9– Evaluation Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
9-1	Improve safety by using crash data.	Continue to collect, analyze and report crash statistics. (EV-4)	Evaluate top 10 crash locations annually and implement countermeasures for top 3 intersections each year.	Number of locations evaluated.	**Primary:** DPW **Secondary:** MPD
9-2	Reduce bicycle theft by using theft data.	Continue to track bicycle theft statistics. (EV-5)	Targeted enforcement at 5 locations per year by 2015.	Number of locations targeted.	**Primary:** MPD
9-3	Reduce the number of bicycle system complaints by using 311 data.	Continue to track 311 calls pertaining to bicycling. Reduce the number of bicycle system complaints. (EV-6)	Reduce complaints by 50% by 2015 and 75% by 2020.	Number of complaints.	**Primary:** Minneapolis 311 DPW
9-4	Ensure that high quality bicycle facilities are preserved.	Collect, analyze, and report current level of quality for all bikeways and identify key indicators such as pavement marking condition, lighting, signage and others. (EV-7)	Signs are replaced every 10 years, pavement markings a minimum of every two years, and light fixtures changed within a month of being reported out.	Number of pavement markings, signs, and light fixtures.	**Primary:** DPW MPRB

Goal #2 - Bicycling in Minneapolis is safe and comfortable

Table 6.9– Evaluation Objectives (Goal #2)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
9-5	Monitor and build upon education and outreach events.	Track and report the number of bicycling education and outreach events in the city. (EV-8)	Increase the number of events by 10% each year.	Number of events.	**Primary:** Public Schools Non-Profits **Secondary:** DPW MPRB

Above: Midtown Greenway at Anne Sullivan School.

Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

6.3.12 Strategy #10 – (Engineering) – Ensure bikeway connectivity throughout the city by implementing the Bikeways Master Plan.

Above: Bike lane along 20th Avenue South.

Table 6.10– Engineering Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
10-1	Build and maintain a system of bikeways to increase bicycling and to improve safety.	Complete all of the routes identified in the Bikeways Master Plan map. (ENG-10)	33% of proposed improvements by 2020. 66% of proposed improvements by 2030. 100% of proposed improvements by 2040.	% bikeway plan map complete.	**Primary:** DPW Hennepin County MPRB Three Rivers Park District
10-2	Fund capital and operations bicycle projects to increase bicycling and to improve safety.	Ensure that there is adequate funding to build and maintain new projects within the Bicycle Master Plan. (ENG-11)	33% of proposed improvements funded by 2020. 66% of proposed improvements funded by 2030. 100% of proposed improvements funded by 2040.	% of funding secured.	**Primary:** DPW Hennepin County MPRB Three Rivers Park District

Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

Table 6.10– Engineering Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
10-3	Facilitate bicycle friendly design on all streets.	Roadway design should take into consideration the safety needs of bicyclists (eg. bicycle friendly manholes, gutter pans, and bicycle safe catch basins). (ENG-12)	25% of all streets compliant by 2020. 50% of all streets compliant by 2030. 75% of streets complaint by 2040. 100% compliance by 2050.	Miles of roadway.	**Primary:** DPW Hennepin County MPRB Three Rivers Park District

Above: A bicycle facility pavement marking.

Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

6.3.13 Strategy #11 – (Encouragement) – Encourage developers to evaluate the need for bicycle support facilities at new developments and construction projects and to install facilities where appropriate.

Above: Bicycle Parking along the Van White Trail.

Table 6.11– Encouragement Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
11-1	Encourage private investment in bikeways and support facilities.	Encourage developers to evaluate the need for and to install bikeways and/or support facilities that facilitate bicycling. (ENC-4)	25% of developments have a bicycle facility component by 2015. 50% of developments have a bicycle facility component by 2020.	% of developments where bicycle support facilities are considered and installed as appropriate.	**Primary:** CPED
11-2	Encourage private investment in bicycle parking.	Encourage developers to install bike parking (as per ordinances) and other bicycle amenities. (ENC-5)	100% of developments comply with the bicycle parking rule by 2012.	Number of violations issued by Regulatory Services.	**Primary:** Regulatory Services
11-3	Facilitate public/ private partner-ships to maximize the number of bicycle racks installed throughout the city.	Increase the amount bike parking by continuing the 50% cost share program for schools, community groups, businesses, multi-unit residential properties, and places of worship. (ENC-6)	Increase bicycle parking by 300 spaces per year. 100% of schools, parks, post offices, and city owned buildings to have bicycle parking by 2015.	Number of parking spaces.	**Primary:** DPW **Secondary:** Neighborhood Groups Business Groups

Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

6.3.14 Strategy #12 – (Equity) – Ensure that bicyclists of different backgrounds and experiences feel safe and comfortable bicycling throughout the city.

Above: Kiosk along the Minneapolis Diagonal Trail.

Table 6.12– Equity Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
12-1	Support bicycle facilities that provide connect-ions and remove barriers.	Ensure that all city neighborhoods are connected to a bicycle facility. (EQ-3)	100% of neighborhoods connected to a bicycle facility by 2020.	% of neighborhoods connected to a bicycle facility.	**Primary:** DPW

Above: West River Parkway Trail is part of the Grand Rounds National Scenic Byway.

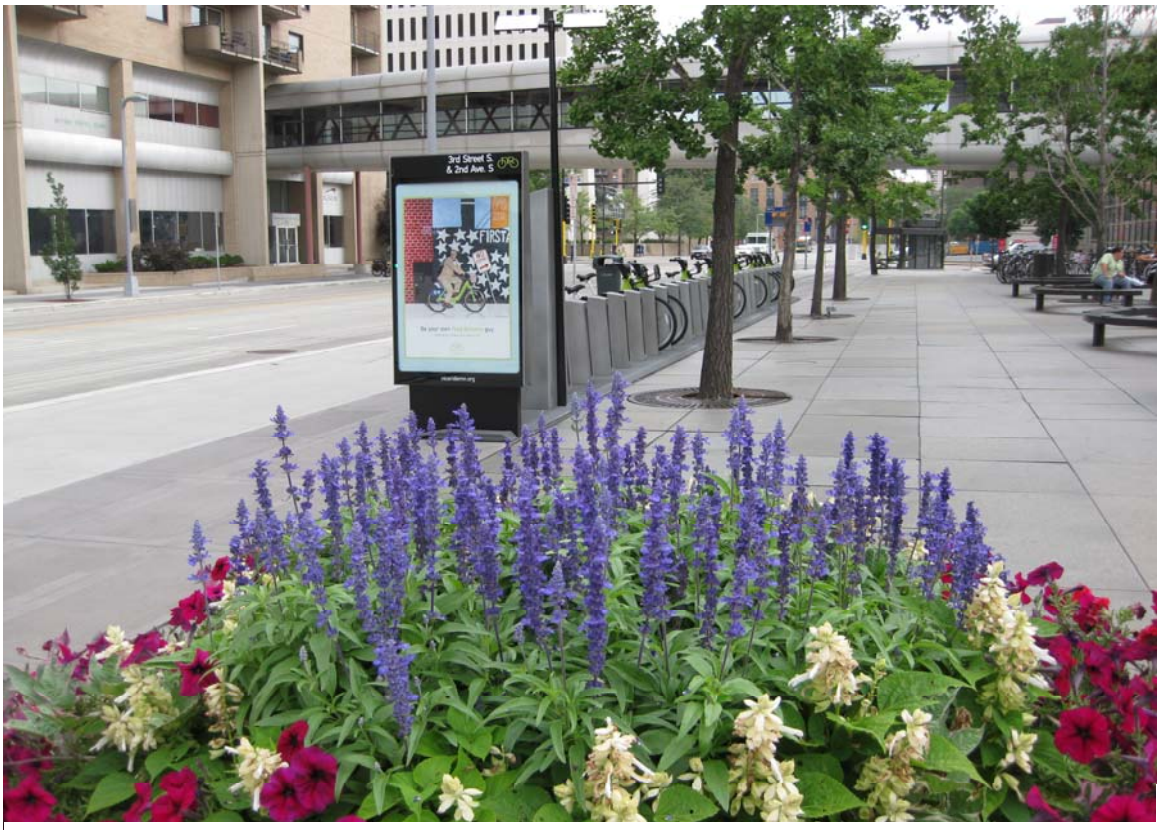
Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

6.3.15 Strategy #13 – (Evaluation) – Ensure that the city qualifies for and pursues the maximum amount of available funding for bikeways, other biking facilities, bicycle programming, and staffing.

Above: Bike Share kiosk at TCF Stadium.

Table 6.13– Evaluation Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
13-1	Maximize available funding for bicycle facilities.	Allocate city resources to leverage outside funding. (EV-9)	Maintain and expand current funding levels.	Dollars secured.	**Primary:** DPW CLIC Mayor's Office City Council



Above: Bike Share kiosk along 2nd Avenue in Downtown Minneapolis.

Goal #3 - Destinations in Minneapolis are reasonably accessible by bicycle

6.3.16 Strategy #14 – (Evaluation) – Monitor, measure, and evaluate the implementation of the Minneapolis Bicycle Master Plan.

Above: Midtown Greenway Bridge Over Hiawatha.

Table 6.14– Evaluation Objectives (Goal #3)

Objective		Selected Initiative	Benchmark	Performance Measure	Responsible Party
14-1	Monitor the progress of the bicycle program to ensure success.	Regularly update the Bicycle Master Plan. (EV-10)	Consider an update to the plan every 10 years.	Number of years.	**Primary:** PW

Above: Midtown Greenway at Minnehaha Avenue.

Chapter 7 – Project Identification and Prioritization

Above: West River Parkway

7.1 Chapter Overview

7.1.1 Purpose—This chapter identifies infrastructure and non-infrastructure projects in addition to creating criteria for prioritization. These projects and initiatives support the goals and objectives outlined in this document, build on existing conditions, and attempt to adequately address the needs analysis.

7.1.2 Infrastructure Topics – This chapter addresses the following topics:

Infrastructure Projects - This section addresses the identification of physical infrastructure needs, which lead to a list of infrastructure projects.

- Access Minneapolis 10 –Yr Transportation Action Plan Gap Analysis: This plan created a list of system gaps in 2009.
- Hennepin County Bicycle Gap Study: In 2002 Hennepin County conducted a gap analysis. Many of these gaps still exist today.
- Present Gaps: A current gap analysis was conducted identifying the existing gaps in the system. Many of the gap projects previously identified in the Access Minneapolis Gap Analysis and the Hennepin County Bicycle Gap Study have been constructed.
- Community Connectors: Connections to other communities.
- 5-Year Capital Program: List of funded projects in the 5-Yr Capital Program.
- Bikeways Master Plan Map: The Bikeways Master Plan Map shows all of the proposed bikeway projects needed to complete the bicycle system and is based on the 2001 Bikeways Master Plan. The Bikeways Master Plan Map also reflects extensive community input.
- Opportunity and Stand-Alone Projects: This section identifies which projects are opportunity projects and which projects are stand-alone projects.
- Corridor Improvements/Spot Improvements/System-wide Improvements: This section looks at all three types of corridors and suggests candidate projects.
- Project List: The project list shows all proposed projects by quadrant.

Prioritization—Due to limited resources, projects and initiatives must be prioritized. Several criteria have been developed to help fairly classify candidate projects. The BAC will advise on project prioritization.

- Project Criteria: These criteria are used to help prioritize bicycle projects.
- Bicycle Functional Classification: This is a tool to help prioritize bikeways.

7.1.3 Non-Infrastructure Topics

Above: Minneapolis Riverfront

Non-Infrastructure Initiatives—A well balanced bicycle program should pursue initiatives that satisfy all 6 "E's" not just engineering/infrastructure projects. To address this, both long-term and short-term initiatives have been identified. Long-term initiatives tend to be more expensive whereas short-term projects tend to be cheaper and easier to implement.

7.2 Infrastructure Projects

7.2.1 Access Minneapolis 10 –Yr Transportation Action Plan Gap Analysis —As part of the Access Minneapolis 10 –Yr Transportation Action Plan a bicycle gap analysis identified the following system gaps and discontinuities:

Gaps in Off-Street Facilities:

#1 49th Avenue Trail Corridor
#2 Osseo Road Trail Corridor
#3 Ryan Lake Trail Corridor
#4 Upper River Trail Corridor
#5 Upper River Trail Corridor
#6 27th Avenue NE Trail Corridor
#7 Upper River Trail Corridor
#8 University Avenue Trail Corridor
#9 Central Avenue Trail Corridor
#10 St. Anthony Parkway Trail Corridor
#11 Stinson Parkway Trail Corridor
#12 East River Parkway Trail Corridor
#13 NE Cedar Lake Trail Corridor
#14 East River Parkway Trail Corridor
#15 Oak Street Trail Corridor
#16 Chicago Avenue Corridor
#17 Dunwoody Trail Corridor
#18 Emerson/Freemont Trail Corridor
#45/46 I-35W Tunnel Corridor
#47 Washington Ave Trail Corridor
#48 CP Rail Corridor
#52 26th Ave N Corridor

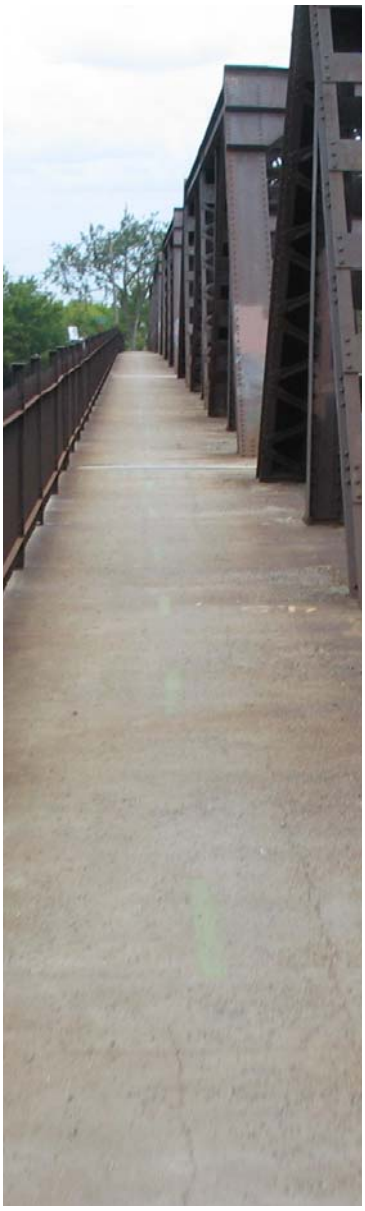
Above: Stone Arch Bridge

Above: Bike lane on Lowry Avenue

7.2.1 Access Minneapolis 10 –Yr Transportation Action Plan Gap Analysis (Continued)

Gaps in On-Street Facilities:

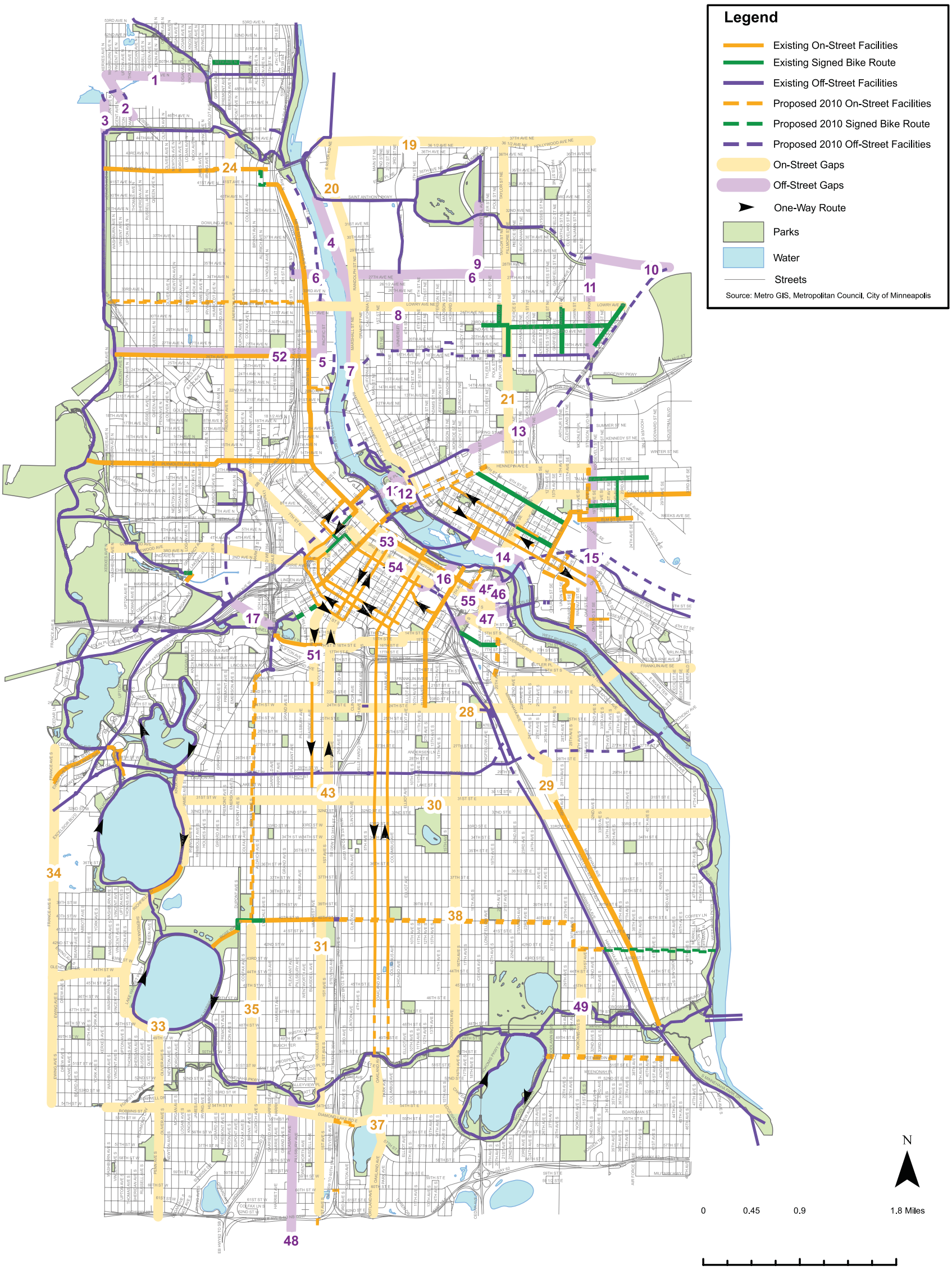
#19 37th Avenue On-Street Corridor
#20 Marshall On-Street Corridor
#21 Fillmore Street NE On-Street Corridor
#22 Lowry Ave NE On-Street Corridor
#23 Como On-Street Corridor
#24 Emerson/Freemont On-Street Corridor
#25 Glenwood Avenue On-Street Corridor
#26 10th Ave On-Street Corridor
#27 Riverside Ave On-Street Corridor
#28 24th Street On-Street Corridor
#29 Minnehaha On-Street Corridor
#30 32nd Street On-Street Corridor
#31 Nicollet Avenue On-Street Corridor
#32 Hennepin Avenue On-Street Corridor
#33 Upton/Sheridan Avenue On-Street Corridor
#34 France Avenue On-Street Corridor
#35 Bryant Avenue On-Street Corridor
#36 Diamond Lake Road On-Street Corridor
#37 Portland Avenue On-Street Corridor
#38 Bloomington Avenue On-Street Corridor
#39 7th Street North On-Street Corridor
#40 14th/15th/16th On-Street Corridor
#41 Franklin Avenue On-Street Corridor
#42 44th Street On-Street Corridor
#43 1st Ave S On-Street Corridor
#44 29th Street On-Street Corridor
#49 30th Ave On-Street Corridor
#50 10th Street Bridge Corridor
#51 Lasalle On-Street Corridor
#53 2nd Street On-Street Corridor
#54 3rd Street On-Street Corridor
#55 Washington Ave Over I-35W



Above: St Anthony Parkway Bridge Trail

Above: Bike lane around Lake Harriet

Figure 7.1 - Access Minneapolis Gaps



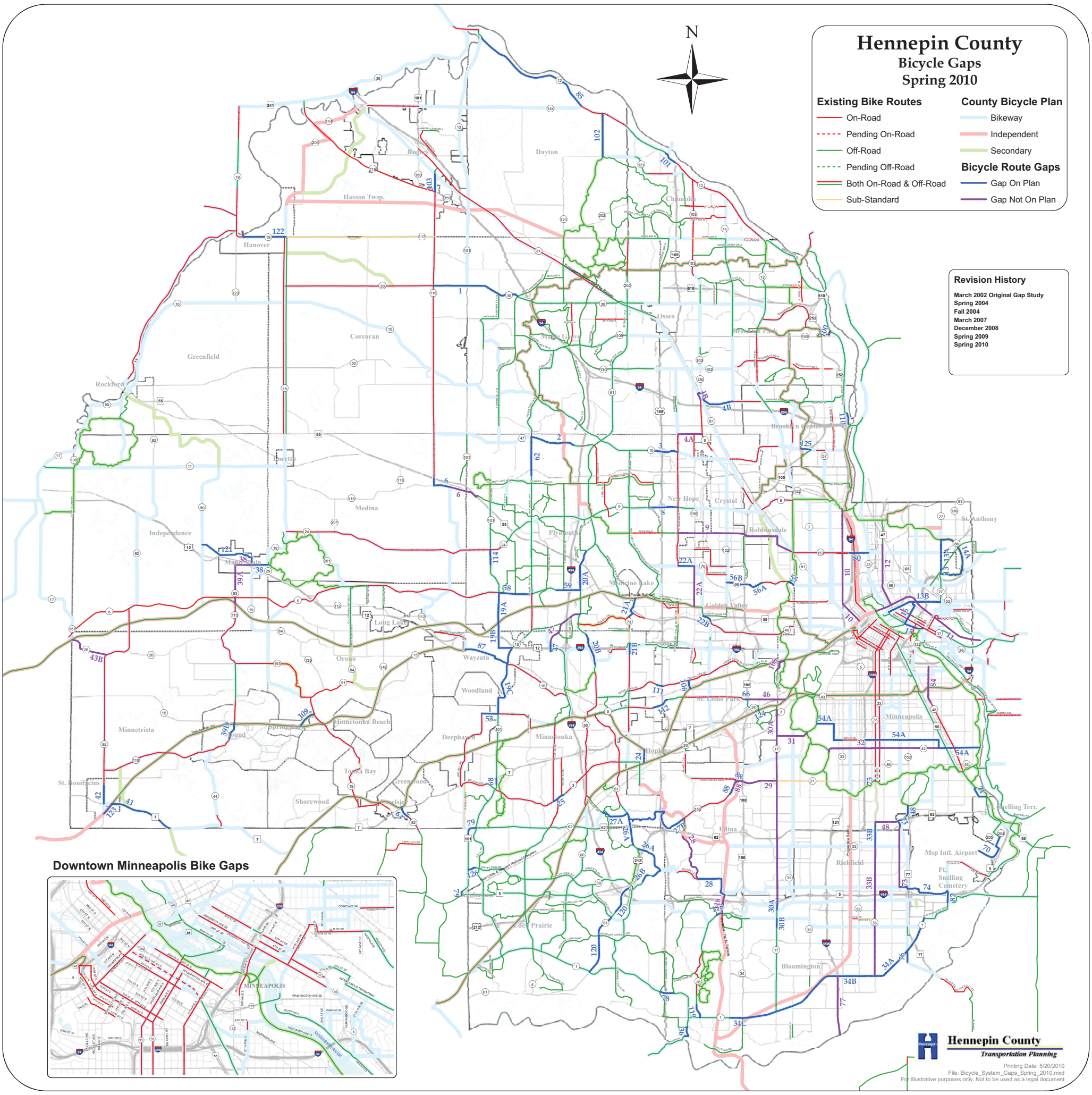
7.2.2 Hennepin County Bicycle Gap Study—This study was originally completed in 2002 and recognized a number of gaps in Minneapolis. This study was updated in 2010.

Above: Martin Sabo Bridge

Table 7.1 – 2010 Hennepin County System Gaps

Gap #	System Gap	Project Limits	On-Street or Off-Street
10	Lyndale Avenue/5th St N	Webber Pkwy to 2nd Ave N	Off-Street
11	BNSF Railway Corridor	Mississippi River to St. Paul	On-Street
12	Marshall Street NE	Hennepin Ave to 27th Ave NE	On-Street
13	Ridgeway Parkway	Stinson to St. Anthony Pkwy	Off-Street
13A	Stinson Blvd	Stinson Pkwy to 18th Ave NE	On-Street
13B	Hennepin Avenue NE	Main Street to Stinson Blvd.	On-Street
14A	St. Anthony Parkway	Stinson to Ridgeway Road	Off-Street
15	East River Trail Missing Link	Stone Arch Bridge to Bridge 9	Off-Street
16	6th Ave SE	Main Street to Hennepin Ave	On-Street
30A	France Avenue	Ewing Avenue to City Limits	On-Street
31	West 39th Street	France Avenue to Richfield Rd	On-Street
32	West 42nd Street	Lake Harriet to Nokomis Ave	On-Street
33B	Portland Avenue	60th Street to City Limits	On-Street
48	East 60th Street	Portland Ave to Bloomington	On-Street
54A	36th St/King's Highway/RiverLake Greenway	Lake Calhoun to Mississippi River	On-Street
71	Fort Snelling Trail Gap	54th Street to City Limits	Off-Street
73	Bloomington Avenue	60th Street to City Limits	On-Street
75	Portland Avenue	Minnehaha Pkwy to 60th St	On-Street
80	Lowry Bridge	2nd Street to Marshall Street	Off-Street
84	Minnehaha/26th Avenue	31st St to Franklin Avenue	On-Street

Figure 7.2 - Hennepin County Gap Study



7.2.3 Present Gaps—Many of the gaps that have been identified by both the Access Minneapolis Plan and the Hennepin County Gap Analysis have been funded or completed. The Present Gap Study uses a 2 mile spacing requirement for trails, 1 mile spacing for bike lanes or bike boulevards, and 1/2 mile spacing for signed routes. The study also requires that there be a bicycle facility connection on both ends of the gap so there are no discontinuities created when a gap project has been completed. To determine system gaps, a map showing fully funded facilities was overlaid onto a map of existing facilities. The following gaps still remain:

Above: West River Parkway

Above: Minnehaha Creek Trail

Above: Upper Mississippi Trails

<u>Gaps in Off-Street Facilities:</u>

- 49th Avenue North Trail Corridor
- Osseo Road Trail Corridor
- Ryan Lake Trail Corridor
- Crystal Lake Trail Corridor
- Dunwoody Trail Corridor
- Central Avenue Trail Corridor
- Waite Trail Corridor
- Upper River Trails
- 27th Ave NE Trail Corridor
- University Ave NE Trail Corridor
- St. Anthony Parkway Trail Corridor
- Stinson Parkway Trail Corridor
- Grand Rounds Trail Corridor
- NE/Cedar Lake Trail Corridor
- East River Parkway Trail Corridor
- Chicago Avenue Trail Corridor
- Washington Avenue Trail Corridor
- LRT Trail Gap
- CP Rail Trail
- Inter-City Trail Corridor

7.2.3 Present Gaps - Continued

Gaps in On-Street Facilities:

- Thomas Avenue Corridor
- 27th Ave NE Corridor
- Lowry Avenue Corridor
- Marshall Street Corridor
- Como Avenue Corridor
- 24th Street Corridor
- 32nd Street Corridor
- Diamond Lake Road Corridor
- 44th Street Corridor
- France Avenue Corridor
- Upton/Sheridan Corridor
- Nicollet Avenue Corridor
- Portland Avenue Corridor
- Bloomington Avenue Corridor
- 38th Avenue Corridor

Above: Marshall Street NE

Above: Marshall Street NE Bridge with striped shoulder

Above: Park Avenue at 14th Avenue.

Figure 7.3 - Existing Bikeways in Minneapolis (May 2011)

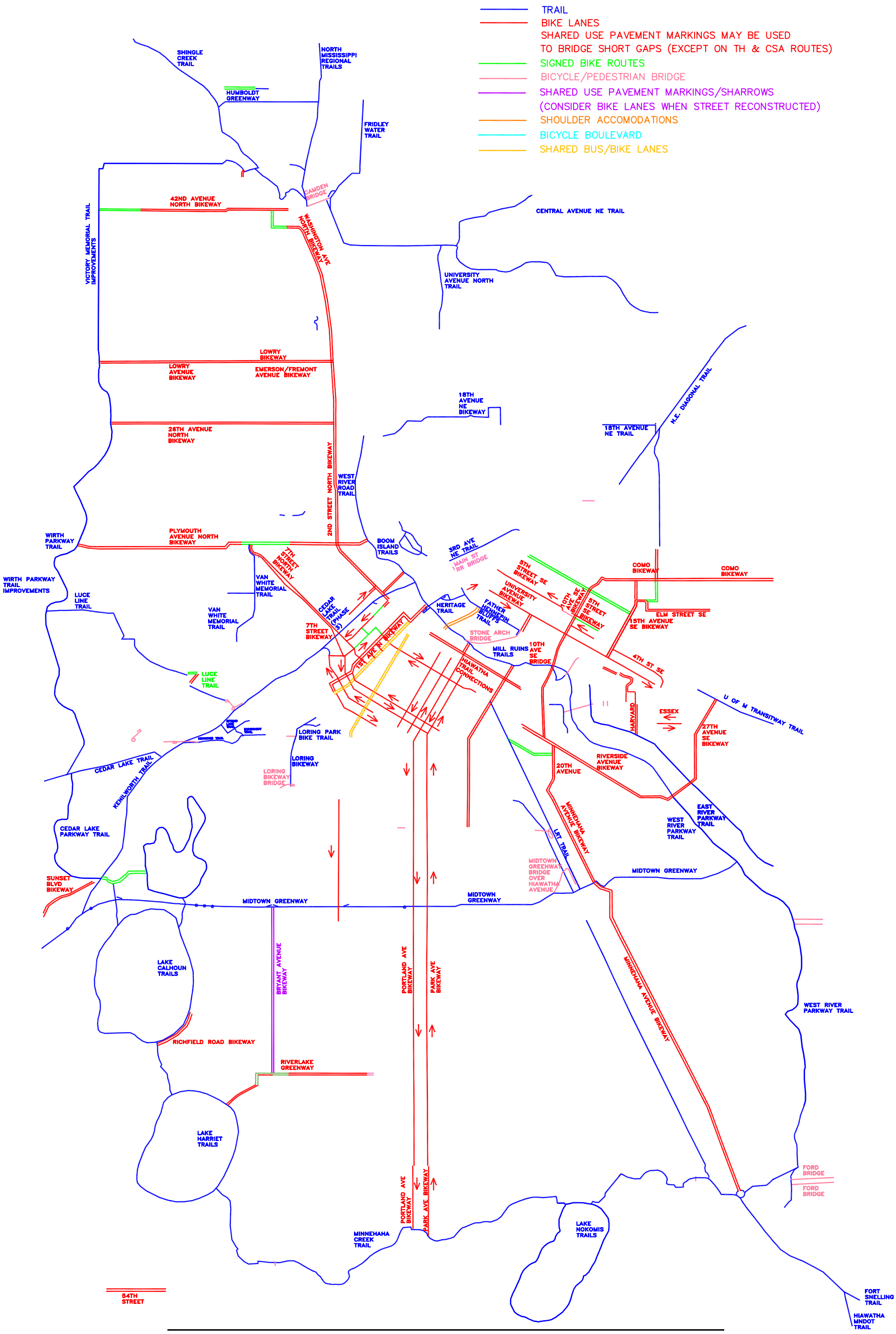
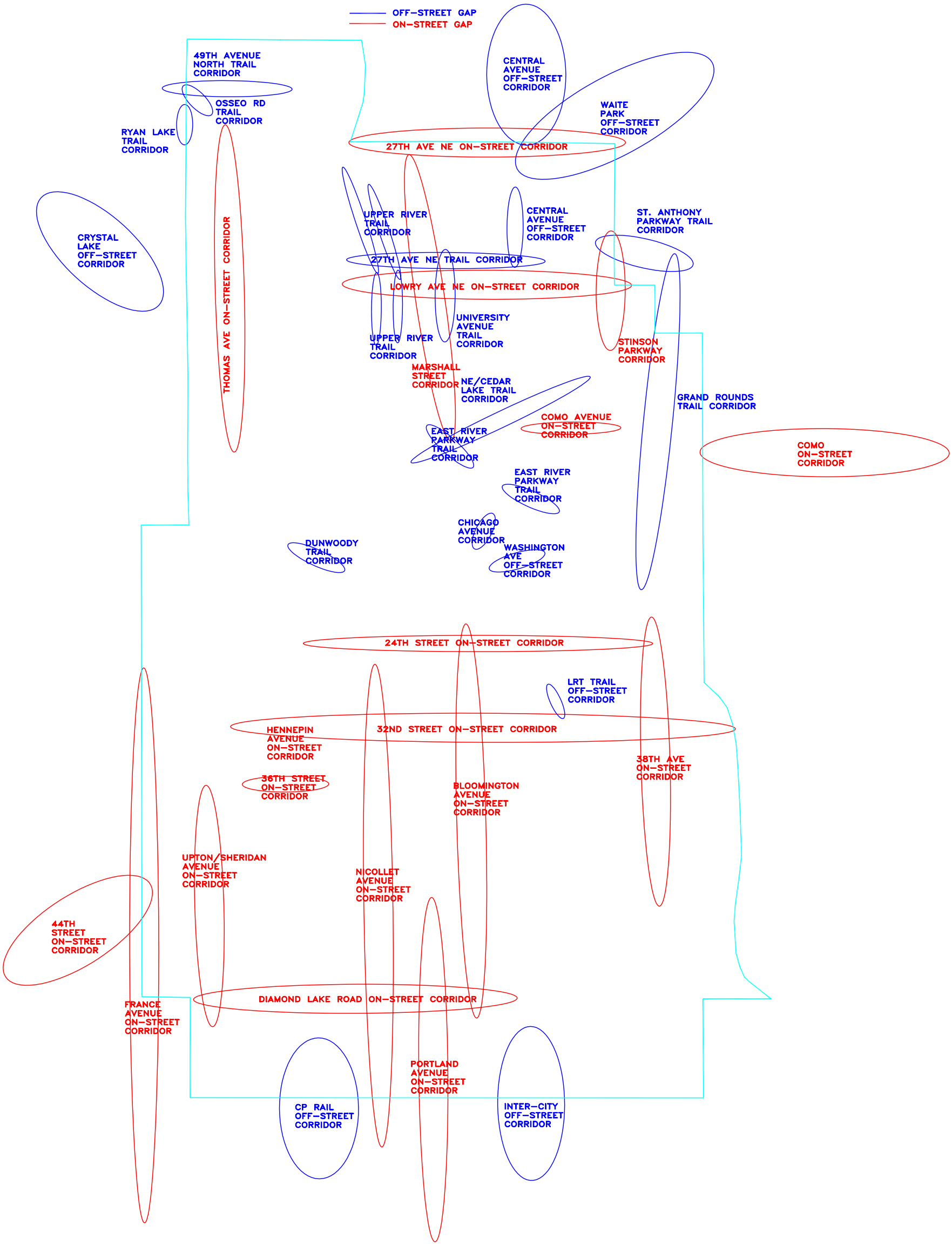


Figure 7.4 - Existing Bicycle System Gaps (May 2011)



Above: Downtown Bicyclist

7.2.4 Community Connectors—Both on-street and off-street connections to surrounding communities are just as important as completing internal system gaps. Below is a discussion about existing and proposed connections to adjacent communities. A map showing all of these connections is included.

Brooklyn Center: The Shingle Creek Trail and the North Mississippi Regional Trails are the primary bicycle facility connectors into Brooklyn Center. There does not appear to be a need for additional off-street facilities, however on-street connections via Humboldt Avenue and Bryant Avenue may be further explored.

Columbia Heights: There are currently no trail connections to Columbia Heights. Perhaps the greatest opportunity for a future trail is along Central Ave NE. On-street bike lanes have also been recommended for 37th Ave NE and would require cooperation from both cities.

Edina: There does not appear to be any opportunities for trail connections into Edina, however both the 44th Street corridor and the France Avenue corridors present opportunities for on-street improvements. France Avenue is a county road and would likely require the removal of parking to facilitate bicycle lanes.

Fort Snelling/MSP Airport: Currently there is an off-street trail that connects to Fort Snelling, with a spur to the historic barracks. There is currently a trail gap between 54th Street and the MnDOT trail near the Bureau of Mines buildings. There also continues to be challenges with getting a trail to connect with the Lindbergh Terminal at MSP Airport. The agencies in this vicinity will need to collaborate to determine the best alignment for these connections.

Fridley: There is an existing off-street trail that runs parallel to East River Road. This facility addresses most cyclist's needs in this area.

Golden Valley: The Wirth Parkway Trail is technically located in Golden Valley. Perhaps the most important connection is the Luce Line Trail, which is now completed. On-street routes including 26th Avenue North, Glenwood Avenue, Golden Valley Road, and Plymouth Avenue intersect with Wirth Parkway.

Lauderdale: A future bike connection via Hennepin Avenue is currently the only proposed connection.

Richfield: The CP Rail Trail and Inter-City Trail along Bloomington Avenue are proposed to address off-street users. Portland Avenue, Nicollet Avenue, Lyndale Avenue, and Penn Avenues have been identified as on-street bike routes.

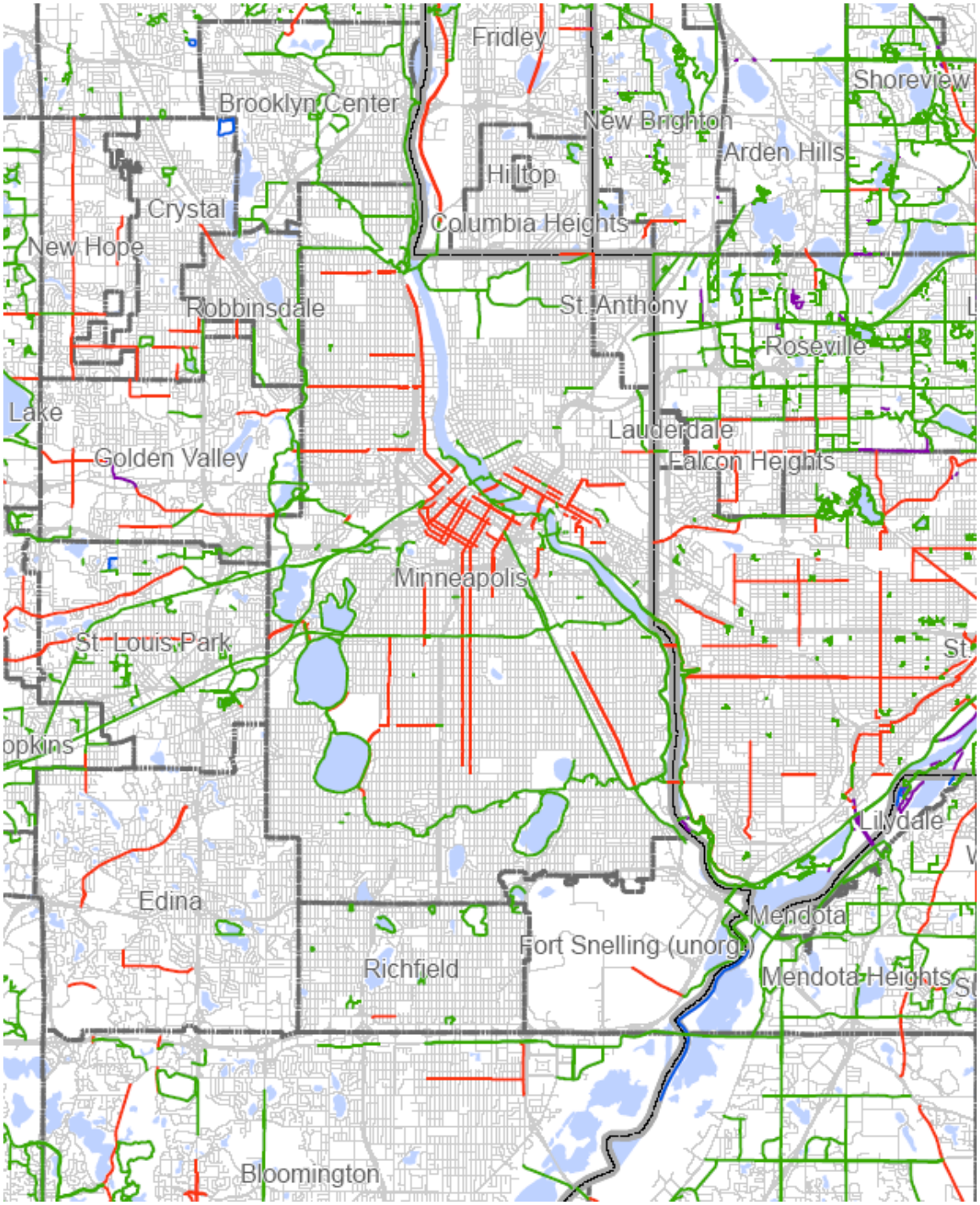
Robbinsdale: The Crystal Lake Trail will provide a valuable off-street trail connection.

St. Anthony: The NE Diagonal Trail now provides an excellent off-street connection into St. Anthony. The proposed Waite Park Trail would make a second connection into St. Anthony.

St. Louis Park: Both the Cedar Lake Trail and SW LRT Trails connect to St. Louis Park.

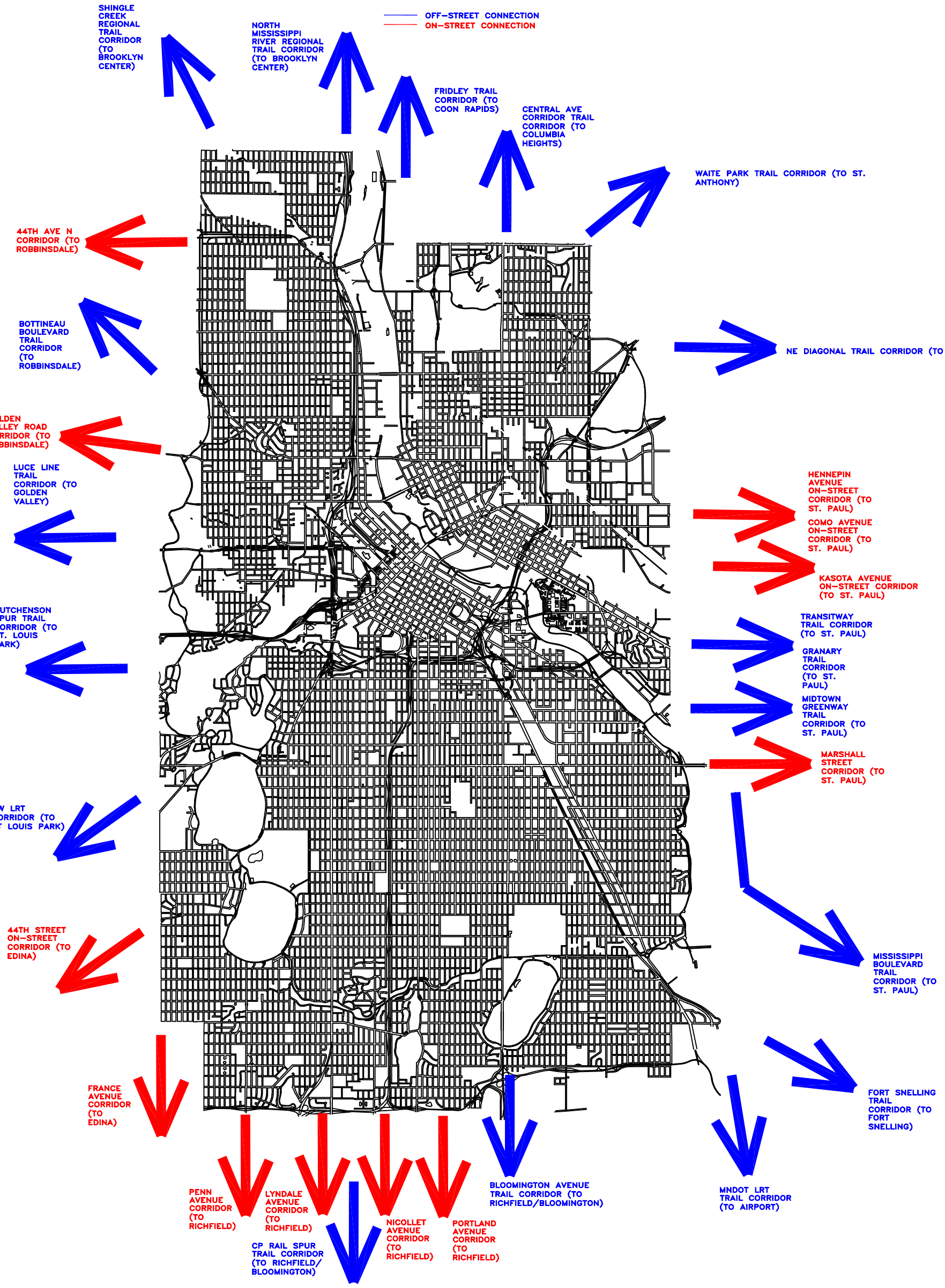
St. Paul: There are several existing and proposed off-street connections including Granary Road, the U of M Transitway, East River Parkway, and the Midtown Greenway. Como Ave, Kasota Ave, Marshall Street, and Hennepin Avenue provide existing and proposed on-street connections to St. Paul.

Figure 7.5 – Existing Connections to Minneapolis (Met Council 2007)



Above: Above is a Metropolitan Council map of existing bikeways showing connections to/from Minneapolis. Green lines are trails and red lines are bike lanes/paved shoulders.

Figure 7.6 - Existing and Proposed Community Connectors



7.2.5 5-Year Capital Program – There are a number of projects that have been identified for construction between 2011 and 2015. The projects that have been identified in the infrastructure project list (later in this chapter) as based on the assumption that the projects below will be completed by 2015.

Above: The Plymouth Avenue Bridge will have bike lanes installed in 2011.

Table 7.2 – Off-Street Projects in the 5-Year CIP

On-Street Facility	Year	New Miles
18th Avenue NE Trail	2011	1.5
Cedar Lake Trail (Phase 3)	2011	1.0
Hiawatha Trail Connection	2011	0.2
Hiawatha LRT Trail Lighting	2014	-
University of Minnesota Trail	2012	0.8
Van White Bridge Trail	2012	0.5
Total		**4.0**

Table 7.3 – On-Street Projects in the 5-Year CIP

On-Street Facility	Year	New Miles
1st/Blaisdell	2011	4.4
3rd St S (Hennepin to Norm McGrew)	2011	0.8
5th St NE	2011	2.0
7th St/10th Ave N	2011	2.8
10th Ave SE	2011	0.8
14th/15th/16th St	2011	1.6
19th Ave S	2011	0.7
22nd Ave NE	2011	2.4
26th Avenue S	2011	0.6
27th Ave SE	2011	0.6
Bryant Ave S	2011	3.2
Central Avenue Bikeway	2011	2.3
Como Ave SE	2011	1.0
DDIR Projects (4th Avenue, 5th Avenue, 6th Street)	2011	1.8
Emerson/Fremont Aves N	2011	4.7
Fillmore/6th Avenues	2011	3.9
Franklin Ave E	2011	1.3
Glenwood Ave	2011	2.0
Marshall/Main	2011	1.0
Minnehaha Avenue S	2011	1.5
Plymouth Ave N/8th Ave NE	2011	1.1
RiverLake Greenway (40th - I35W to 30th Ave, 30th - 38th to 42nd, 42nd - 30th to W River Pkwy)	2011	4.0
Riverside Ave	2011	1.3
Total		**47.9**

7.2.6 Bikeways Master Plan —The Bikeways Master Plan is a map of how the bikeways system in Minneapolis may look fully built out. There are several types of facilities that have been identified on this plan including off-street trails, bicycle and pedestrian bridges, bicycle boulevards, shared bus/bike lanes, signed routes, routes with shoulders, and routes with shared use pavement markings. The purpose of so many types of facilities is to allow different facility choices at a reasonable spacing to attract bicyclists of all ages and abilities. Working together, this proposed facility network would allow for a cost-effective transportation network that anyone can use to get from place to place.

Above: LRT Trail Crossing at Cedar Riverside Station

Process: The Bikeways Master Plan builds upon the 2001 Bikeways Master Plan, which is based on community suggestions. Although there are some route changes in the new plan, most of the routes have remained unchanged since 2001. New types of bicycle facilities have since emerged and many of the on-street corridors are now identified as bicycle boulevards or use shared use pavement markings. Routes that have shared use pavement markings should consider bicycle lanes when the street is reconstructed. Routes that are not on CSA or TH routes may use shared use pavement markings (sharrows) to bridge small gaps where the road is not wide enough to accommodate bicycle lanes. It is important to note that this map is guidance for the design process and that community input or technical factors may result in a different design. It is important to note that many of the routes identified in this plan may take years before the projects are ready for implementation due to land use changes or changes in public opinion. The rate at which new facilities can be constructed will depend on available resources and the cities capacity to fund and maintain existing facilities.

Above: U of M Transitway Trail

7.2.6 Bikeways Master Plan - Continued

Factors: Before placing a bicycle route on the Bikeways Master Plan a number of factors were considered including (detailed analysis has not been done):

- Potential use
- Traffic safety and personal safety
- Directness of route
- Access to destinations and land use
- System connectivity
- Removing system gaps and barriers
- Connections to transit/bus routes
- Types of users and skill levels to be served
- Available right-of-way/available space
- Proximity to other bicycle facilities
- Jurisdictional responsibility/function
- Community support
- Truck volumes/potential truck conflicts
- Proximity to parks and schools
- Location of existing traffic control devices
- Motor vehicle parking impacts
- Bicyclist comfort/scenic route locations
- Number of at-grade locations
- Motor vehicle volumes and speeds
- Grades/topography

Above: Eastside CO-OP Bike Racks

Above: Webber Park Trail

Figure 7.7 - Bikeways Master Plan

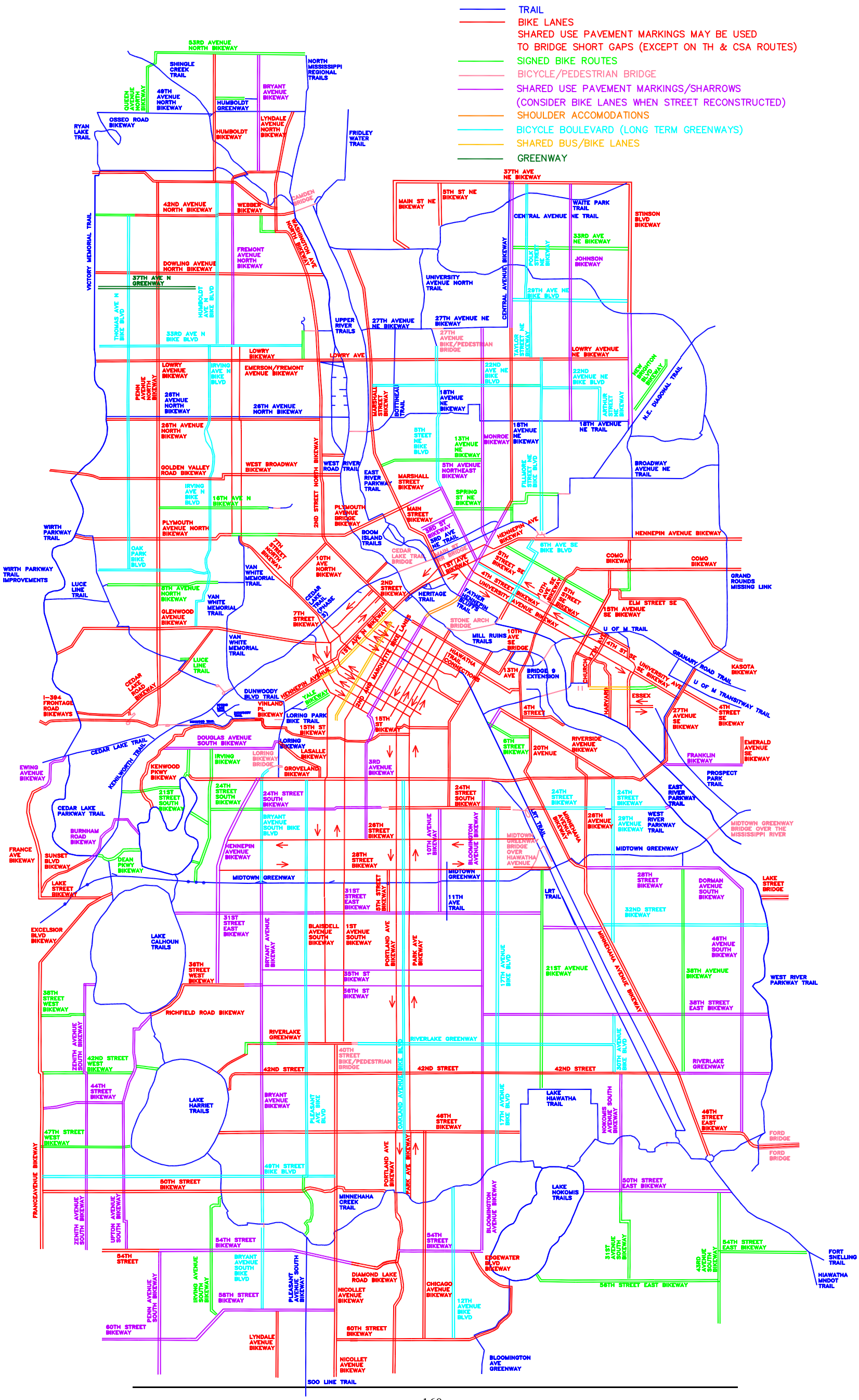


Figure 7.8 - Bikeways Master Plan (Off-Street Routes)

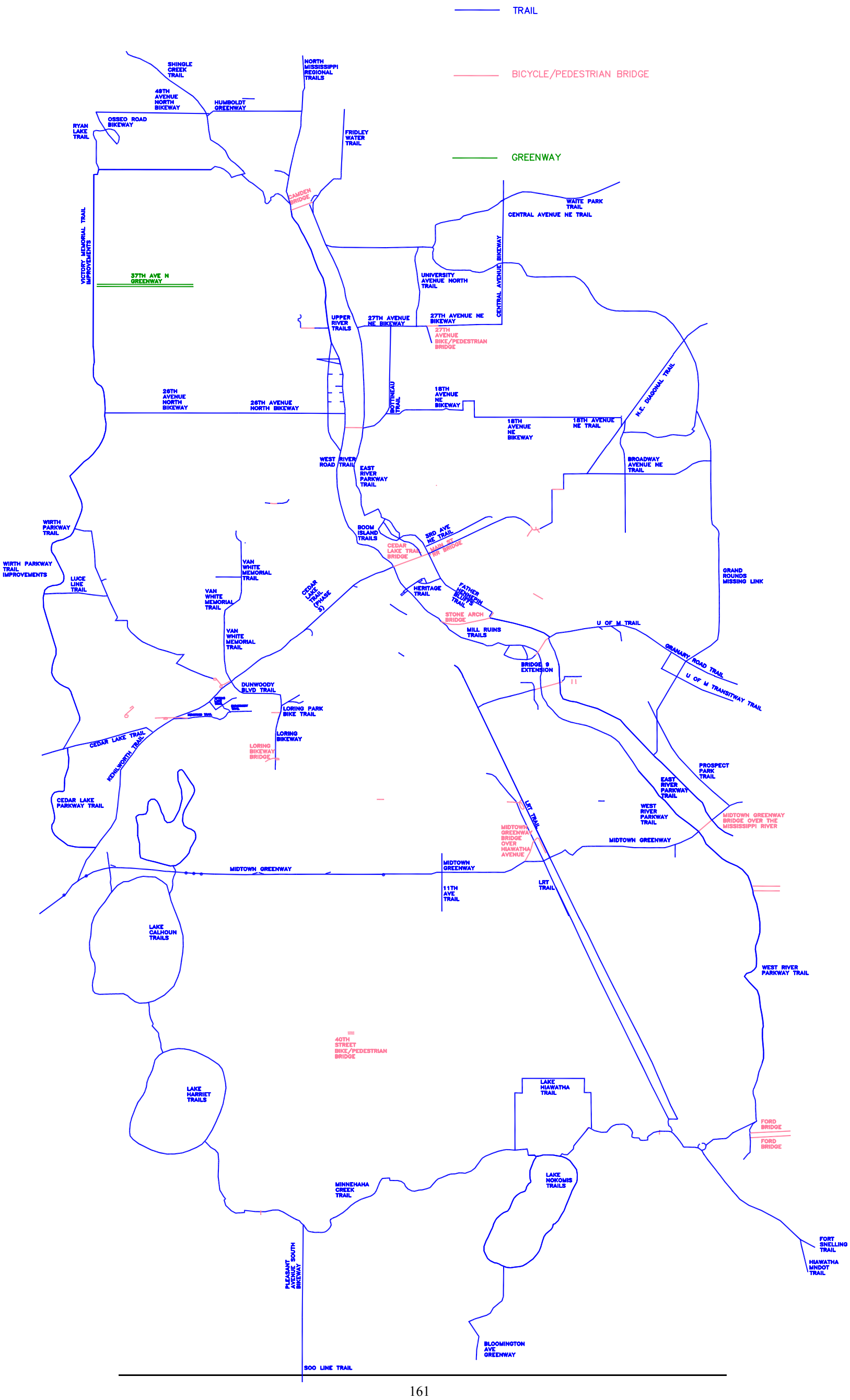
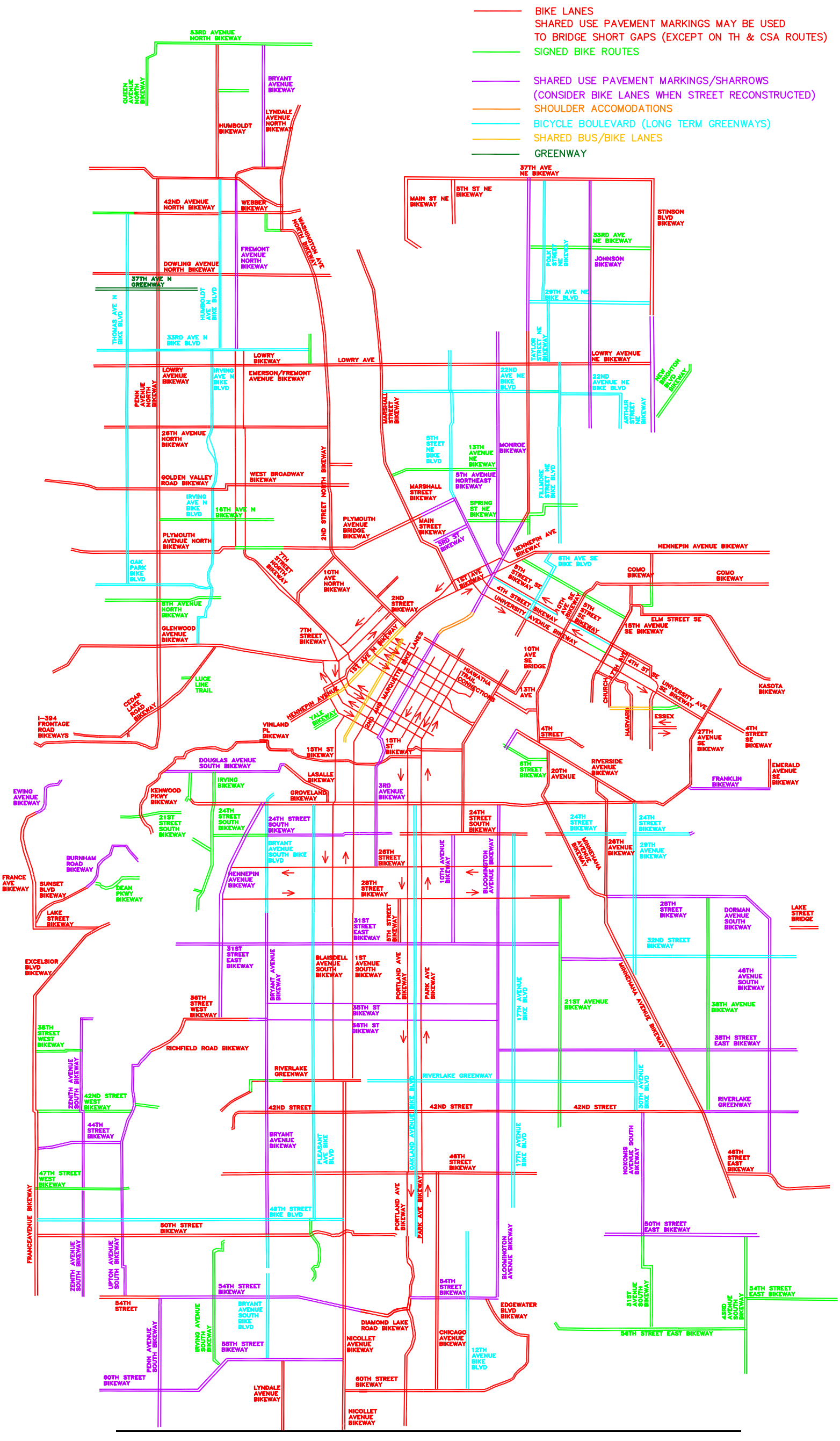


Figure 7.9 - Bikeways Master Plan (On-Street Routes)



7.2.7 Opportunity Projects—Opportunity projects consist of bicycle improvements that piggyback on other capital projects such as a mill and overlay project or total reconstruction project. The bicycle component is not the primary reason for the project and the timeline of the project is typically not dictated by the bicycle improvement. This type of project simply takes advantage of the opportunity to make conditions better for cyclists. Many on-street bike lane corridors fit into this category. In most cases on-street bike lanes can not be added to a given corridor unless geometric changes are made. Opportunity projects are designated in the project list.

Above: Minneapolis Diagonal Trail

7.2.8 Stand-Alone Projects—Stand-Alone projects are capital bicycle projects independent of other projects. The primary purpose of a stand-alone bicycle project is to improve bicycle safety and/or increase the number of bicyclists. Stand-alone infrastructure projects primarily consist of trails, bike lane striping projects, bicycle boulevard projects, trail enhancement projects, support facilities, and bicycle parking projects. Stand-alone projects can also be very large spot improvements such as improving an intersection. Stand-alone projects are typically added to the capital budget and must compete with other projects for funding, based on merit. Because of the high number of stand-alone projects, a fair and equitable prioritization system is needed. Small stand-alone projects may be batched with other like projects and put into a funding package to improve the chances of receiving money and to complete smaller improvements more quickly. Stand-alone projects are designated in the project list.

Above: Minneapolis Diagonal Trail

Above: Sharrow along 19th Avenue NE

7.2.9 Corridor Improvements—The Bikeways Master Plan reflects corridor improvements that span from one point in the city to another. Corridor improvements can be an off-street, trail, bike lane, or shared use facility. Examples of past corridor improvements include the Kenilworth Trail, the Richfield Road bicycle lanes, and the RiverLake Greenway. Corridor projects can also be maintenance projects such as a trail mill and overlay project or a crack-seal project. The Bikeways Master Plan does not address spot improvements or system-wide improvements. Examples of needed corridor projects found on the Bikeways Master Plan include the extension of Bridge #9 through the I-35W tunnel, completion of the Upper River Trails along the Mississippi, adding bicycle lanes to Harmon Place, and installing a bicycle boulevard on Pleasant Avenue South. All proposed Corridor Improvement Projects are identified in the project list.

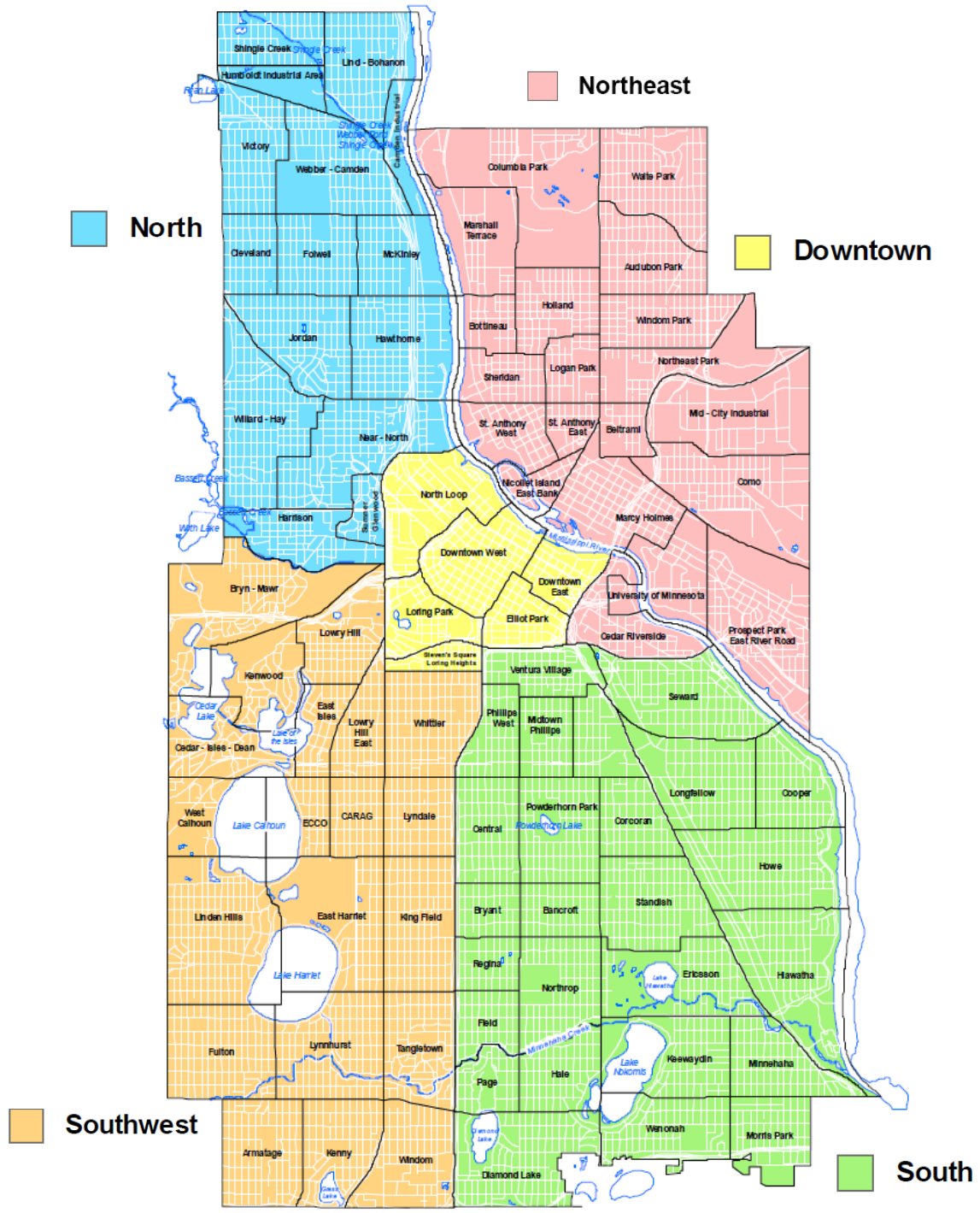
7.2.10 Spot Improvements—There are several infrastructure projects that pertain to one location. Typically these are roadway intersections or trail nodes that require some work to address a safety concern or to make bicycling more convenient. These projects also tend to have a lot of benefit for what the improvement costs. Examples of past spot improvements include the enhancements at 31st/Chowen along the Midtown Greenway, the Freewheel Bicycle Center, and the addition of bicycle parking at the Twins Ballpark. Examples of needed spot improvements include the development of a bicycle center at the University of Minnesota, adding bicycle parking to Central Avenue NE, and adding a ramp to the Midtown Greenway at Fremont Avenue. All proposed Spot Improvement Projects are identified in the project list

7.2.11 System-wide Improvements—Small capital projects that are similar in scope can be batched together to create a system-wide improvement. Batching small projects with a similar theme greatly increases the chances of receiving funding. Batching projects also accelerates the improvement timeline. Examples of needed system–wide improvements include the addition of bicycle parking at all schools, adding bicycle detection to all actuated signals, and installing way-finding signage along all bicycle routes. If projects can not be batched together to form a larger capital project, it is recommended that the improvement occur when the opportunity arises. For instance, the improvement may be done when a road is reconstructed, when a signal is replaced, or when an area is redeveloped. All proposed System-wide Improvement Projects are identified in the project list.

Above: Lake Nokomis Trail

7.2.12 Infrastructure Project List - The project list includes all proposed bicycle infrastructure projects within the City of Minneapolis. The project list is organized by area of the city. The project list denotes whether the project is an opportunity project or stand-alone project. The Bicycle Advisory Committee (BAC) will prioritize this list on a regular basis and will add new projects as needed. Their recommendations will be presented to the City Council for further action. Most projects identified are likely to be programmed after 2015.

Figure 7.10 – Project Areas



7.2.12 Infrastructure Project List - Continued

Table 7.4 - Downtown Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
D-1	2nd Street Gap	Hennepin Ave to Marquette	900	Both	Corridor	Stand-Alone
D-2	2nd Ave and Marquette Ave	2nd Street to 12th Street	10,380	On-Street	Corridor	Stand-Alone
D-3	3rd Avenue Bikeway	Mississippi River to 24th Street	9,023	On-Street	Corridor	Stand-Alone
D-4	5th/6th Street Bikeways	5th Avenue to 11th Avenue	10,410	On-Street	Corridor	Stand-Alone
D-5	13th Ave Gap	2nd Street to West River Parkway	970	On-Street	Corridor	Stand-Alone
D-6	Downtown Bike Lane Cleanup	9th St, Portland Ave, 10th St, 11th St, 12th St	12,865	On-Street	Spot	Stand-Alone
D-7	Dunwoody Blvd Trail	Lyndale Avenue to Cedar Lake Trail	2,900	Off-Street	Corridor	Stand-Alone
D-8	Groveland Ave/ Pillsbury Ave Bikeway	Lyndale Ave to Franklin Ave	2,760	On-Street	Corridor	Stand-Alone
D-9	Harmon Bike Lanes	Loring Park to 9th Street	1,600	On-Street	Corridor	Stand-Alone
D-10	Hennepin Avenue Extension	10th Street to Lyndale Avenue	2,700	On-Street	Corridor	Stand-Alone
D-11	Loring Bikeway Extension	I-94 Ramp to Lyndale Avenue	500	Off-Street	Corridor	Stand-Alone
D-12	U of M Trail Extension	Bridge 9 to 11th to 13th Avenue	1,200	Off-Street	Corridor	Stand-Alone
D-13	Washington Avenue Gap	11th Avenue to 19th Avenue	2,130	On-Street	Corridor	Opportunity
D-14	Yale Bikeway	Loring Park to 12th Street	1,200	On-Street	Corridor	Stand-Alone
Total			**59,538 ft (11.3 miles)**			

7.2.12 Infrastructure Project List - Continued

Table 7.5 - North Minneapolis Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
N-1	8th Ave N Bikeway	Luce Line to Van White Trail	5,040	On-Street	Corridor	Stand-Alone
N-2	16th Ave N Bikeway	Penn Avenue to Lyndale Ave	4,820	On-Street	Corridor	Stand-Alone
N-3	26th Avenue North Trail	Wirth Parkway to Mississippi River	10,760	Off-Street	Corridor	Opportunity
N-4	33rd Ave Bike Blvd	Victory Parkway to 3rd Street	8,850	On-Street	Corridor	Stand-Alone
N-5	37th Avenue North	Queen to Xerxes	2,305	On-Street	Corrdior	Stand-Alone
N-6	49th Ave N Trail	Osseo Road to Humboldt Avenue	5,065	Off-Street	Corridor	Opportunity
N-7	53rd Avenue Bikeway	Penn Avenue to I-94	6,700	On-Street	Corridor	Stand-Alone
N-8	Bryant Avenue Bike Lanes	45th Ave to 53rd Ave	5,720	On-Street	Corridor	Opportunity
N-9	Camden Bridge Approaches	Camden Bridge	1,225	Off-Street	Corridor	Stand-Alone
N-10	Humboldt Ave Bike Blvd/ Greenway	33rd Ave N to 44th Ave N	7,440	On-Street	Corridor	Stand-Alone
N-11	Golden Valley Road Bikeway	City Limits to Emerson Avenue	6,490	On-Street	Corridor	Opportunity
N-12	Irving Bike Boulevard/ Greenway	Olson Highway to 33rd Ave N	12,246	On-Street	Corridor	Stand-Alone
N-13	Knox Avenue Bike Boulevard	Olson Hwy to Glenwood Ave	1,839	On-Street	Corridor	Stand-Alone
N-14	Luce Line Extension	Plymouth Avenue to Hwy 55	3,515	Off-Street	Corridor	Stand-Alone
N-15	Lyndale Ave Bike Lane	41st Ave N to 49th Ave N	5,400	On-Street	Corridor	Opportunity

7.2.12 Infrastructure Project List - Continued

Table 7.5 - North Minneapolis Projects (Continued)

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
N-16	Oak Park Bike Boulevard	Luce Line to Irving Avenue	5,025	On-Street	Corridor	Stand-Alone
N-17	Osseo Road Trail	Ryan Lake Trail to 49th Ave N	1,580	Off-Street	Corridor	Opportunity
N-18	Queen Avenue North Bikeway	49th Avenue North to 53rd Avenue North	2,560	On-Street	Corridor	Stand-Alone
N-19	Penn Avenue Bikeway	I-394 Frontage Road to 44th Avenue	23,720	On-Street	Corridor	Opportunity
N-20	Ryan Lake Trail	Ryan Lake to Osseo Road	2,600	Off-Street	Corridor	Stand-Alone
N-21	Thomas Avenue Bike Boulevard	Oak Park Blvd to 42nd Avenue	15,865	On-Street	Corridor	Stand-Alone
N-22	Upper River Trails	BNSF Bridge to Camden Bridge	16,130	Off-Street	Corridor	Stand-Alone
N-23	Webber Parkway Bike Lane	Humboldt Avenue to Lyndale Avenue	2,275	On-Street	Corridor	Stand-Alone
N-24	West Broadway	Golden Valley Road to Mississippi River	5,238	On-Street	Corridor	Opportunity
Total			**162,408 ft (30.8 miles)**			

Above: Construction equipment along the RiverLake Greenway.

7.2.12 Infrastructure Project List - Continued

Table 7.6 - Northeast Minneapolis Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
NE-1	4th St S	19th Ave to West River Pkwy	2,146	On-Street	Corridor	Both
NE-2	4th St SE	1st Ave NE to Oak Street	4,980	On-Street	Corridor	Both
NE-3	4th St SE	25th Ave SE to City Limits	4,800	On-Street	Corridor	Stand-Alone
NE-4	5th Avenue NE	Main St to 5th St NE	1,795	On-Street	Corridor	Stand-Alone
NE-5	5th Street NE Bike Lanes	Columbia Parkway to 37th Ave NE	1,930	On-Street	Corridor	Opportunity
NE-6	18th Ave NE Trail	Washington Street NE to Stinson Blvd	8,790	Off-Street	Corridor	Opportunity
NE-7	27th Ave Bike Bridge	27th Ave N	1,040	Off-Street	Spot	Stand-Alone
NE-8	27th Ave NE Trail	Mississippi River to Central Ave NE	5,400	Off-Street	Corridor	Stand-Alone
NE-9	29th Ave Bike Blvd	Central Avenue to Stinson Blvd	5,300	On-Street	Corridor	Opportunity
NE-10	33rd Ave Bikeway	Central Avenue to Stinson Blvd	5,300	On-Street	Corridor	Opportunity
NE-11	37th Avenue NE Bike Lanes	Main Street NE to Stinson Blvd	8,526	On-Street	Corridor	Opportunity
NE-12	BNSF Corridor	Mississippi River	8,780	On-Street	Corridor	Stand-Alone
NE-13	Bottineau Trail	Marshall Street to 27th Ave NE	8,935	Off-Street	Corridor	Stand-Alone
NE-14	Cedar Lake Trail Bridge	Mississippi River Bridge	1,790	Off-Street	Corridor	Stand-Alone
NE-15	Church Street Bike Lanes	Washington Ave to U of M Trail	1,660	On-Street	Corridor	Opportunity
NE-16	Emerald Bikeway	University Ave to Franklin Ave	1,232	On-Street	Corridor	Opportunity
NE-17	Grand Rounds Missing Link	Elm to City Limits	10,650	Off-Street	Corridor	Stand-Alone

7.2.12 Infrastructure Project List - Continued

Table 7.6 - Northeast Minneapolis Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
NE-18	Hennepin Ave Bike Lane	Central to City Limits	11,975	On-Street	Corridor	Opportunity
NE-19	Hennepin Bike Bridge	Hennepin Ave NE	1,080	Off-Street	Spot	Stand-Alone
NE-20	Kasota Bike Lanes	Elm to City Limits	3,775	On-Street	Corridor	Opportunity
NE-21	Marshall Street Bike Lanes	37th Avenue to Broadway Avenue	13,688	On-Street	Corridor	Opportunity
NE-22	Minneapolis Diagonal Pavement Renovation	City Limits to Broadway, 18th Ave NE to Hennepin	11,725	Off-Street	Corridor	Stand-Alone
NE-23	Pleasant Ave SE	Washington Ave to Pillsbury Ave	1,542	On-Street	Corridor	Stand-Alone
NE-24	Spring Street Bikeway	5th Street NE to Johnson	5,110	On-Street	Corridor	Stand-Alone
NE-25	Stinson Blvd	37th Ave NE to NE Diagonal	10,955	On-Street	Corridor	Opportunity
NE-26	University Avenue Bike Lanes	TCF Stadium to 27th Ave NE	2,515	On-Street	Corridor	Opportunity
NE-27	Upper River Trails	Boom Island to Camden Bridge	13,475	Off-Street	Corridor	Stand-Alone
NE-28	Washington Avenue Gap	LRT Trail to Washington Avenue Bridge	3,025	Off-Street	Corridor	Stand-Alone
Total			**162,919 (30.9 miles)**			

Above: Construction equipment along the RiverLake Greenway.

7.2.12 Infrastructure Project List - Continued

Table 7.7 - Southwest Minneapolis Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
SW-1	24th Street South Bikeway	Hennepin to I-35W	6,190	On-Street	Corridor	Opportunity
SW-2	31st Street Bikeway	Lake Calhoun to I-35W	7,965	On-Street	Corridor	Opportunity
SW-3	35th/36th Street Bikeway	Bryant Avenue to I-35W	7,000	On-Street	Corridor	Opportunity
SW-4	36th Street Bikeway	Richfield Road to Bryant Ave	2,770	On-Street	Corridor	Stand-Alone
SW-5	42nd Street Bike Lanes	Lake Harriet to I-35W	6,090	On-Street	Corridor	Stand-Alone
SW-6	46th Street Bikeway	Lake Harriet to I-35W	6,060	On-Street	Corridor	Opportunity
SW-7	49th St Bike Boulevard	France to Nicollet	13,233	On-Street	Corridor	Opportunity
SW-8	50th Street Bike Lanes	France to I-35W	14,245	On-Street	Corridor	Opportunity
SW-9	54th Street/ Diamond Lake Bikeway	Penn to I-35W	8,790	On-Street	Corridor	Opportunity
SW-10	58th/60th Bikeway	City Limits to Nicollet	11,120	On-Street	Corridor	Opportunity
SW-11	Cedar Lake Parkway Trail Reconstruction	Wirth Parkway to Kenilworth Trail	8,320	Off-Street	Corridor	Stand-Alone
SW-12	Cedar Lake Trail Reconstruction	Highway 100 to Royalston Avenue	18,986	Off-Street	Corridor	Stand-Alone
SW-13	Douglas Ave Bikeway	Kenwood Parkway to Hennepin Ave	5,305	On-Street	Corridor	Stand-Alone
SW-14	Ewing Avenue Bikeway	22nd Street to Cedar Lake Parkway	2,013	On-Street	Corridor	Both
SW-15	Excelsior Blvd Bike Lanes	City Limits to Dean Pakway	4,518	On-Street	Corridor	Both
SW-16	France Ave Bike Lanes	54th to Excelsior Blvd	12,885	On-Street	Corridor	Opportunity

7.2.12 Infrastructure Project List - Continued

Table 7.7 - Southwest Minneapolis Projects (Continued)

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
SW-17	Franklin Avenue Bike Lane	Logan Ave to I-35W	8,815	On-Street	Corridor	Opportunity
SW-18	Fremont Avenue Ramp	Midtown Greenway Ramp at Fremont	400	Off-Street	Spot	Stand-Alone
SW-19	Irving Bikeway	58th to Minnehaha Parkway	5,367	On-Street	Corridor	Opportunity
SW-20	Kenwood Parkway	Loring Bikeway to Lake of the Isles	8,875	On-Street	Corridor	Stand-Alone
SW-21	Kenilworth Trail Reconstruction	Cedar Lake Trail to the Midtown Greenway	8,545	Off-Street	Corridor	Stand-Alone
SW - 22	Lake of the Isles Routes	21st St, Irving, Dean, 24th St, and Logan Ave	16,148	On-Street	Corridor	Stand-Alone
SW - 23	Lake Street	City Limits to Dean Parkway	2,756	On-Street	Corridor	Opportunity
SW-24	Linden Hills Signed Routes	38th St, 42nd St, 47th St	11,183	On-Street	Corridor	Stand-Alone
SW-25	Midtown Greenway Renovation (Includes Security System Upgrades)	Chowen Avenue to 5th Avenue	13,728	Off-Street	Corridor	Stand-Alone
SW-26	Nicollet Ave Bike Lane	40th St to City Limits	14,879	On-Street	Corridor	Opportunity
SW-27	Penn Ave Bike Bridge	Penn Ave LRT Station	500	Off-Street	Spot	Stand-Alone
SW-28	Pleasant Avenue Ramp	Midtown Greenway Ramp at Pleasant	400	Off-Street	Spot	Stand-Alone
SW-29	Pleasant Avenue Bike Blvd/ Greenway	Franklin to Minnehaha Creek	20,246	On-Street	Corridor	Stand-Alone

7.2.12 Infrastructure Project List - Continued

Table 7.7 - Southwest Minneapolis Projects (Continued)

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
SW-30	Soo Line Trail	Minnehaha Parkway to City Limits	27,020	Off-Street	Corridor	Stand Alone
SW-31	Upton/ Sheridan Bikeway	54th to Richfield Road	10,945	On-Street	Corridor	Opportunity
SW-32	William Berry Trail Reconstruction	Lake Harriet to Lake Calhoun	2,223	Off-Street	Corridor	Stand-Alone
SW-33	Zenith Ave Bikeway	54th to Lake Calhoun	12,200	On-Street	Corridor	Opportunity
Total			**299,750 ft (56.7 miles)**			

Above: Construction equipment along the RiverLake Greenway.

7.2.12 Infrastructure Project List - Continued

Table 7.8 - South Minneapolis Projects

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
S-1	10th Avenue Bikeway	24th Street to 31st Street	4,560	On-Street	Corridor	Opportunity
S-2	12th Ave Bike Blvd	Minnehaha Parkway to 60th St	6,460	On-Street	Corridor	Opportunity
S-3	17th Bike Blvd	Franklin Avenue to Minnehaha Parkway	15,695	On-Street	Corridor	Opportunity
S-4	21st Ave Bike Route	Midtown Greenway to 40th Street	9,830	On-Street	Corridor	Opportunity
S-5	29th Ave Bike Route	Franklin Avenue to Minnehaha	7,370	On-Street	Corridor	Opportunity
S-6	28th Street/Dorman Bikeway	Minnehaha Ave to 46th Ave	7,392	On-Street	Corridor	Opportunity
S-7	31st Street Bikeway	I-35W to 20th Avenue	16,390	On-Street	Corridor	Opportunity
S-8	11th Ave Trail	Andersen School to Powderhorn Park	2,632	Off-Street	Corridor	Stand-Alone
S-9	32nd Street Bike Blvd	20th Avenue to West River Parkway	7,302	On-Street	Corridor	Opportunity
S-10	35th and 36th Street	Bryant Ave to Bloomington Ave	9,920	On-Street	Corridor	Opportunity
S-11	38th Ave Bike Route	28th Street to 42nd Street	9,125	On-Street	Corridor	Opportunity
S-12	38th Street Bikeway	Bloomington to West River Pkwy	12,632	On-Street	Corridor	Opportunity
S-13	42nd Street Bike Lanes	Lake Harriet to Nokomis Avenue	24,609	On-Street	Corridor	Opportunity
S-14	46th Ave Bikeway	Dorman to 46th	10,762	On-Street	Corridor	Opportunity
S-15	46th Street Bike Lane	I-35W to Cedar Ave	7,100	On-Street	Corridor	Both
S-16	46th Street Bike Lane	Minnehaha Ave to City Limits	3,310	On-Street	Corridor	Opportunity

7.2.12 Infrastructure Project List - Continued

Table 7.8 - South Minneapolis Projects (Continued)

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
S-17	50th Street Bikeway	I-35W to Minnehaha Parkway	1,470	On-Street	Corridor	Opportunity
S-18	54th Bikeway	Portland Ave to Bloomington Ave	3,850	On-Street	Corridor	Opportunity
S-19	60th Street/ Cedar Frontage Road Bike Lanes	Nicollet Avenue to Lake Nokomis	8,764	On-Street	Corridor	Opportunity
S-20	Bloomington Bikeway	Franklin Avenue to 54th Street	20,950	On-Street	Corridor	Opportunity
S-21	Bloomington Avenue Ramp	Located at the Midtown Greenway	400	Off-Street	Spot	Stand-Alone
S-22	Chicago Ave Bike Lanes	46th Street to 60th Street	9,269	On-Street	Corridor	Opportunity
S-23	Diamond Lake Road Bike Lanes	I-35W to Portland Ave	2,015	On-Street	Corridor	Both
S-24	Edgewater Blvd	54th St to Cedar Ave	2,570	On-Street	Corridor	Opportunity
S-25	Franklin Avenue Bike Lanes	I-35W to Minnehaha	6,459	On-Street	Corridor	Opportunity
S-26	Hiawatha Trail East	32nd Street to 46th Street on the east side of Hiawatha	13,011	Off-Street	Corridor	Stand-Alone
S-27	Hiawatha Trail Lighting	11th Avenue to 28th Street	-	Off-Street	Corridor	Stand-Alone
S-28	Lake Hiawatha Trail	Around Lake Hiawatha	9,250	Off-Street	Corridor	Opportunity
S-29	LRT Station Area Improvements	Improvements to/from Cedar Riverside, Franklin, Lake, 38th, 46th, and 50th Street Stations	-	On-Street	Spot	Stand-Alone
S-30	LRT Trail Gap	28th Street to 32nd Street	5,882	Off-Street	Corridor	Stand-Alone

7.2.12 Infrastructure Project List - Continued

Table 7.8 - South Minneapolis Projects (Continued)

ID #	Project Name	Project Limits	Length (FT)	On-Street or Off-Street	Corridor, Spot, or System-wide	Opportunity or Stand-Alone Project
S-31	Midtown Greenway Renovation (Includes Security System Upgrades)	5th Avenue to Mississippi River	13,728	Off-Street	Corridor	Stand-Alone
S-32	MG Bridge over the River	Midtown Greenway Bridge over the Mississippi River	2,242	Off-Street	Spot	Stand-Alone
S-33	MG Bloomington Ramp	Midtown Greenway Ramp at Bloomington	400	Off-Street	Spot	Stand-Alone
S-34	Nokomis Bikeway	42nd Street to 50th Street	5,210	On-Street	Corridor	Opportunity
S-35	Nokomis Signed Routes	31st Ave S, 43rd Ave S, 54th St E, 56th St E Bikeway	5,611	On-Street	Stand-Alone	Opportunity
S-36	Oakland Bike Lane	Franklin to Minnehaha Parkway	20,240	On-Street	Corridor	Stand-Alone
S-37	Portland Ave Bike Lanes	Minnehaha Creek to City Limits	8,340	On-Street	Corridor	Opportunity
Total			**281,022 ft (53.2 miles)**			

Above: Bicyclists near Lake Harriet.

7.3 Infrastructure Prioritization

7.3.1. Criteria—In order to ensure fairness, striving for a citywide system approach, and to focus on projects suitable for the bicycle program, the proposed criteria have been developed to help the BAC with reviewing stand-alone projects, ranking the projects, and advising the city on what projects to submit funding requests for. The criteria support each of the 3 goals in Chapter 6.

Goal #1 – Increase bicycle mode share:

- Numbers/trips: Is the project expected to increase the number of people bicycling and/or increase the number of trips taken by bicycle?
- Travel Demand: Does the project meet or help create a demand for bicycling in population and employment concentrations, with a focus on high trip generation areas? Is the project anticipated to serve travel needs in all seasons?

Goal #2 – Bicycling in Minneapolis is safe and comfortable:

- Safety, Appeal: Does the project provide a safer and more appealing alternative to what currently exists in a given corridor?

Goal #3 – Destinations in Minneapolis are reasonably accessible by bicycle:

- Barriers/Gaps: Does the proposed project supplement the existing bicycle system by removing barriers and closing system gaps?
- Geographic Equity: Does the proposed project supplement the existing bicycle system by removing barriers and closing system gaps?
- Demographic Equity: Does the proposed project serve populations with lower than average rates of bicycling? Considerations will include race/ethnicity, class, gender and age.
- Regional Benefit: Does the project connect Minneapolis to surrounding communities and facilitate the ability to take longer trips by bicycle?
- Access to Popular Destinations: Does the project provide bicycle access to popular destinations such as schools, parks, and public spaces (such as museums, theatres, community centers, government buildings, and shopping districts)?

Above: A bicyclist using bike lanes on Roseway Road

7.3.1 Criteria (Continued)

Additional Criteria

- Timeliness: Is the project timely and will it be ready for construction in the funding cycle? Timeliness will depend on external factors such as redevelopment projects, street reconstructions, availability of external funds and timelines from funding sources. Project readiness will depend on internal factors such as planning, design, right-of-way acquisition, and City funding.
- Cost Effectiveness: Is the project cost effective? How much will each project cost, how many users will it benefit and what level of safety and convenience benefit will it provide to users? Are the operations and maintenance responsibilities defined? Are there differences between projects in the ability to maintain the facility over time? Does the project leverage funding from external sources?
- Adopted Plan: Is the project part of an approved regional, city, agency or neighborhood plan?
- Public Support: Has there been or is there public outreach planned for the project? What is the level of community support for the project?
- Innovation: Does the project allow the City to pilot a new approach or design element to improve safety, comfort and/or accessibility that is not currently used in Minneapolis? Does the project incorporate a successful approach that has been tried in other cities but not used in Minneapolis?

Above: Stone Arch Bridge

7.3.2 Bicycle Functional Classification—Bicycle functional classification can be used as a tool to help prioritize stand-alone bikeway projects. Many of the qualifying and prioritizing criteria including system connectivity, travel demand, cost effectiveness, operations/maintenance, regional benefit, regional equity, and access to destinations can be graphically portrayed. By assigning designations for every bikeway in the 2010 Bikeways Master Plan, limited resources can be applied appropriately. Modeled after roadway functional classification, corridors within each travelshed are assigned as arterial bikeways, collector bikeways, and neighborhood bikeways. It is important not to confuse roadway functional classification with bicycle functional classification as many arterial bikeways are located on collector streets and some collector bikeways are located along minor arterial roads.

Travelsheds: Travelsheds are geographic zones that are bound by significant barriers such as freeways, rivers, and railroads. Travelsheds are oriented to fan out from Downtown Minneapolis like slices of pie. Travelsheds ensure that all parts of the city are treated equally and that the bikeway network maximizes mobility/accessibility.

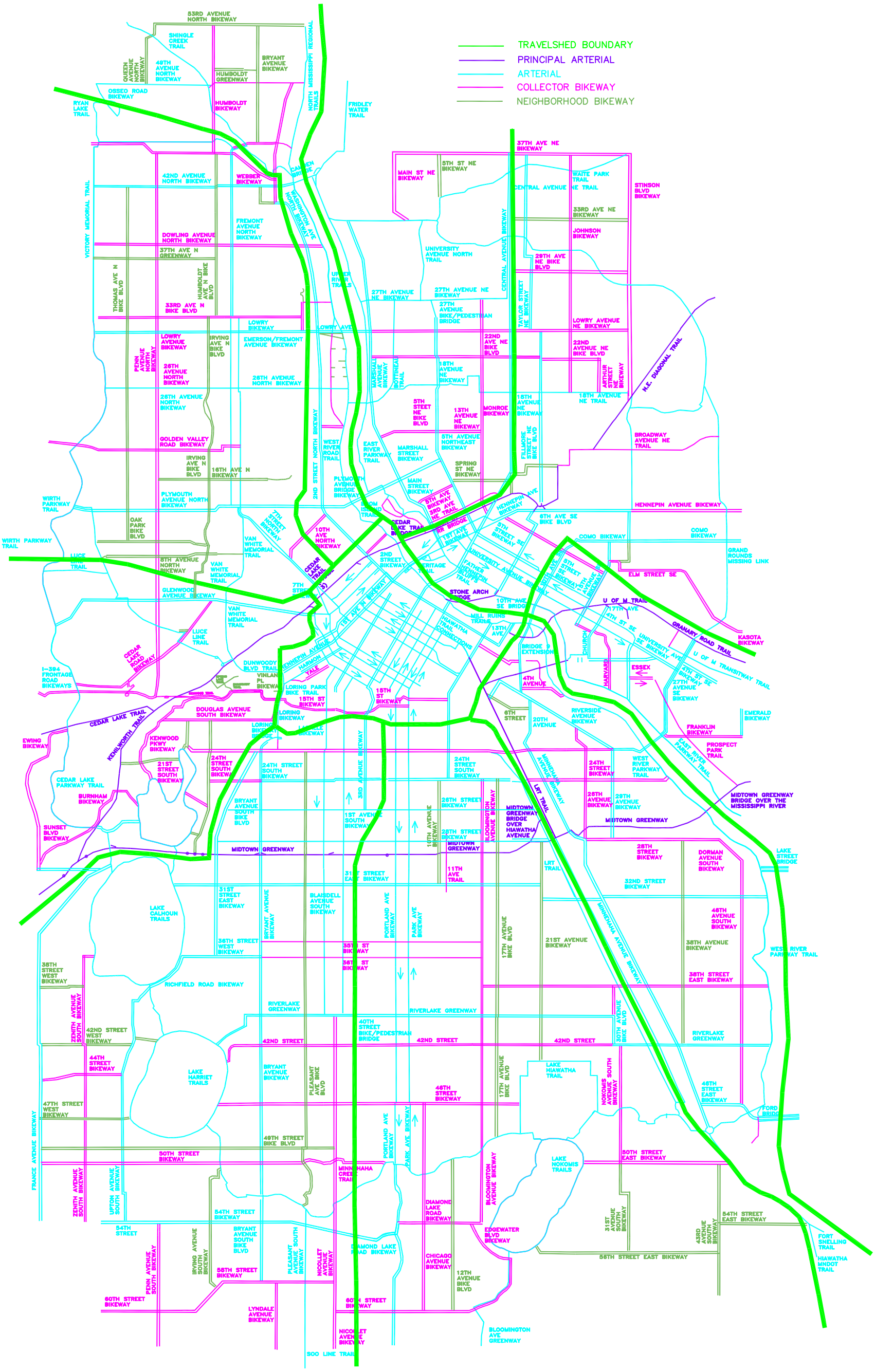
Arterial Bikeways: Arterial bikeways have regional significance and attract the highest numbers of bicyclists. Principal arterial bikeways are like freeways with grade separation corridors and faster speeds. Principal arterial bikeways should be spaced about 2 miles apart with minor arterial bikeways spaced 1 mile apart. It is also important that each travelshed include at least one arterial bikeway. Ideally arterial bikeways should form a spider web throughout the city, crossing travelsheds and becoming the spine for the bikeway network. Since different types of bikeways accommodate different bicyclists' needs, there may be situations where arterial bikeways are located on two parallel routes within close proximity. Due to limited resources, the strategy is to maintain arterial routes at a high standard, but give lesser attention to collector and neighborhood bikeways.

Collector Bikeways: Collector bikeways feed into arterial bikeways similar to how smaller rivers flow into larger ones. Collector bikeways should be spaced about 1/2 mile apart to capture bicyclists in every part of the city.

Neighborhood Bikeways: Neighborhood bikeways feed into collector routes and can be found in just about every neighborhood. Neighborhood bikeways are intended to provide local connections and are not eligible for regional funding.

Above: Lake Calhoun is a popular place to bike on nice days.

Figure 7.11 - Bicycle Functional Classification



7.4 Non-Infrastructure Initiatives

7.4.1 Non-Infrastructure Initiatives - In addition to the selected initiatives identified in Chapter 6, there are a number of new initiatives that have been identified in each of the six "E" categories.

Above: One of the Bicycle and Pedestrian Ambassadors helps a student with a bike.

7.4.2 Non-Infrastructure Initiatives (Education) - Below are some moderate to high cost/high benefit education initiatives that are likely to result in higher bicycle mode share and increased safety:

- Create radio and television public service announcements. Topics could include bicycle helmet safety, sharing the road, and following bicycling laws. (ED-8)
- Use utility bill inserts to reach residents. (ED-9)
- Purchase on-line advertising space. (ED-10)
- Rent local billboards to send messages to both bicyclists and motorists pertaining to bicycle safety and following the rules of the road. (ED-11)
- Hire a marketing firm to help promote bicycling and bicycle safety. (ED-12)

Below are some low cost/high benefit education initiatives:

- Work with local television stations and newspapers to run stories on biking. Topics can vary widely from bicycle safety to tourism. Using local media outlets is perhaps the best way to reach the highest number of people with the least amount of money. (ED-13)
- Support on-line tools such as Cyclopath that help bicyclists plan their trip. Cyclopath also features the ability for bicyclists to share real-time information about bike routes with other bicyclists. (ED-14)
- Work with local businesses and neighborhood groups to distribute free educational materials at point of sale. Businesses could sponsor an educational initiative or may even offer discounts or promotions to those who bike. For example, Minneapolis Police officers have distributed coupons for free ice cream to kids when they spot good bicycling behavior such as wearing a helmet. A local restaurant sponsored the promotion. (ED-15)
- Support programs such as earn-a-bike where teens learn how to work on donated bikes and are rewarded with a bike of their own. (ED-16)
- Create videos for educational purposes. Topics could vary widely from videos on bicycle commuting tips to bicycle safety videos. It is recommended that bicycle education videos be conducted in Spanish, Somali, and Hmong to reach the majority of non-English speakers in Minneapolis. (ED-17)
- Expand the number of bicycle rodeos throughout the city. Many bicycle friendly cities have created obstacle courses or "street skills bicycle education areas" to teach young bicyclists how to interact with traffic before actually biking on the streets. These could be placed at several school playgrounds or parks throughout the city. (ED-18)

7.4.3 Non-Infrastructure Initiatives

(Encouragement) —Encouragement initiatives can often provide quick results at minimal cost. Non-profit groups, neighborhood groups, and volunteers often take the lead with encouragement related initiatives.

Above: A booth at an event

Below are some low cost/high benefit encouragement initiatives that may result in higher bicycle mode share and increased safety:

- Have a bicycle kit giveaway including a bike light, patch kit, and local bike map. (ENC-7)
- Encourage bicycle commuting contests between businesses or schools. (ENC-8)
- Encourage more contests with a bicycle theme. (ENC-9)
- Encourage employers to conduct commuter fairs. (ENC-10)
- Implement Ciclovia, where streets are closed to motorized vehicles on Sundays and opened up to non-motorized users. (ENC-11)
- Provide U-Lock discounts through a 50/50 public-private partnership. A bicyclist gets a bike lock 50% off and the remaining 50% is funded through grants or corporate sponsorships. (ENC-12)
- Promote a membership club similar to AAA where a bicyclist pays an annual fee to have access to basic maintenance services at local bicycle shops. For an increased fee a bicycle repair maintenance crew could be sent to either pick up a bicyclist or repair the bike on-site. (ENC-13)
- Continue to improve the City of Minneapolis bicycle program website. The website includes a calendar of events, maps, safety tips, and project updates.
- Expand bike to work activities/incentives. (ENC-14)
- Encourage youth to participate in bike trips abroad through private scholarships. (ENC-15)
- Start an amateur bike race for the general public. This can be done as part of the existing June racing events on a closed course and could include cash and prizes (from corporate and private sources) for the top racers. (ENC-16)
- Create a children's bike map. (ENC-17)
- Commission a public art mural with a bicycle theme. There are currently a handful of bicycle murals on private property throughout the city. (ENC-18)
- Pursue a BAC exchange where members travel to other cities to learn about bicycle infrastructure. (ENC-19)
- Continue bicycle giveaways. In the past, Bicycling Magazine and Shimano partnered in the Bike Town program where bicycles were given away to dozens of local residents who committed to riding a bike. (ENC-20)
- City and county employees could use a fleet of bicycles to conduct work that is currently done using a motor vehicle. The city could contract with Nice Ride Minnesota to use bicycles to conduct their business. (ENC-21)

7.4.4 Non-Infrastructure Initiatives (Enforcement) —Below are some low cost/high benefit initiatives that will result in higher bicycle mode share and increased safety:

- Expand the bike bait program to deter thieves. Modeled after the DNR program to catch deer poachers, a high quality bike is cable locked to a bike rack. When a thief clips the cable, officers are waiting to apprehend the individual. Cameras are often used to document the crime and for prosecution. (ENF-5)
- When a bicyclist is pulled over by officers for not having a bicycle light, first time offenders should be given a warning and a complimentary bike light. Other bicycle law offenses should also result in the distribution of educational literature. (ENF-6)
- Multiple bicycle law offenses (by either bicyclists or drivers) should result in having to take a bicycle safety education course. Coordination between the city and the courts would be needed to ensure success. (ENF-7)
- Encourage officers to patrol trails by bicycle instead of by squad car. (ENF-8)
- Increase the cost of a ticket for moving violations pertaining to bicycle laws (for both bicyclists and drivers). (ENF-9)
- Work with the Minneapolis Police Department, U of M Police Department, and MPRB Police to establish a program where all precincts have officers patrolling the streets by bicycle. Currently only a couple of precincts use bicycle officers on a regular basis. (ENF-10)
- Expand Police Department involvement in the Safe Routes to School program. Officers can play an integral role in the education of children, especially when trying to install good habits at a young age. Grant funding could be secured to supplement the Police budget. (ENF-11)
- Utilize the Downtown Improvement District (DID) employees to combat bicycle theft and to help educate the public about bicycle laws. (ENF-12)
- Work with the local truck unions, shipping handlers, and postal employees to reduce the amount of stopping/parking in bicycle lanes. Currently much of this behavior is tolerated by the police and is not enforced. (ENF-13)
- Create targeted enforcement and educational initiatives that focus on specific bicycle law violations including riding a bicycle on a sidewalk in a commercial district, motorists not abiding by the 3-foot passing law, riding a bicycle without a light at night, motorists parked/stopped in bike lanes, and vehicles speeding along corridors with marked bicycle lanes. (ENF-14)
- Expand the citizen watch patrol program along the Midtown Greenway and LRT Trail where Police officers work directly with residents to monitor trails. Residents who volunteer in shifts would be given the training and tools to help prevent assaults/robberies. Watch volunteers could also be trained in first-aid and could be trained in conflict resolution. The perception that Minneapolis trails are not safe is a huge barrier for many who are contemplating bicycling as a mode of transportation. (ENF-15)

7.4.5 Non-Infrastructure Initiatives (Engineering) –

Above: Bike Racks at the Green Institute

Below are some ideas for systematic improvements within the city:

- Several trail crossings need crosswalk improvements, signals improvements, and curb cut improvements. All trail crossings need to be evaluated. Trail crossings in need of correction could be systematically improved. (ENG-13)
- Add bicycle curb cuts to all existing cul-de-sacs and diverters. (ENG-14)
- Replace manhole covers and storm sewer grates. (ENG-15)
- Install shared use pavement markings (sharrows) and wayfinding signage on all corridors that have been identified on the Bikeways Master Plan Map as on-street routes. There are several corridors that have been identified for future bike lanes, but existing conditions will not allow them. Installing sharrows as a temporary measure (until bike lanes can be installed as part of a reconstruction project) will help improve safety and mode share. (ENG-16)

Below are some spot improvement ideas:

- Implement crash reduction program where individual intersections with high numbers of bicycle crashes are evaluated and needed countermeasures implemented. A top 10 list is used to prioritize spot improvements. (ENG-17)
- Continue the Bikeways Cleanup Project, which corrects substandard bicycle facilities at specific locations. Add wayfinding kiosks at the intersection of two regional trails and at trail access points. (ENG-18)

Below are some moderate to high cost/high benefit ideas that will result in higher bicycle mode share and increased safety:

- Create a network of “greenways” or “green streets” where roadways are converted to bicycle and pedestrian only corridors. Milwaukee Avenue is a good example of this concept. “Greenway” corridors may be constructed in collaboration with stormwater management projects. Care must be taken to ensure that the street grid is not severely compromised. (ENG-19)
- Continue to expand the network of “bicycle boulevards”, which are traffic calmed streets that give preference to bicycles and pedestrians. (ENG-20)
- Complete the regional trail system in Minneapolis. Although most of the regional system is complete, there are still several projects that are needed in North Minneapolis, Northeast Minneapolis, and south of Minnehaha Parkway. There are also a handful of trail projects that connect to surrounding first ring suburbs. As the arterial trail system is completed, attention needs to shift to completing the on-street bikeway system. Increasing the density of both on-street and off-street bicycle facilities is a commonly used strategy amongst bike friendly cities to create higher bicycle mode share and increased safety. To conserve on capital and maintenance funding, it has been determined that trails should be installed at a 2 mile spacing interval and on-street bike lanes should be installed at a 1 mile spacing interval. (ENG-21)

7.4.5 Non-Infrastructure Initiatives (Engineering) - Continued

Above: Midtown Greenway at 5th Avenue

- Expand the bike share program to include kiosk locations throughout the entire city. (ENG-22)
- Increase preventative maintenance for trails and improve maintenance along streets with bicycle facilities, especially in winter. (ENG-23)
- Continue to evaluate infrastructure needs and implement infrastructure improvements around schools as part of the Safe Routes to School Initiative. (ENG-24)
- Encourage private developers to construct a bike station in Downtown Minneapolis. (ENG-25)

Above: Hennepin Avenue Bridge

Low cost/high benefit initiatives can often be implemented more quickly than more expensive initiatives that usually require more coordination and fundraising. Below are some additional low cost/high benefit ideas that will result in higher bicycle mode share and increased safety:

Above: Lowry Avenue North

- Explore "green wave" corridors where signals along major bike routes are timed based on the speed of a bicycle instead of motor vehicle speeds. (ENG-26)
- Install bike racks at all schools, parks, and public buildings that do not have them. Replace old or dysfunctional racks. (ENG-27)
- The 50/50 cost share program for bicycle racks. adds hundreds of bicycle parking spaces per year in front of businesses, churches, and neighborhood offices. Continue to allow creative/artistic styles to be placed in the public right-of-way. (ENG-28)
- Ensure that bicycle lanes are considered as part of reconstruction (entire right-of-way is improved) project per the Bikeways Master Plan Map. Renovation (mill and overlay) projects may also present opportunities for adding bicycle facilities. (ENG-29)
- Continue to work with all transit providers to ensure that all transit vehicles have bike racks, especially with opt-out providers. (ENG-30)
- Replace non-conforming signs and pavement markings. (ENG-31)
- Implement bicycle detour routes and install wayfinding signage and/or a trail bypass when a corridor is under construction. (ENG-32)

7.4.6 Non-Infrastructure Initiatives (Equity)

To ensure geographic equity, the following areas have been targeted for improvement:

- Regional trail connections are lacking in North Minneapolis, NE Minneapolis, and south of Minnehaha Parkway. (EQ-4)
- Expand the bike share program beyond Downtown, Uptown, and U of M. (EQ-5)

To ensure demographic equity, the following areas have been targeted for improvement:

- Create cycling programs for children and seniors. (EQ-6)
- The ratio of men to women cyclists is currently 2:1. Projects and initiatives need to consider how to remove bicycling barriers for women. (EQ-7)
- Making bicycling appealing for minority communities, especially for those whose primary language is not English. (EQ-8)

To ensure modal equity the following areas have been targeted for improvement:

- All street reconstruction projects and improvements in the public right-of-way need to consider how to accommodate bicycles per the Bikeways Master Plan Map. (EQ-9)
- The public and elected officials need to be presented with various trade-offs when deciding upon a roadway cross-section. (EQ-10)

Above: 49th Avenue North Trail

7.4.7 Non-Infrastructure Initiatives (Evaluation)

Above: Nicollet Mall

- Monitor the number of students biking to school at all schools throughout the city. (EV-11)
- Count the number of bicyclists using parkways and parkway trails. (EV-12)
- Continue to conduct bicycle parking counts in on a quarterly basis. (EV-13)
- Create more opportunities for public suggestions. Advertise 311 to bicyclists. (EV-14)
- Continue Results Minneapolis and Sustainability Reporting. Miles of trails, miles of bicycle lanes, and number of crashes are currently monitored and evaluated. (EV-15)
- Continue to work with Colleges/Universities to conduct research projects. (EV-16)
- Work with other agencies to install and evaluate innovative bicycle treatments. (EV-17)
- Work with other agencies to determine system-wide crash trends and create a combined strategy to reduce crashes including the Toward Zero Deaths initiative. (EV-18)
- Work with local hospitals and emergency rooms to track the type and severity of bicycle injuries. Local hospitals may be able to help educate the public about preventing injuries and may have resources to help with these efforts. (EV-19)
- Obtain insurance data to supplement police reports to better monitor property damage. (EV-20)
- Perform bicycle counts at all local Colleges and Universities including MCAD, Minneapolis Community Technical College, Dunwoody Institute, Augsburg College, Capella University, and the University of St. Thomas. The University of Minnesota is the destination for 25% of all bicyclists in the city. The U of M count program should also be expanded. (EV-21)

Above: Shaun Murphy and his dog Jefferson

7.5 Non-Infrastructure Prioritization

Above: Sidewalk marking in Uptown

7.5.1 Criteria – The criteria for non-infrastructure initiatives are similar to infrastructure project criteria, but focus on program initiatives and not facilities. The criteria support each of the 3 goals in Chapter 6.

Goal #1 – Increase bicycle mode share:

- Numbers of people impacted: How many people does the initiative serve?
- Behavior change: Can people relate to the message? Will the initiative result in more people riding a bicycle and fewer people driving alone?

Goal #2 – Bicycling in Minneapolis is safe and comfortable:

- Safety, Appeal: Will the initiative result in fewer crashes, injuries, and fatalities? Will people take the message seriously?
- Behavior change: Does the initiative provide a positive message that promotes bicycle safety? Is the message effective enough to change habits?

Goal #3 – Destinations in Minneapolis are reasonably accessible by bicycle:

- Targeted marketing: Does the initiative affectively reach out to the targeted group? Are there targeted groups or geographic areas inadvertently left out?
- Behavior change: Will the initiative result in better accessibility to information? Will the message be remembered or forgotten?

Additional Criteria:

- Timeliness: Is the initiative timely based on community need and political will? Bicycle initiatives need to be ready to take advantage of funding when it becomes available.
- Cost Effectiveness: Is the initiative cost effective? How many people does the initiative reach for the money spent? Does the initiative leverage funding from external sources?
- Adopted Plan: Is the initiative part of an approved regional, city, agency or neighborhood plan?
- Public Support: Has there been or is there public outreach planned for the initiative? What is the level of community support for the initiative?
- Innovation: Does the initiative allow the City to try something different? Does the initiative incorporate a successful approach that has been tried in other cities but not used in Minneapolis?

Chapter 8 - Introduction

8.1 Chapter Overview

Above: Public art along the Midtown Greenway

8.1.1 Discussion—The Minneapolis Bicycle Program has had tremendous success in attracting new bicyclists and reducing the bicycle crash rate. Past bicycle program success has been due in large part to the cooperation of public agencies including the U of M, the Minneapolis Park and Recreation Board, Three Rivers Park District, MnDOT, and Hennepin County in addition to the work of several non-profit groups advocating for bicycle funding, community involvement, and good urban design.

To date, the bicycle program strategy has been to focus on arterial trails first with on-street connections to the arterials second. This strategy has produced significant results in terms of attracting new bicyclists and providing popular routes that are separated from motor vehicles. Significant federal investment through the Non-Motorized Transportation Pilot (NTP) Program has supplemented the existing capital budget, resulting in several miles of new trails, bike lanes, and bicycle boulevards. From 2000 to 2009, total bikeway mileage in the city increased from 95.5 miles to 127.8 miles, contributing to bicycle commute work trips doubling from 1.9% in 2000 to 3.8% in 2009 based on Census statistics. In terms of capital funding, over $50 million was spent between 2000 and 2009. Over $284 million worth of bicycle projects have been identified in this plan ($134 million total excluding the Grand Rounds completion) in addition to $3 million dollars worth of non-infrastructure initiatives. If all of the projects listed in this plan are to be completed by 2040, then $9.8 million per year will need to be secured to keep pace with that goal. When completed, $1.8 million will be required on an annual basis to operate and maintain the bikeway system. An additional $2.6 million per year will be needed to implement all of the suggested non-infrastructure initiatives. The pace in which bicycle projects and initiatives can realistically be implemented in the future will be based on available funding. Current economic conditions have resulted in revenue reductions, which have presented difficult choices for local communities, including Minneapolis. State cuts in Local Government Aid have resulted in significant maintenance budget reductions. These budget challenges present an opportunity to re-evaluate project/initiative priorities and to pursue innovative funding arrangements. Many of the initiatives listed in this plan are intended to be funded with private dollars and not funded with public dollars.

Although there are many benefits to bicycling (including personal health, air quality, reduced congestion, reduced traffic damage to roadways, reduced expenditures on motor vehicles/fuel, increased livability, and increased bicycle-related tourism), this chapter will focus on the costs.

8.1.1 Discussion – Continued

Above: 18th Ave NE Trail in winter

The implementation of this plan will include the funding and construction of a variety of new bike lanes, bicycle boulevards, and trails. The cost for these projects varies widely depending on whether they are completed independently or in coordination with other maintenance and reconstruction efforts.

Acquisition costs, engineering challenges, or unanticipated conditions may drive the budget for a project beyond what was originally projected. The list below gives a general sense for the cost to implement various types of infrastructure:

- Off-street Trails – Approximately. $3 million/mile
- Bicycle Boulevards – Approximately $100,000 - $500,000 per mile
- Bike lanes – Approximately. $30,000 - $50,000 per mile

Each type of infrastructure has advantages and disadvantages. For example, bike lanes can be implemented quicker and cheaper than trails. Although off-street trails take longer to plan and cost more, trails appeal to a broader range of people and can function as bicycle freeways.

This chapter examines funding and implementation strategies that pertain to both capital and maintenance programs. The goals/objectives/benchmarks in Chapter 6 will only be met if the resources to pursue them are identified. Much of this chapter focuses on the identification of existing funding sources for both infrastructure projects and non-infrastructure initiatives.

8.2 Capital Program Funding

8.2.1 Infrastructure Funding Sources—Many infrastructure funding sources require a local match or have other conditions that go with the funding. It usually takes multiple funding sources to fully fund a bicycle infrastructure project. Some of the most common capital funding sources are:

Federal Funding—Federal SAFETEA-LU Surface Transportation Program (STP) funds and Federal Transportation Enhancement (TE) funds have been used to fund most major trail projects in Minneapolis. The program is administered by the Metropolitan Council and MnDOT. The Transportation Advisory Board of the Metropolitan Council awards projects on a bi-annual schedule and MnDOT supervises project construction. Most federal STP and TE projects in the Twin Cities region require a 20% match plus design/engineering fees to be paid with local sources. Based on past projects it takes 65 cents of local money to match a dollar in federal funding when factoring in all project costs. Once a project is awarded funding it is programmed 5 years into the future for construction.

8.2.1. Infrastructure Funding Sources - (Continued)

Federal Earmarks—In the past, members of Congress have been allowed to set aside funding for special projects in their district. It appears that this funding option has been terminated, however there is still discussion about restoring the practice in a more competitive manner. The Midtown Greenway, Cedar Lake Trail, and Martin Sabo Bridge have all received earmarks in the past.

Federal One-Time Programs—The Non-Motorized Transportation Pilot Program and TIGER grants are two examples of recent federal programs that have appropriated significant funding toward bicycle projects in a number of cities. Rules on how to spend the funds vary widely and the funding opportunities typically do not reoccur.

State Bonds—On a bi-annual basis, the State of Minnesota creates a bonding bill with specific projects and programs included. There is typically no funding match needed, however there may be other conditions applied to this funding by the legislature.

DNR Funding—The Department of Natural Resources (DNR) administers a number of grant programs including the Local Trail Connections Program and Regional Trail Grant Program. The DNR administers yearly solicitations for projects to be built within a year of the award date.

Legacy Funding—This new funding source was created when voters passed a sales tax referendum to improve the outdoors and the arts. There is a yearly solicitation for trails and the program is administered by the DNR.

Net Debt Bonds—Net Debt Bonds are local property tax funds managed by the City of Minneapolis. Perhaps the most flexible of the capital funding sources listed, these funds can be used for a local construction match, for design and engineering fees, and internal overhead. Net Debt Bond projects are determined as part of the annual city budget process.

Private and Corporate Donations—Private donation and corporate gifts can be accepted by the city for capital projects. These funds must be accepted by the City Council and Mayor.

8.2.2 Non-Infrastructure Funding Sources—There are several funding sources that are commonly used for education, enforcement, and encouragement initiatives in addition to infrastructure:

Health Industry Funding—BCBS funding, HCMC.
Bike Industry Funding—This funding is often used for encouragement projects.

8.2.2 Non-Infrastructure Funding Sources - Continued

Safe Routes to School Funding—Federal funding that is passed through the states for education and infrastructure improvements. Many schools also dedicate staff time toward this effort.

Private and Corporate Donations—Funding from individuals and businesses.

Foundations and Industry Groups—Groups such as Bikes Belong and the McKnight Foundation often fund programming projects.

Fundraisers—Bike rides and bike races make excellent fundraisers for non-infrastructure projects.

NRP Funding—Neighborhood funds can be used for educational and enforcement initiatives.

8.3 Maintenance Funding

8.3.1 Funding Sources—There are not as many maintenance funding sources as there capital funding sources for bicycle projects. The Minneapolis Park and Recreation Board and City of Minneapolis currently maintain trails, streets, and parkways with operating dollars that come from state and local sources. To ensure adequate upkeep over the long term, the City should pursue dedicated sources for the maintenance of off-street trails.

8.4 Funding Matrix

8.4.1 Infrastructure Projects – The projects identified in Chapter 7 are further defined in the project matrix. Completing the Bikeways Master plan will add approximately 183 miles of bikeways at an estimated cost of $270 million (2011 dollars). The capital costs were estimated based on past project costs per mile and are based on known conditions. Typically it costs about $50,000 to stripe a bike lane, $100,000 per mile to install a bicycle boulevard, and $3,000,000 per mile to construct a trail. It currently costs $2 per linear foot to maintain a trail, bike boulevard, or bike lane. Maintenance costs include signage replacement, new pavement markings, sweeping, plowing snow, sand/salt applications, and minor pavement restoration. It is estimated that when the system is complete (357 miles of bikeways) it will cost $1,320,000 to maintain it on an annual basis. As can be seen in the project matrix, there are substantial costs to constructing and maintaining the proposed system. It will take at least 30 years to complete the bicycle network and considerable resources to properly maintain it.

The project matrix identifies which agency will take the lead on project construction and which agency will need to maintain the facility when completed. Most routes will need to be maintained by Minneapolis Public Works or the Minneapolis Park and Recreation Board. Three Rivers Park District and Hennepin County also construct and maintain bicycle facilities within the city. It is also important to note that several existing trails will need to be resurfaced within the next 30 years. While the capital cost for those projects are shown, no new mileage will be created. Because of this, maintenance costs will not increase.

8.4.1 Infrastructure Projects - Continued

Table 8.1 - Downtown Projects

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
D-1	2nd Street Gap	$300,000	Federal Grant/ Net Debt Bonds	$1,800	City	MPRB
D-2	2nd Ave and Marquette Ave	$50,000	City Net Debt Bonds	$20,760	City	City
D-3	3rd Avenue Bikeway	$25,000	City Net Debt Bonds	$18,046	City	City
D-4	5th/6th Street Bikeways	$25,000	City Net Debt Bonds	$20,820	City	City
D-5	13th Ave Gap	$5,000	City Net Debt Bonds	$1,940	City	City
D-6	Downtown Bike Lane Cleanup	$25,000	City Net Debt Bonds	Existing bikeways-no additional cost.	City	City
D-7	Dunwoody Blvd Trail	$1,000,000	Federal Grant/ City Net Debt Bonds	$5,800	City	City
D-8	Groveland Ave/ Pillsbury Ave Bikeway	$15,000	City Net Debt Bonds	$5,520	City	City
D-9	Harmon Bike Lanes	$50,000	City Net Debt Bonds	$3,200	City	City
D-10	Hennepin Avenue Extension	$25,000	City Net Debt Bonds	$5,400	City	City
D-11	Loring Bikeway Extension	$500,000	Federal Grant/ City Net Debt Bonds	$5,400	City	City
D-12	U of M Trail Extension	$1,000,000	Federal Grant	$2,400	City	City
D-13	Washington Avenue Gap	$25,000	City Net Debt Bonds/ Hennepin County Funding	$4,260	City/ County	City/County
D-14	Yale Bikeway	$10,000	City Net Debt Bonds	$2,400	City	City
Total		**$3,055,000**		**$97,746**		

Above: Bicycle parking in Downtown Minneapolis

8.4.1 Infrastructure Projects - Continued

Table 8.2 - North Minneapolis Projects

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
N-1	8th Ave N Bikeway	$25,000	City Net Debt Bonds	$10,080	City	City
N-2	16th Ave N Bikeway	$25,000	City Net Debt Bonds	$9,640	City	City
N-3	26th Avenue North Trail	$3,000,000	Federal Grant/ City Net Debt Bonds	$21,520	City	City
N-4	33rd Ave Bike Blvd	$250,000	Federal Grant/ City Net Debt Bonds	$17,700	City	City
N-5	37th Avenue North	$300,000	City Net Debt Bonds	$4,610	City	City
N-6	49th Ave N Trail	$1,500,000	Federal Grant/ City Net Debt Bonds	$10,130	City	City
N-7	53rd Avenue Bikeway	$25,000	City Net Debt Bonds	$13,400	City	City
N-8	Bryant Avenue Bike Lanes	$50,000	City Net Debt Bonds	$11,440	City	City
N-9	Camden Bridge Approaches	$500,000	Federal Grant/ City Net Debt Bonds	$2,450	City	City
N-10	Humboldt Ave Bike Blvd/ Greenway	$3,100,000	City Net Debt Bonds	$14,880	City	City
N-11	Golden Valley Road Bikeway	$100,000	City Net Debt Bonds/County Funds	$12,980	City/ County	City/County
N-12	Irving Bike Boulevard/ Greenway	$1,200,000	City Net Debt Bonds	$22,140	City	City
N-13	Knox Avenue Bike Boulevard	$10,000	City Net Debt Bonds	$3,678	City	City
N-14	Luce Line Extension	$500,000	Federal Grant/ City Net Debt Bonds	$7,030	City	City
N-15	Lyndale Ave Bike Lane	$50,000	City Net Debt Bonds	$10,800	City	City

Above: A parked bicycle in Downtown Minneapolis

8.4.1 Infrastructure Projects – Continued

Table 8.2 - North Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
N-16	Oak Park Bike Boulevard	$100,000	City Net Debt Bonds	$10,050	City	City
N-17	Osseo Road Trail	$100,000	City Net Debt Bonds/County Funds	$3,160	City/ County	City/ County
N-18	Queen Avenue North Bikeway	$10,000	City Net Debt Bonds	$5,120	City	City
N-19	Penn Avenue Bikeway	$100,000	City Net Debt Bonds/County Funds	$47,440	City/ County	City/ County
N-20	Ryan Lake Trail	$250,000	Federal Grant/ City Net Debt Bonds	$5,200	City	City
N-21	Thomas Avenue Bike Boulevard	$50,000	City Net Debt Bonds	$31,730	City	City
N-22	Upper River Trails	$15,000,000	Federal Grant/ City Net Debt Bonds/ Legacy	$32,260	MPRB	MPRB
N-23	Webber Parkway Bike Lane	$25,000	MPRB Funding	$4,550	MPRB	MPRB
N-24	West Broadway	$300,000	City Net Debt Bonds/County Funds	$10,476	City/ County	City/ County
Total		**$26,570,000**		**$337,464**		

Above: Lowry Avenue North bike lanes

8.4.1 Infrastructure Projects – Continued

Table 8.3 - Northeast Minneapolis Projects

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
NE-1	4th St S	$15,000	City Net Debt Bonds	$4,292	City/ MPRB	City/MPRB
NE-2	4th St SE	$25,000	City Net Debt Bonds	$9,960	City/ County	City/County
NE-3	4th St SE	$10,000	City Net Debt Bonds	$9,600	City	City
NE-4	5th Avenue NE	$5,000	City Net Debt Bonds	$3,590	City	City
NE-5	5th Street NE Bike Lanes	$10,000	City Net Debt Bonds	$3,860	City	City
NE-6	18th Ave NE Trail	$4,000,000	Federal Grant/ City Net Debt Bonds	$17,580	City	City
NE-7	27th Ave Bike Bridge	$5,000,000	Federal Grant/ City Net Debt Bonds	$2,080	City	City
NE-8	27th Ave NE Trail	$3,000,000	Federal Grant/ City Net Debt Bonds	$10,800	City	City
NE-9	29th Ave Bike Blvd	$250,000	City Net Debt Bonds	$10,600	City	City
NE-10	33rd Ave Bikeway	$75,000	City Net Debt Bonds	$10,600	City	City
NE-11	37th Avenue NE Bike Lanes	$150,000	City Net Debt Bonds	$17,052	City	City
NE-12	BNSF Corridor	$15,000,000	Federal Grant/ City Net Debt Bonds	$17,560	City	City
NE-13	Bottineau Trail	$4,000,000	Federal Grant/ City Net Debt Bonds	$17,870	City	City
NE-14	Cedar Lake Trail Bridge	$5,000,000	Federal Grant/ City Net Debt Bonds	$3,580	City	City
NE-15	Church Street Bike Lanes	$250,000	City Net Debt Bonds	$3,320	City	City
NE-16	Emerald Bikeway	$10,000	City Net Debt Bonds	$2,464	City	City
NE-17	Grand Rounds Missing Link	$150,000,000 (includes trail, parkway construction, property acquisition, and new park)	Federal Funding/ MPRB Funding	$21,300	MPRB	MPRB

8.4.1 Infrastructure Projects – Continued

Table 8.3 - Northeast Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
NE-18	Hennepin Ave Bike Lane	$300,000	City Net Debt Bonds/County Funds	$23,950	City/ County	City/ County
NE-19	Hennepin Bike Bridge	$6,000,000	Federal Grant/ City Net Debt Bonds	$2,160	City	City
NE-20	Kasota Bike Lanes	$50,000	City Net Debt Bonds	$7,550	City	City
NE-21	Marshall Street Bike Lanes	$250,000	City Net Debt Bonds/County Funds	$27,376	City/ County	City/ County
NE-22	Minneapolis Diagonal Pavement Renovation	$1,000,000	City Net Debt Bonds	No additional cost	City	City
NE-23	Pleasant Ave SE	$25,000	City Net Debt Bonds	$3,084	U of M	U of M
NE-24	Spring Street Bikeway	$25,000	City Net Debt Bonds	$10,220	City	City
NE-25	Stinson Blvd	$100,000	City Net Debt Bonds/County Funds	$21,910	City/ County	City/ County
NE-26	University Avenue Bike Lanes	$250,000	City Net Debt Bonds/County Funds	$5,030	City	City
NE-27	Upper River Trails	$10,000,000	Federal Grant/ City Net Debt Bonds/Legacy	$26,950	MPRB	MPRB
NE-28	Washington Avenue Gap	$5,000,000	City Net Debt Bonds/County Funds	$3,025	City/ County	City/ County
Total		**$209,775,000**		**$297,363**		

Above: A shoulder and sidewalk along the 3rd Avenue Bridge.

8.4.1 Infrastructure Projects - Continued

Table 8.4 - Southwest Minneapolis Projects

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
SW-1	24th Street South Bikeway	$100,000	City Net Debt Bonds	$12,380	City	City
SW-2	31st Street Bikeway	$125,000	City Net Debt Bonds	$15,930	City	City
SW-3	35th/36th Street Bikeway	$200,000	City Net Debt Bonds	$14,000	City	City
SW-4	36th Street Bikeway	$50,000	City Net Debt Bonds	$5,540	City	City
SW-5	42nd Street Bike Lanes	$100,000	City Net Debt Bonds	$12,180	City	City
SW-6	46th Street Bikeway	$150,000	City Net Debt Bonds/County Funds	$12,120	City/ County	City/ County
SW-7	49th St Bike Boulevard	$250,000	City Net Debt Bonds	$26,466	City	City
SW-8	50th Street Bike Lanes	$250,000	City Net Debt Bonds/County Funds	$28,490	City/ County	City/ County
SW-9	54th Street/ Diamond Lake Bikeway	$200,000	City Net Debt Bonds	$17,580	City	City
SW-10	58th/60th Bikeway	$200,000	City Net Debt Bonds	$22,240	City	City
SW-11	Cedar Lake Parkway Trail Reconstruction	$500,000	Federal Funds/ MPRB Funding	No additional cost	City	City
SW-12	Cedar Lake Trail Reconstruction	$200,000	City Net Debt Bonds	$37,972	City	MPRB
SW-13	Douglas Ave Bikeway	$50,000	City Net Debt Bonds	$10,610	City	City
SW-14	Ewing Avenue Bikeway	$15,000	City Net Debt Bonds	$4,026	City	City
SW - 15	Excelsior Blvd Bike Lanes	$25,000	City Net Debt Bonds/County Funds	$9,036	City/ County	City/ County
SW-16	France Ave Bike Lanes	$150,000	City Net Debt Bonds/County Funds	$25,770	City/ County	City/ County

Above: Bike rack at Green Central Park.

8.4.1 Infrastructure Projects - Continued

Table 8.4 - Southwest Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
SW-17	Franklin Avenue Bike Lane	$250,000	City Net Debt Bonds/County Funds	$17,630	City/ County	City/ County
SW-18	Fremont Avenue Ramp	$250,000	Federal Grant/ City Net Debt Bonds	$800	City	City
SW-19	Irving Bikeway	$50,000	City Net Debt Bonds	$10,734	City	City
SW-20	Kenwood Parkway	$50,000	MPRB	$17,750	MPRB	MPRB
SW-21	Kenilworth Trail Reconstruction	$1,500,000	Metropolitan Council/ SW LRT	No additional cost	City	MPRB
SW - 22	Lake of the Isles Routes	$50,000	MPRB Funding	$32,296	City/ MPRB	City/MPRB
SW - 23	Lake Street	$25,000	City Net Debt Bonds/County Funds	$5,512	City	City
SW-24	Linden Hills Signed Routes	$75,000	City Net Debt Bonds	$22,366	City	City
SW-25	Midtown Greenway Renovation	$1,000,000	Federal Grant/ City Net Debt Bonds	No additional cost	City	City
SW-26	Nicollet Ave Bike Lane	$250,000	City Net Debt Bonds	$29,758	City	City
SW-27	Penn Ave Bike Bridge	$3,000,000	City Net Debt Bonds/County Funds	$800	Met Council	City
SW-28	Pleasant Avenue Ramp	$250,000	Federal Grant/ City Net Debt Bonds	$800	City	City
SW-29	Pleasant Avenue Bike Blvd/ Greenway	$3,300,000	City Net Debt Bonds	$40,492	City	City

Above: Bike rack at Annunciation School.

8.4.1 Infrastructure Projects - Continued

Table 8.4 - Southwest Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
SW-30	Soo Line Trail	$4,000,000	Federal/ Three Rivers Park District	$54,040	Three Rivers Park District	Three Rivers Park District
SW-31	Upton/ Sheridan Bikeway	$50,000	City Net Debt Bonds	$21,890	City	City
SW-32	William Berry Trail Reconstruction	$500,000	MPRB Funding	No additional cost	City	City
SW-33	Zenith Ave Bikeway	$150,000	City Net Debt Bonds	$24,400	City	City
Total		**$17,315,000**		**$532,808**		

Above: Downtown Minneapolis

8.4.1 Infrastructure Projects - Continued

Table 8.5 - South Minneapolis Projects

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
S-1	10th Avenue Bikeway	$500,000	City Net Debt Bonds	$9,120	City	City
S-2	12th Ave Bike Blvd	$250,000	City Net Debt Bonds	$12,920	City	City
S-3	17th Bike Blvd	$500,000	City Net Debt Bonds	$31,390	City	City
S-4	21st Ave Bike Route	$50,000	City Net Debt Bonds	$19,660	City	City
S-5	29th Ave Bike Route	$25,000	City Net Debt Bonds	$14,740	City/ County	City/County
S-6	28th Street/Dorman Bikeway	$75,000	City Net Debt Bonds	$14,784	City	City
S-7	31st Street Bikeway	$100,000	City Net Debt Bonds	$32,780	City	City
S-8	11th Ave Trail	$500,000	City Net Debt Bonds/County Funds	$5,264	City/ County	City/ County
S-9	32nd Street Bike Blvd	$100,000	City Net Debt Bonds	$14,604	City	City
S-10	35th and 36th Street	$50,000	City Net Debt Bonds	$19,840	City	City
S-11	38th Ave Bike Route	$75,000	City Net Debt Bonds	$18,250	City	City
S-12	38th Street Bikeway	$75,000	City Net Debt Bonds	$25,264	City	City
S-13	42nd Street Bike Lanes	$250,000	City Net Debt Bonds	$49,218	City	City
S-14	46th Ave Bikeway	$50,000	City Net Debt Bonds	$21,524	City	City
S-15	46th Street Bike Lane	$100,000	City Net Debt Bonds/County Funds	$14,200	City/ County	City/ County
S-16	46th Street Bike Lane	$100,000	City Net Debt Bonds/County Funds	$6,620	City/ County	City/ County

Above: Park Avenue Bike Lane at 25th Street.

8.4.1 Infrastructure Projects - Continued

Table 8.5 - South Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
S-17	50th Street Bikeway	$7,500	City Net Debt Bonds/County Funds	$2,940	City	City
S-18	54th Bikeway	$50,000	City Net Debt Bonds	$7,700	City	City
S-19	60th Street/ Cedar Frontage Road Bike Lanes	$75,000	City Net Debt Bonds	$17,528	City	City
S-20	Bloomington Bikeway	$250,000	City Net Debt Bonds	$41,900	City	City
S-21	Bloomington Avenue Ramp	$500,000	City Net Debt Bonds	800	City	City
S-22	Chicago Ave Bike Lanes	$50,000	City Net Debt Bonds	$18,538	City	City
S-23	Diamond Lake Road Bike Lanes	$25,000	City Net Debt Bonds	$4,030	City	City
S-24	Edgewater Blvd	$15,000	City Net Debt Bonds	$5,140	City	City
S-25	Franklin Avenue Bike Lanes	$250,000	City Net Debt Bonds/County Funds	$20,730	City/ County	City/ County
S-26	Hiawatha Trail East	$3,000,000	Federal Grant/ City Net Debt Bonds	$26,022	City	City
S-27	Hiawatha Trail Lighting	$1,000,000	Federal Grant/ City Net Debt Bonds/ Metro Transit	$7,000	City/ Metro Transit	City/ Metro Transit
S-28	Lake Hiawatha Trail	$1,500,000	MPRB Funding	18,500	MPRB	MPRB
S-29	LRT Station Area Improvements	$1,000,000	Federal Grant/ City Net Debt Bonds	$10,000	City/ Metro Transit	City/ Metro Transit
S-30	LRT Trail Gap	$500,000	Federal Grant/ City Net Debt Bonds	$11,764	City	City

Above: Minnehaha Avenue Bike Lane at 35th Street.

8.4.1 Infrastructure Projects - Continued

Table 8.5 - South Minneapolis Projects (Continued)

ID #	Project Name	Estimated Capital Cost	Capital Funding Source	Estimated Annual Operating Cost	Project Lead/ Facility Owner	Maintenance Responsibility
S-31	Midtown Greenway Renovation (Includes Security System Upgrades)	$1,000,000	City Net Debt Bonds	No Additional Cost	City	City
S-32	MG Bridge over the River	$12,000,000	Federal Grant/ City Net Debt Bonds	$4,484	City/ County	City/ County
S-33	MG Bloomington Ramp	$500,000	Federal Grant/ City Net Debt Bonds	$800	City	City
S-34	Nokomis Bikeway	$50,000	City Net Debt Bonds	$10,420	City	City
S-35	Nokomis Signed Routes	$25,000	City Net Debt Bonds	$11,222	City	City
S-36	Oakland Bike Lane	$3,000,000	Federal Grant/ City Net Debt Bonds	$40,480	City	City
S-37	Portland Ave Bike Lanes	$150,000	City Net Debt Bonds/County Funds	$16,680	City/ County	City/ County
Total		**$27,947,500**		**$572,072**		

Above: Whitney Bridge over I-94 between Loring Park and the Sculpture Garden.

8.4.2 Non-Infrastructure Initiatives – Non-infrastructure initiatives identified in Chapter 7 are further defined in this section to suggest estimated maximum annual costs, a potential lead agency, likely partner agencies, and potential funding sources.

Table 8.6 – Education Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ED-1	Bike Map	$10,000	City	MPRB State of MN	Private or non-profit funding
ED-2	Tourism Packet	$10,000	Meet Minneapolis	Local Businesses	Private funding
ED-3	Development and implementation of Safe Routes to School curriculum	$250,000	Minneapolis Schools	Public Works	Federal, School District funding
ED-4	Community Bike Course	$10,000	Non-profit groups, Neighbor-hood groups	Public Works Minneapolis Schools	Private funding
ED-5	Staff Development	$10,000	City	MPRB State of MN	Non-profit grants
ED-6	Education for Professional Drivers	$10,000	Local businesses	State of MN, Minneapolis Schools	Private funding
ED-7	Helmet Education	$10,000	Hospitals and Health Industry	State of MN, Minneapolis Schools	Private or non-profit funding
ED-8	Radio and TV Public Service Announcements	$1,200,000	City	MPRB State of MN	Private funding
ED-9	Utility Bill Inserts	$200,000	City	-	Private funding
ED-10	Advertising Bicycle Initiatives On-Line	$100,000	Non-profit groups, local businesses	Public Works Minneapolis Schools	Private funding
ED-11	Rent Billboards to Promote the Rules of the Road	$100,000	Non-profit groups, local businesses	Public Works, Minneapolis Schools	Private funding
ED-12	Marketing to Promote Bicycling and Bicycle Safety	$50,000	State, non-profit groups	Public Works, Minneapolis Schools	Private funding
ED-13	Positive TV and Radio Stories on Biking	$0	City, Media	State, MPRB	No additional cost
ED-14	Cyclopath/ Cycloplan	$100,000	Non-profit groups	Local Cities, Met Council	Private funding
ED-15	Free educational materials for bicyclists	$10,000	Local businesses	Neighbor-hood groups	Private funding

8.4.2 Non-Infrastructure Initiatives – Continued

Table 8.6 – Education Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ED-16	Earn-a-Bike program	$50,000	Non-profit groups	Minneapolis Schools, MPRB	Private funding
ED-17	Bicycle videos for educational purposes	$25,000	Non-profit groups	City, MPRB, Minneapolis Schools	Private funding
ED-18	Expand the number of bicycle rodeos	$50,000	Non-profit groups	MPRB, MPD	MPRB funding
Total		**$2,195,000**			

Table 8.7 – Encouragement Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENC-1	Bike/Walk Week	$25,000	TMO	Non-profit groups, local businesses, neighbor-hood groups	Private funding
ENC-2	Expand Bike Share	See Table 8.9	Non-profit groups	-	Private funding, non-profit grants
ENC-3	Policies to Increase Biking to School	$0	Minneapolis Schools	Neighbor-hood groups	To be done with existing resources
ENC-4	Developers install bicycle facilities	Varies; costs not calculated.	Local businesses	-	Private funding
ENC-5	Developers to install bicycle parking	Varies; costs not calculated	Local businesses	-	Private funding
ENC-6	Continue 50/50 Cost Share Program	$40,000	City	Local businesses	City funding, private funding
ENC-7	Bicycle Kit Giveaway	$25,000	Bike shops, bicycle industry	U of M, MPS City	Private funding
ENC-8	Bicycle Commuting Contests Between Businesses or Schools	$10,000	Local businesses, Minneapolis schools	-	Private funding

8.4.2 Non-Infrastructure Initiatives –

Table 8.7 – Encouragement Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENC-9	General Bicycle Themed Contests	$10,000	Local businesses, Neighbor-hood Groups	-	Private funding
ENC-10	Commuter Fairs	$5,000	TMO, Local Companies	City	TMO
ENC-11	Implement Ciclovia/Open Streets	$75,000	Non-profit groups	City, County	Private funding
ENC-12	U-Lock Cost Share Program	$10,000	Local bike shops, bicycle industry	-	Non-profit grants
ENC-13	Bicycle Maintenance Club	$25,000	Local bike shops, bicycle industry, business	-	Private funding
ENC-14	Improve Bike Program Website	$5,000	City	-	City funding
ENC-15	Youth Bike Trips	$25,000	Non-profit groups, local businesses	-	Private funding
ENC-16	Amateur Bike Race	$50,000	Non-profit groups, local businesses	-	Private funding
ENC-17	Children's Bike Map	$10,000	Non-profit groups, local bike shops	-	Non-profit grants
ENC-18	Public Art Mural	$10,000	Non-profit groups, neighbor-hood groups	-	Private funding
ENC-19	Bicycle Advisory Committee Exchange	$5,000	Bicycle Advisory Committee	City	Private funding
ENC-20	Bicycle Giveaways	$20,000	Local bike shops, bicycle industry	-	Bicycle industry
ENC-21	Fleet Bicycles for Employees	$10,000	City	Nice Ride MN	Non-Profit grants
Total		**$360,000**			

8.4.2 Non-Infrastructure Initiatives – Continued

Table 8.8 – Enforcement Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENF-1	Crash and Safety Campaign	$20,000	City	State, County, MPRB	Federal and state grants
ENF-2	Anti-Theft Campaign	$25,000	City	State, County, MPRB	Public safety budgets, non-profit grants
ENF-3	Bicycle Registration	$0	City	State, County, MPRB	This should be a cost/revenue neutral initiative
ENF-4	Promote 311	$0	City	-	Existing city budgets
ENF-5	Bike Bait Program	$25,000	Minneapolis Police	MPRB Police, U of M Police	Non-profit grants
ENF-6	First Time Offender Program	$5,000	Minneapolis Police	MPRB Police, U of M Police	Non-profit grants
ENF-7	Bicycle Safety Education Course	$5,000	Minneapolis Police	MPRB Police, U of M Police	Non-profit grants
ENF-8	Trail Patrolling by Bike	$10,000	Minneapolis Police	MPRB Police, U of M Police	City funding
ENF-9	Ticket Fees for Moving Violations	$0	Policy Makers	Court System	To be done with existing resources
ENF-10	Bicycle Patrol Program	$10,000	Minneapolis Police	MPRB Police, U of M Police	City funding
ENF-11	Enforcement Needs for Safe Routes to School	$25,000	Minneapolis Police	MPRB Police, U of M Police	Non-profit grants
ENF-12	Downtown Improvement District Ambassadors	$0	Downtown DID	City	To be done with existing resources
ENF-13	Parking in Bike Lanes	$0	Minneapolis Police	Truck Unions, Shipping Companies, Postal Service	To be done with existing resources
ENF-14	Targeted Enforcement	$0	Minneapolis Police	MPRB Police, U of M Police	To be done with existing resources

8.4.2 Non-Infrastructure Initiatives – Continued

Table 8.8 – Enforcement Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENF-15	Citizen Watch Patrol	$0	Volunteers	Minneapolis Police, MPRB Police, U of M Police	Volunteers
Total		**$125,000**			

Table 8.9 – Engineering Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENG-1	Pavement Condition Ratings for Trails	$5,000	City	-	City funding
ENG-2	Ensure Bikeways are Marked, Signed, Lit, and Address Personal Safety	$5,000	City	-	City funding
ENG-3	Adequate Bicycle Parking at Transit Hubs	$2,000	City	Metro Transit	City funding, Metro Transit funding
ENG-4	Accommodate Bicycles at Actuated Signals	$10,000	City	-	City funding
ENG-5	Traffic Calming along Bike Routes and Mid-Block Trail Crossings	$25,000	City	-	City, private funding
ENG-6	Implement Bikeway Detour Strategies	$0	City	-	To be done with existing resources
ENG-7	Install Wayfinding and Informational Signage	$10,000	City	-	City funding
ENG-8	Design Bicycle Facilities to Meet or Exceed Standards, Pursue Innovative Treatments	$0	City	Hennepin County, MnDOT, MPRB	To be done with existing resources

8.4.2 Non-Infrastructure Initiatives – Continued

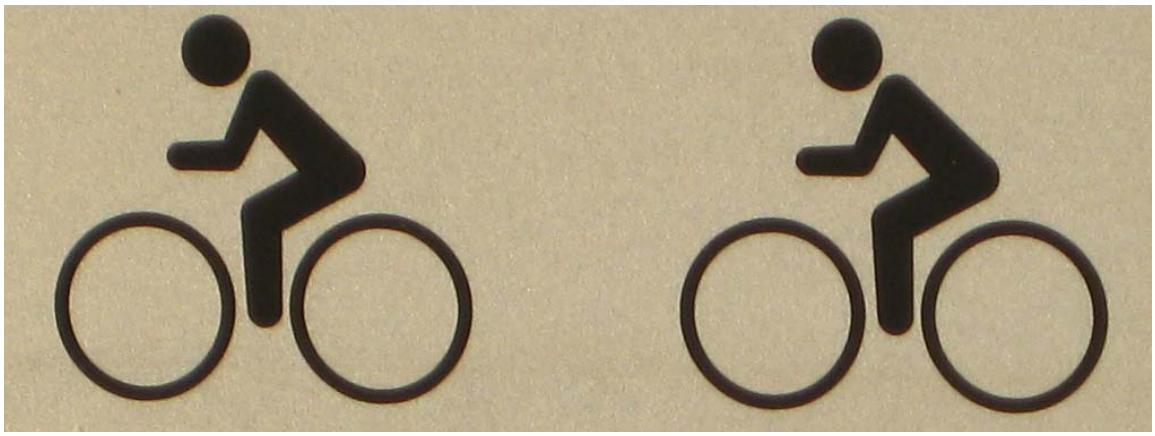
Table 8.9 – Engineering Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENG-9	Encourage Building Owners to Install Bicycle Parking, Showers/Lockers, and Bicycle Storage	Varies annually; no cost calculated	City	Private Businesses	Private funding
ENG-10	Complete all of the Routes in the Bikeways Master Plan	Costs shown in funding matrix.	City	Hennepin County, MnDOT, MPRB	Federal, state, county, city, private funding
ENG-11	Ensure that there is Adequate Funding to Build and Maintain Projects Within the Bikeways Master Plan	Costs shown in funding matrix.	City	Hennepin County, MnDOT, MPRB	Federal, state, county, city, private funding
ENG-12	Bicycle Friendly Road and Bridge Design	$0	City	Hennepin County, MnDOT, MPRB	To be done with existing resources
ENG-13	Trail Crossings	$50,000	City	-	City funding
ENG-14	Curb Cuts at Cul-de-Sacs and Diverters	$50,000	City	-	City funding
ENG-15	Replace manhole covers and Storm Sewer Grates	$25,000	City	-	City funding
ENG-16	Sharrows and Wayfinding Signage	$50,000	City	-	City funding
ENG-17	Crash Reduction Program	$50,000	City	-	City funding
ENG-18	Bikeways Cleanup Project	$50,000	City	-	City funding
ENG-19	Greenways Network	See funding matrix	Non-Profit Groups	City	Private funding
ENG-20	Bicycle Boulevards	See funding matrix.	City	-	Federal grants
ENG-21	Complete Regional Trail System	See funding matrix.	City	MPRB	Federal and state grants
ENG-22	Bike Share Program Expansion	$2,000,000	Nice Ride MN	City	Federal and private grants

8.4.2 Non-Infrastructure Initiatives –

Table 8.9 – Engineering Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
ENG-23	Preventative Maintenance/ Improved Maintenance	$100,000	City	MPRB	City funding
ENG-24	Infrastructure Needs for Safe Routes to School	$50,000	City	Minneapolis Schools	Federal grants
ENG-25	Downtown Bike Station Operations	$50,000	Bike Industry	-	Private funding
ENG-26	Green Wave Corridor	$50,000	City	-	Non-profit grants
ENG-27	Bike Racks	$50,000	City	-	City funding
ENG-28	50/50 Bike Rack Cost Share Program	$40,000	City	-	City funding
ENG-29	Renovation/ Reconstruction	Varies; no cost calculated.	City	-	City funding
ENG-30	Bike Racks on Buses	Costs have not been determined.	Metro Transit	Suburban Opt-Out Providers	Transit Provider Funding
ENG-31	Replace Non-Conforming Signs and Pavement Markings	$50,000	City	MRPB, County, MnDOT	City funding
ENG-32	Bicycle Detour Routes	Varies; done as part of capital project budgets	City	MRPB, County, MnDOT	City funding
Totals		**$2,722,000**			



Above: Bicycle symbols on a trail sign.

8.4.2 Non-Infrastructure Initiatives –

Table 8.10 – Equity Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
EQ-1	Materials in Multiple Languages	$5,000	City	-	City funding.
EQ-2	Reach out to Minority Groups	$0	City	-	To be done with existing resources
EQ-3	Ensure that City Neighborhoods are Connected to a Bicycle Facility	$0	City	-	To be done with existing resources
EQ-4	Add facilities in North Minneapolis, NE Minneapolis, and South of Minnehaha Parkway	$0	City	MPRB, Three Rivers Park District	To be done with existing resources
EQ-5	Expand Bike Share Program	See Table 8.9	Nice Ride MN	City	Federal and private grants
EQ-6	Cycling Programs for Children and Seniors	$25,000	Non-Profit Groups	Community Groups	Non-profit funding
EQ-7	Improve ratio of men to women cyclists	$0	Non-Profit Groups	Community Groups	To be done with existing resources
EQ-8	Make bicycling more appealing to minorities	$0	Non-Profit Groups	Community Groups	To be done with existing resources
EQ-9	Reconstruction and Renovation projects to accommodate bicycles per the Bike Plan Map	Varies; no cost calculated.	City	County, MPRB, MnDOT	City funding
EQ-10	Present Elected Officials with project trade-offs	$0	City	-	To be done with existing resources
Totals		**$30,000**			

Above: Trail approaching Target Field.

8.4.2 Non-Infrastructure Initiatives –

Table 8.11 – Evaluation Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
EV-1	Bike Counts	$0	City	Non-Profit Groups	Use volunteers
EV-2	Analyze Bicycle Mode Share Data	$0	City	County, MPRB, MnDOT, Non-Profit Groups	To be done with existing resources
EV-3	Publish a Progress Report on the Bicycle Master Plan's Progress	$5,000	City	County, MPRB, MnDOT	City funding
EV-4	Continue to Collect, Analyze, and Report Crash Statistics	$0	City	County, MPRB, MnDOT	To be done with existing resources
EV-5	Continue to Track Bicycle Theft Statistics	$0	City	U of M, Hennepin County, MPRB	To be done with existing resources
EV-6	Continue to Track Bicycle Related 311 Calls	$0	City	-	To be done with existing resources
EV-7	Evaluate Bikeway Quality	$0	City	MPRB	To be done with existing resources
EV-8	Track and Report the Number of Bicycling Education and Outreach Events in the City	$0	City	MPRB, Minneapolis Schools	To be done with existing resources
EV-9	Allocate City Resources to Leverage Outside Funding	Varies	City	MnDOT, Hennepin County, U of M, MPRB	To be done with existing resources
EV-10	Regularly Update the Bicycle Master Plan	$25,000	City	Bicycle Advisory Committee	City funding
EV-11	Monitor the number of students biking to school.	$0	Minneapolis Schools	Non-Profit Groups, Community Groups	To be done with existing resources
EV-12	Count the number of bicyclists using parkways and parkway trails.	$0	MPRB	Volunteers	Use volunteers

8.4.2 Non-Infrastructure Initiatives –

Table 8.11 – Evaluation Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
EV-13	Continue to conduct bicycle parking counts on a quarterly basis.	$0	City	Volunteers	Use volunteers
EV-14	Create more opportunities for public suggestions. Advertise 311 to cyclists	$0	City	-	To be done with existing resources
EV-15	Continue Results Minneapolis and Sustainability Reporting	$0	City	-	To be done with existing resources
EV-16	Continue to work with Colleges/ Universities to conduct research projects.	$0	City	Colleges and Universities	To be done with existing resources
EV-17	Work with other agencies to install and evaluate innovative bicycle treatments.	$0	City	County, MnDOT, MPRB	To be done with existing resources
EV-18	Work with other agencies to determine system-wide crash trends and create a combined strategy to reduce crashes including the Toward Zero Deaths initiative	$0	City	County, MnDOT, MPRB	To be done with existing resources
EV-19	Work with local hospitals and emergency rooms to track the type and severity of bicycle injuries.	$0	City	Local Hospitals	To be done with existing resources
EV-20	Obtain insurance data to supplement police reports to better monitor property damage.	$0	City	Insurance Companies	To be done with existing resources

8.4.2 Non-Infrastructure Initiatives –

Table 8.11 – Evaluation Initiatives

ID #	Project Name	Estimated Maximum Annual Cost	Potential Lead Agency	Likely Partner Agency	Potential Funding Source
EV-21	Perform Bicycle Counts at all Colleges and Universities	$0	Colleges and Universities	Volunteers	Volunteers to perform counts
Totals		**$30,000**			

Above: Minneapolis Booth at the Minnesota Bicycle Expo.