

Chapter 4 – Existing Conditions

4.1 Chapter Overview

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



Above: Bicycles parked at the University of Minnesota.

4.2 Education

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: 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



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.

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.

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: A TMO event at Wells Fargo.



Above: A public meeting to discuss a proposed plan.



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.

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.

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.

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: A bicyclist riding near Lake Nokomis



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



Above: Traffic approaching NE 35th Street



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:

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.

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.

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.

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.



Above: A full trail closure



Above: Interstate-94 near the Camden Bridge



Above: 40th Street Bike Lane in the Kingfield Neighborhood



Above: Midtown Greenway in winter

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?”

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)

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)

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)



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



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



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

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.



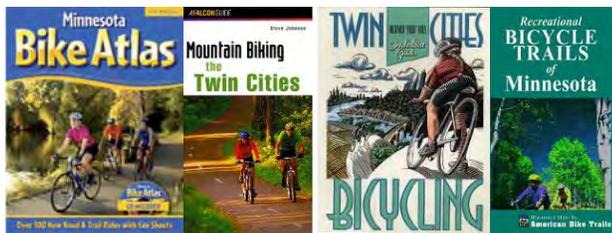
Above: Great Rivers Trail in Lilydale

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



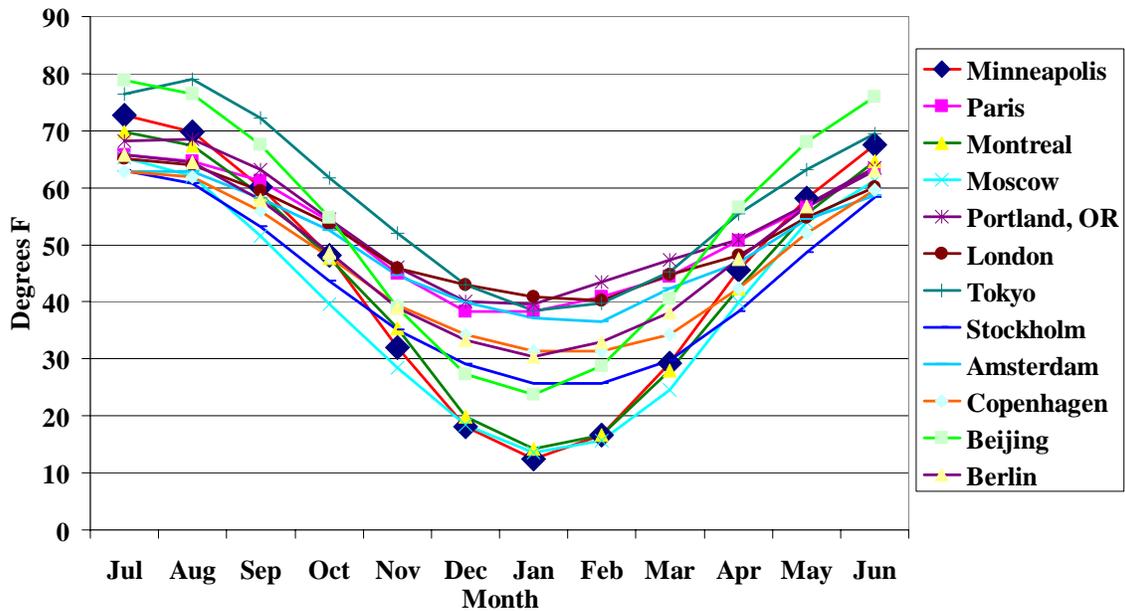
Above: There are numerous book by several authors that promote recreational bicycling in Minnesota.

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.

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.

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 meet with dignitaries



Above: Bike Walk to Work Day event

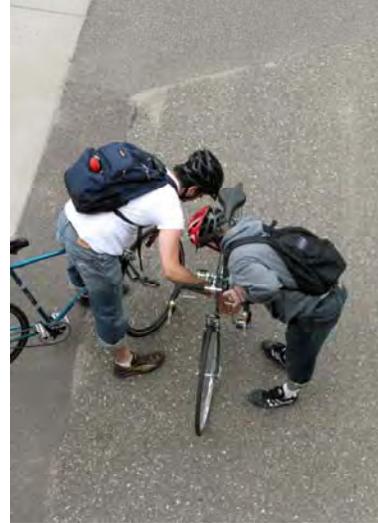


Above: The Bicycle and Pedestrian Ambassadors participate in a number of events



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 Cycling Club Ride Types

Ride Type	Description	Minimum Average Riding Speed	Riders Must Have	Rest Stops	Repairs	Leader Rides
A	Very Strenuous	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
	Fast Paced, most difficult terrain, or longer distance					
A/B	Strenuous	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
	Swift, more difficult terrain, or long distance					
B	Brisk	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.
	Social, but emphasis is on riding— A good choice for experienced group riders generally intermediate or greater pace, terrain and distance.					
B/C	Moderate	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.
	Social emphasis, but for those with riding experience—generally intermediate pace, terrain and distance					
C	Relaxed	About 10 mph	Entry level to intermediate cycling skills; spare tube, patch kit, pump	About every 10-15 miles	Leader helps	At the rear
	Easier, for a more laid back time, perfect for newer riders, slower pace and flatter terrain, shorter distance.					
N (Night)	Night	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
	B/C pace, social, safety stressed, lights required					
R (Randonneur)	Strenuous	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
	Long distance “brevet” ride with time limits and required checkpoints . Randonneur USA rules apply. Cooperative Spirit.					

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.

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.



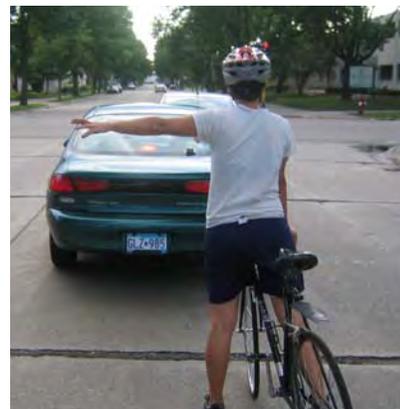
Above: Police officers on bicycles. The Minneapolis Police Department has 229 of out 825 officers (28%) who are certified by the International Police Mountain Bike Association to be bicycle officers. Approximately 35 officers per year receive this certification. In 2010, the Downtown Precinct regularly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

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

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.



Above: The Midtown Exchange

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

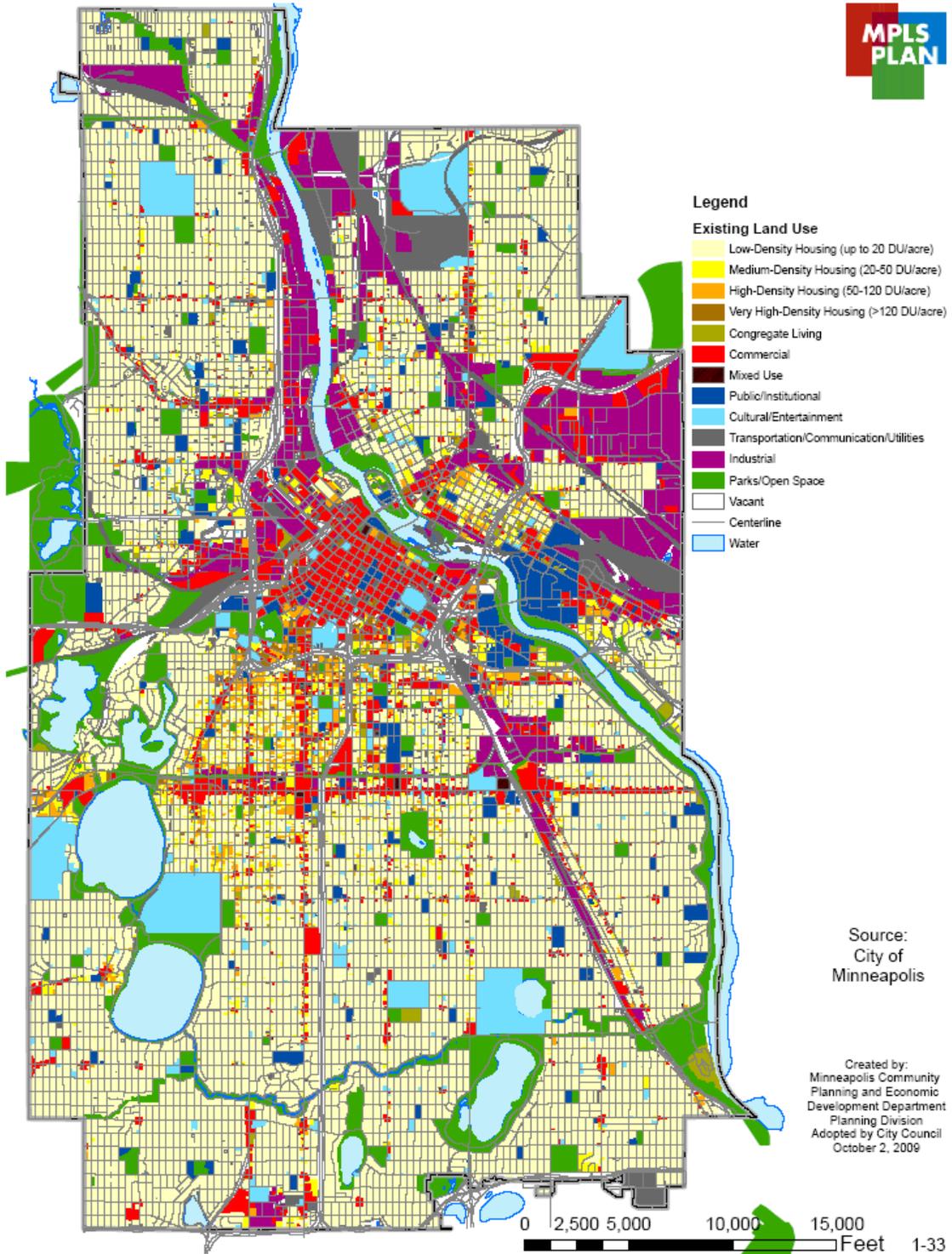


Figure 4.3 - Employment Density of Minneapolis

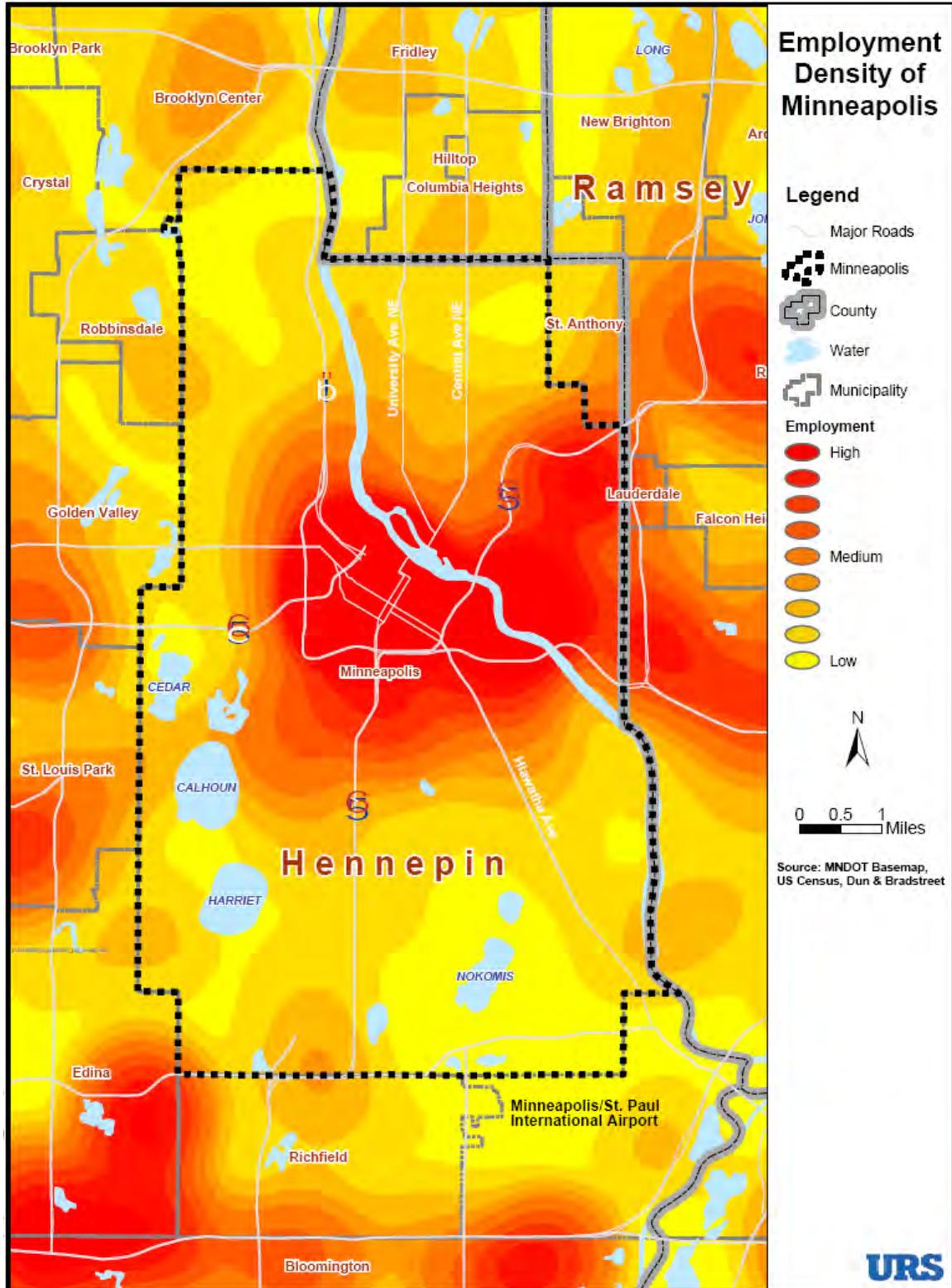
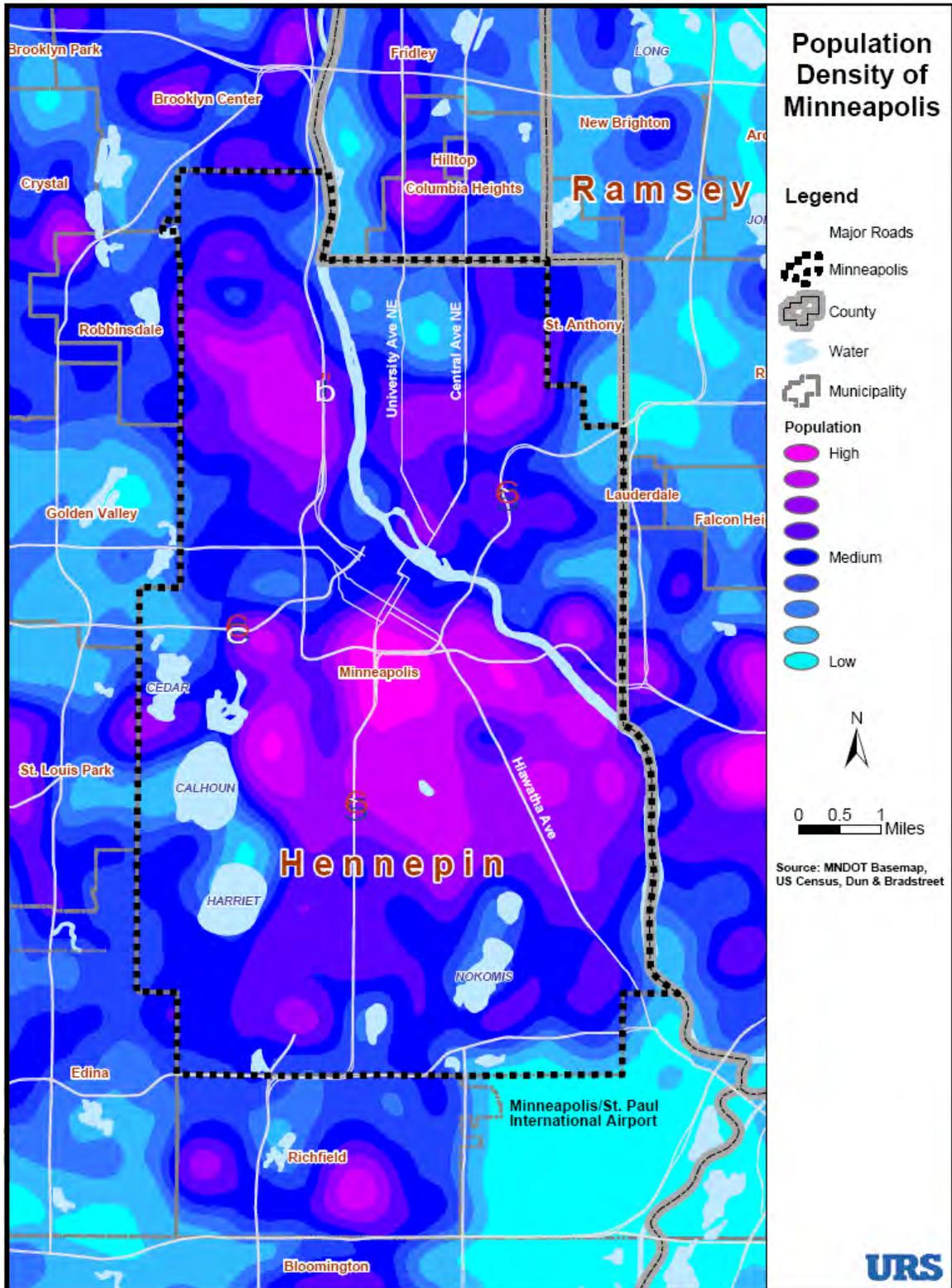


Figure 4.4 – Population Density of Minneapolis



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

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: Historic St. Anthony Main



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.

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.

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: Guthrie Theatre



Above: Minneapolis Institute of Art



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.

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.

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.

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

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.



Left: Shared Use Pavement Markings



Above: Stone Arch Bridge



Above: RiverLake Greenway



Above: North 7th St Bike Lane



Above: A greenway along Milwaukee Ave



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

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

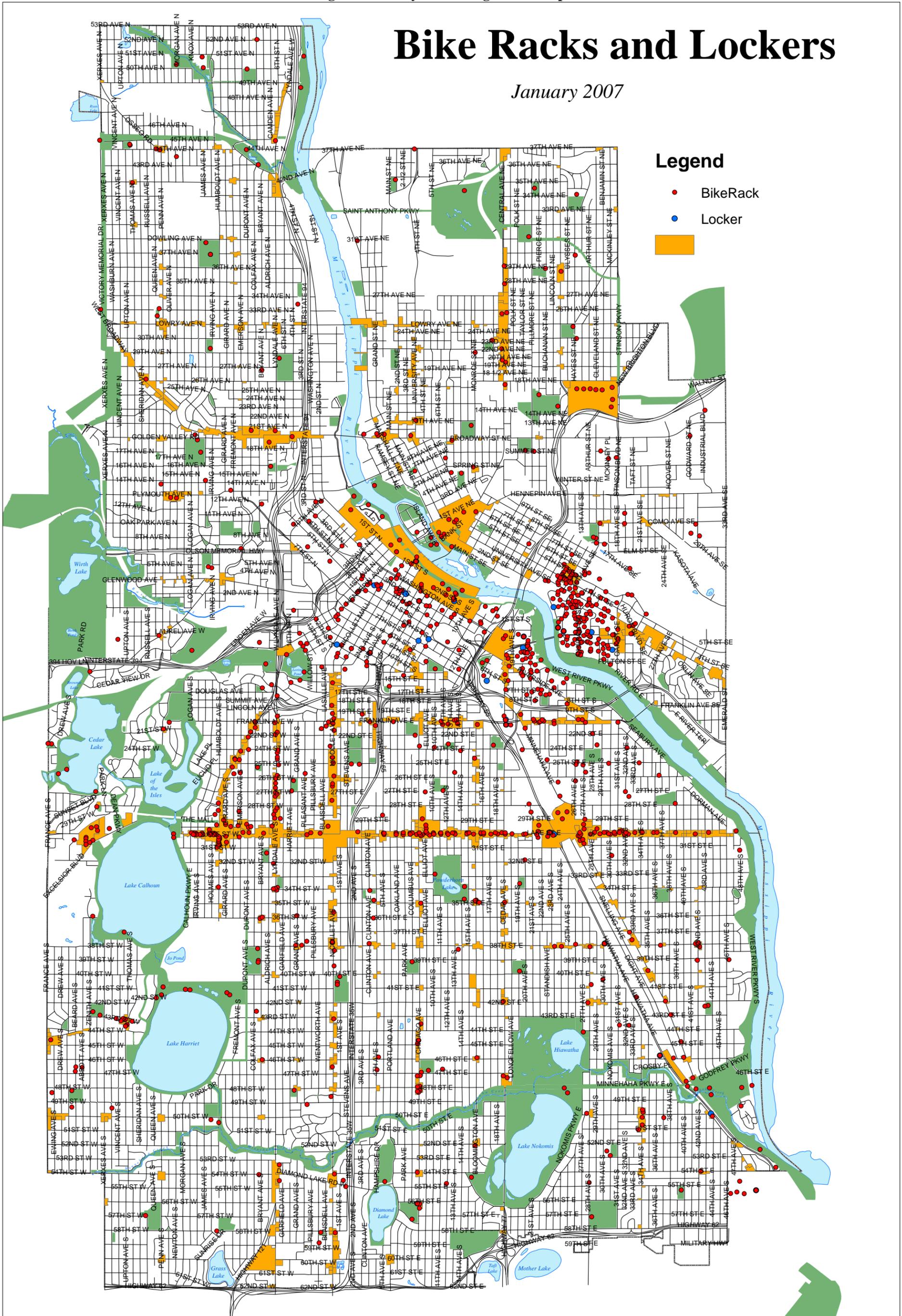
New Buildings (as of 1/09)	Minimum Bicycle Parking Requirement
Non-residential uses < 1,000 square feet	Exempt
Residential—Single family to 4 units	Exempt
Multi-family dwellings (5 or more units)	1 space per two dwelling units
Schools (K-12)	3 spaces per classroom
Community Centers	6 spaces
Theatres	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

Bike Racks and Lockers

January 2007



- Legend**
- BikeRack
 - Locker

0 0.25 0.5 1 1.5 2 Miles



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

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.

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: Bicycle Corral in Downtown Minneapolis



Above: Bicycle Corral in Washington D.C.



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:

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.

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.

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: Bicycle Box at Franklin and E River Parkway



Above: Pavement markings along Hennepin Avenue



Above: Pavement markings along Hennepin Avenue



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.

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

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

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



Above: A street sweeper in Downtown Minneapolis



Above: A snow plow along the Midtown Greenway



Above: A snow plow along the Midtown Greenway

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

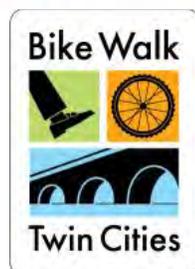
Table 4.4 – 1990 to 2007 Means of Transportation to Work

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%
<i>Bicycle</i>	1.6%	1.9%	2.4%	2.5%	3.8%
<i>Walked</i>	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%

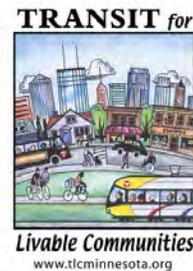
Source: U.S. Census Bureau, 1990 and 2000 Decennial Census, 2005 - 2007 American Community Survey



Minneapolis
City of Lakes

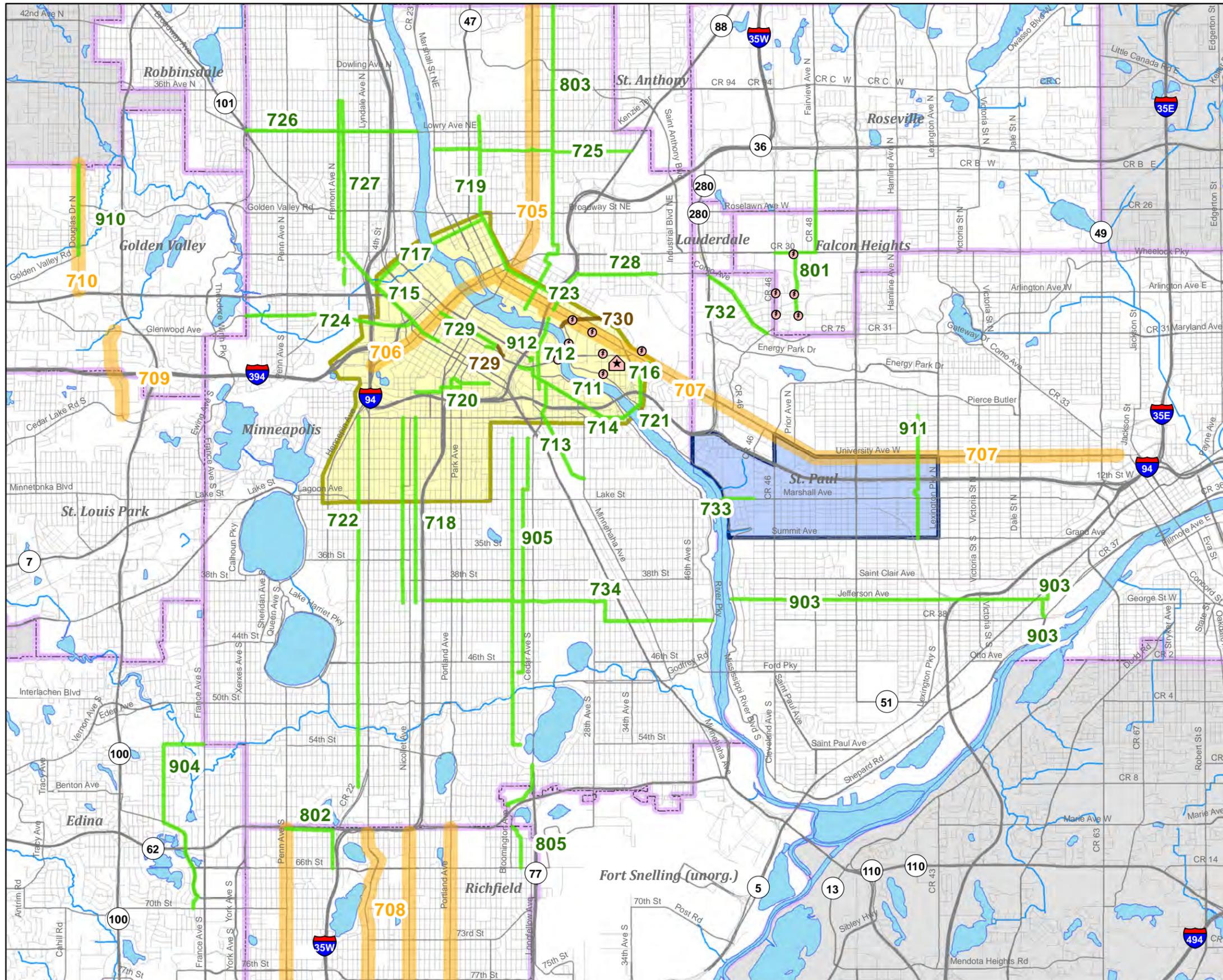


U.S. Department of Transportation
Federal Highway Administration



Transit for Livable Communities - Bike Walk Twin Cities

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

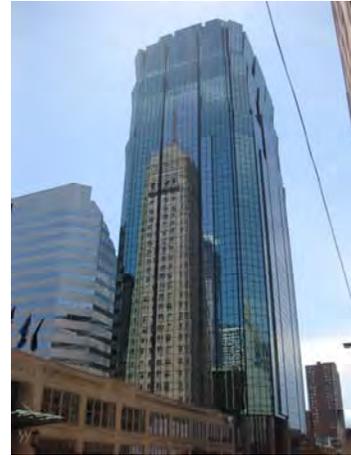


Transit for Livable Communities Bike/Walk Twin Cities
 This map contains information obtained from various sources believed to be reliable
 S:\GIS\BWCWTP\projects\Project map.mxd SEPT 2009

Figure 4.8 - NTP Projects

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.

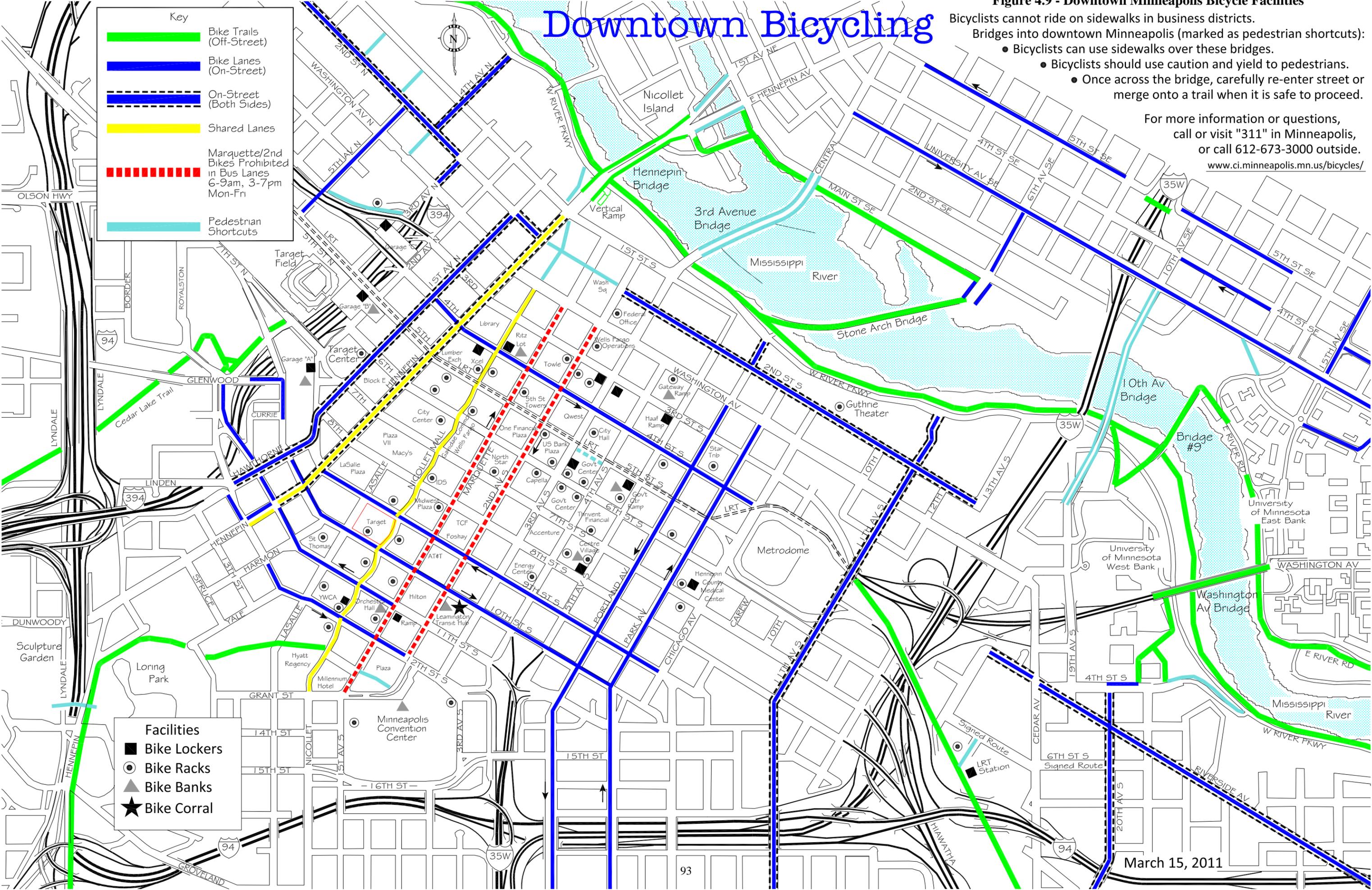
For more information or questions,
 call or visit "311" in Minneapolis,
 or call 612-673-3000 outside.
www.ci.minneapolis.mn.us/bicycles/

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



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.

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.

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.

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: Metro Transit bus with a bike rack



Above: Bicycle locker at Hiawatha LRT Station



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



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).

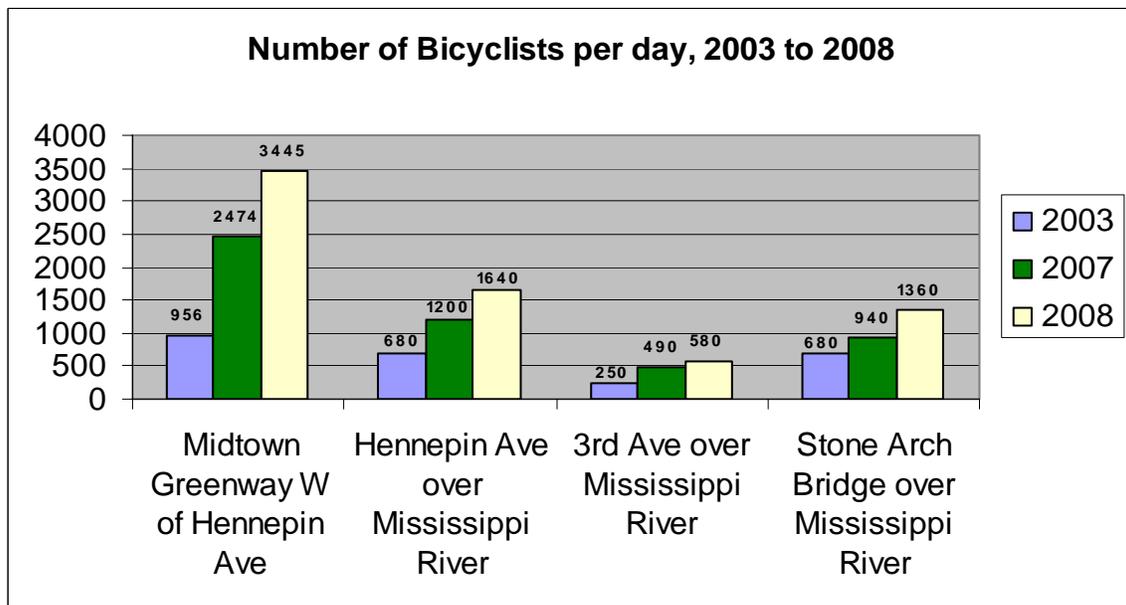
Table 4.5 – Top 5 Count Locations Within the City of Minneapolis

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%

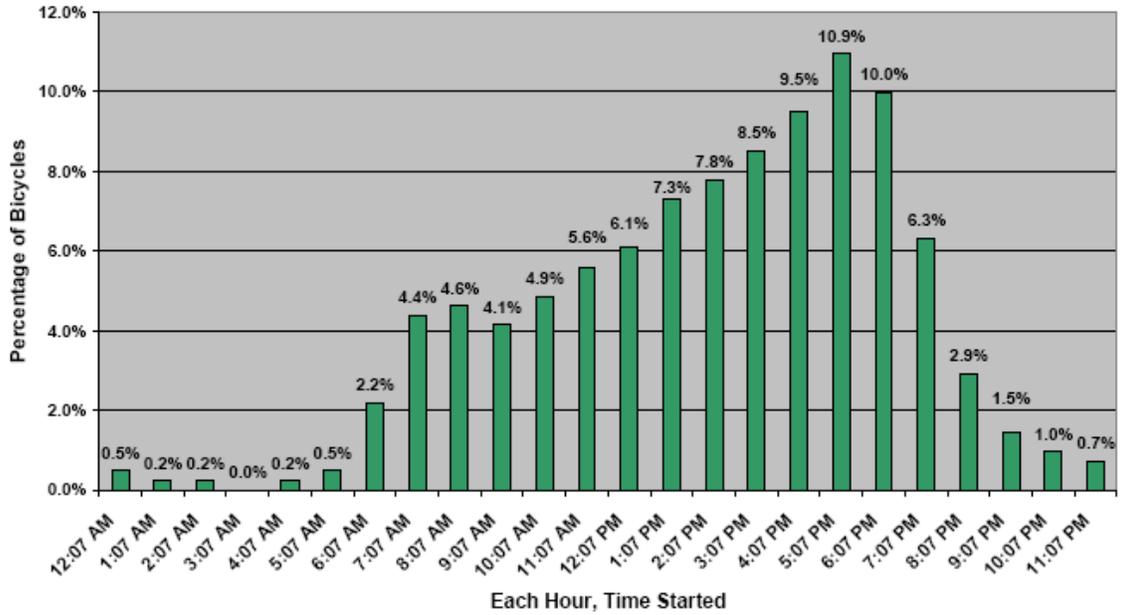
Table 4.7 – Number of Bicyclists per Day, 2003 to 2008



Above: 18th Ave NE Trail after a snowfall

Table 4.8

**Percentage of Daily Bicycle Traffic by Hour
on the Midtown Greenway at West River Parkway,
February 13th to May 24th, 2007**



Above: Midtown Greenway near 29th Avenue.

Table 4.9 – Average Temperatures in Minneapolis/St. Paul

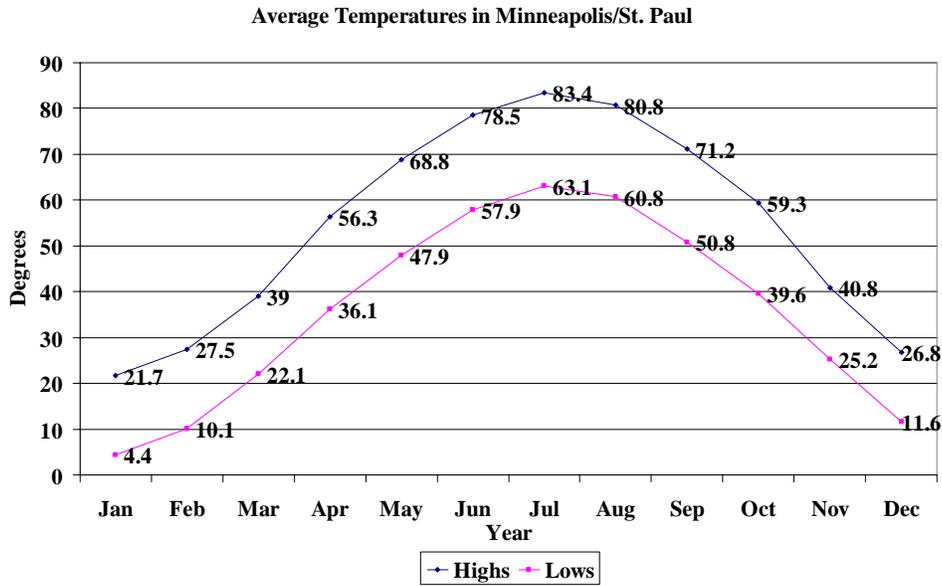


Table 4.10 – Midtown Greenway Average Daily Trips, by Month (2007-2009)

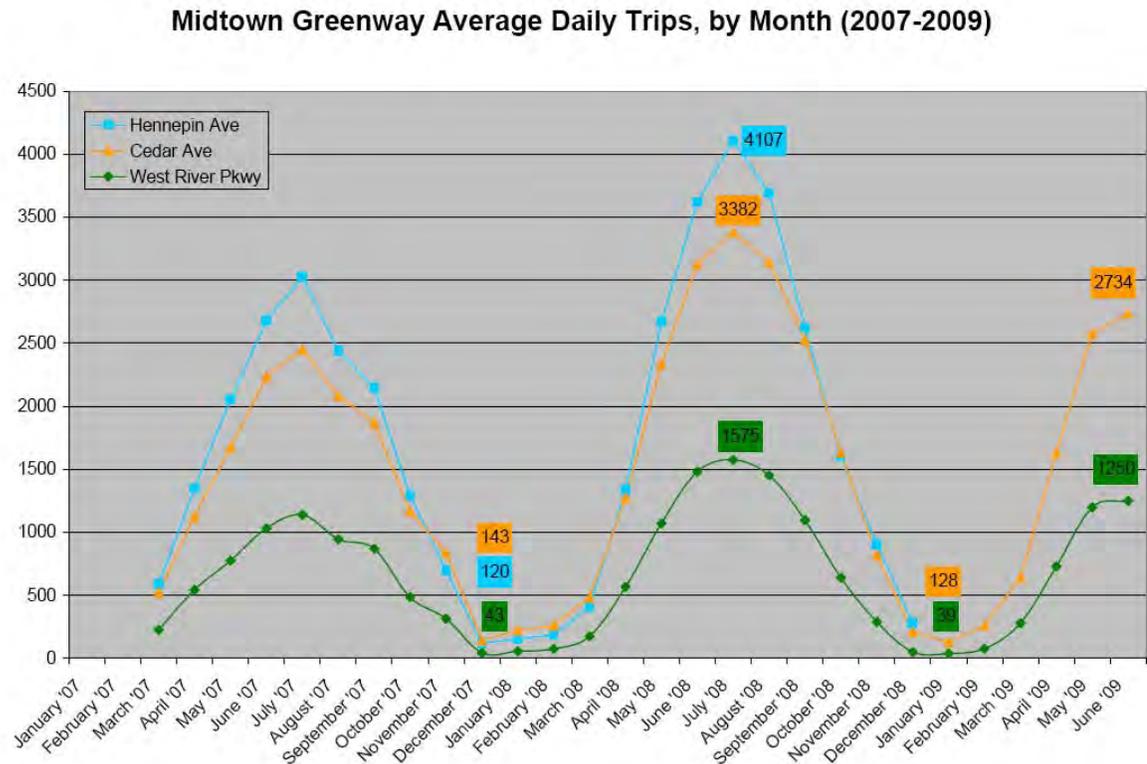
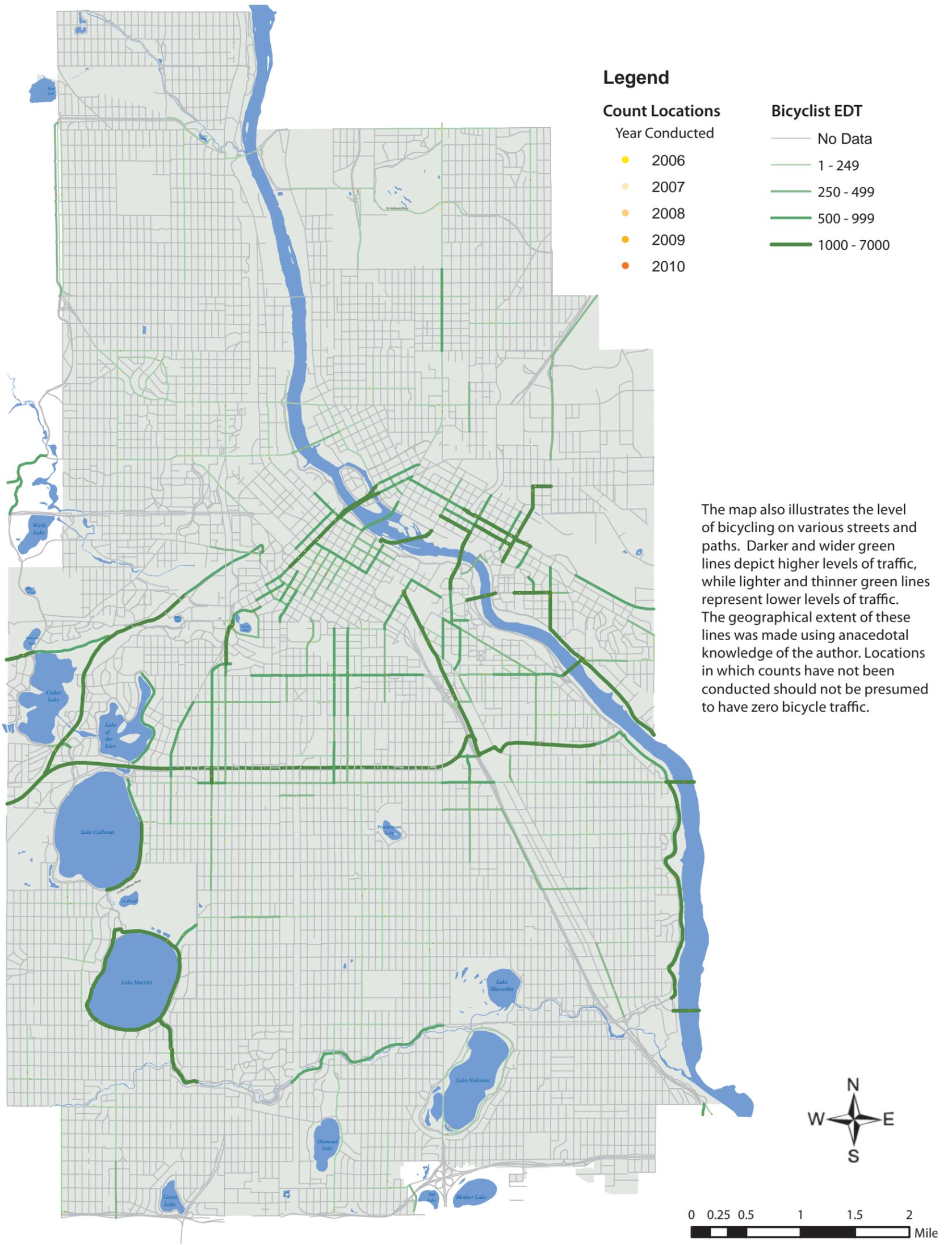


Figure 4.10 - City of Minneapolis 24-Hour Bicyclist Estimated Daily Traffic



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.

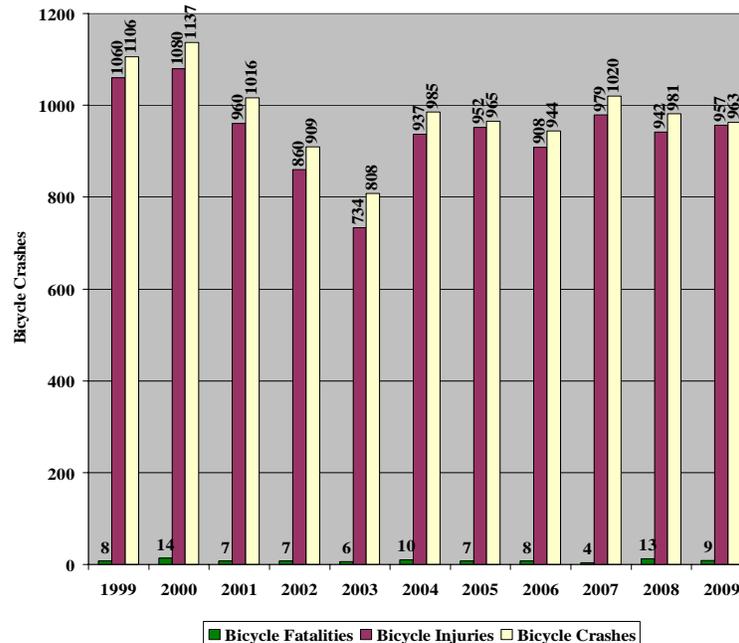


Above: North 7th Street bike lane

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



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.



Above: A ghost ride after a bicycle fatality

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

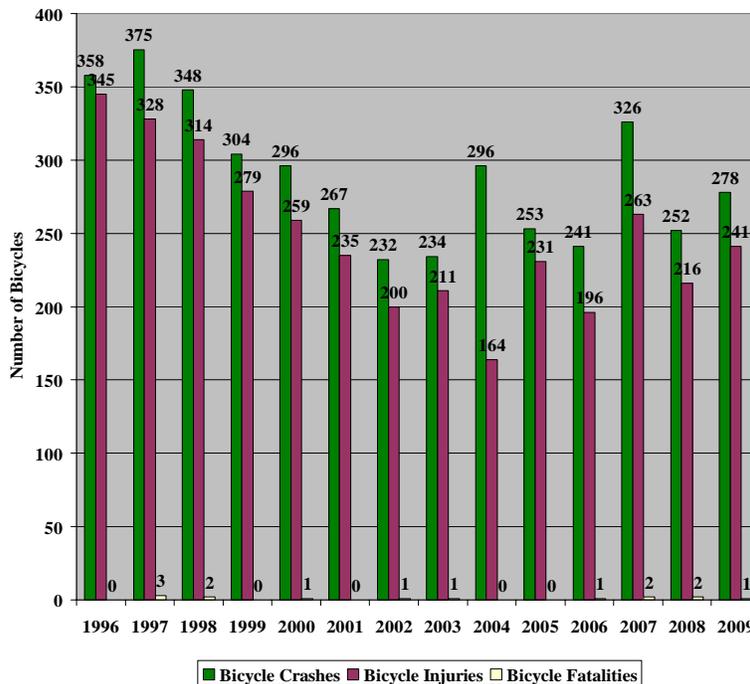
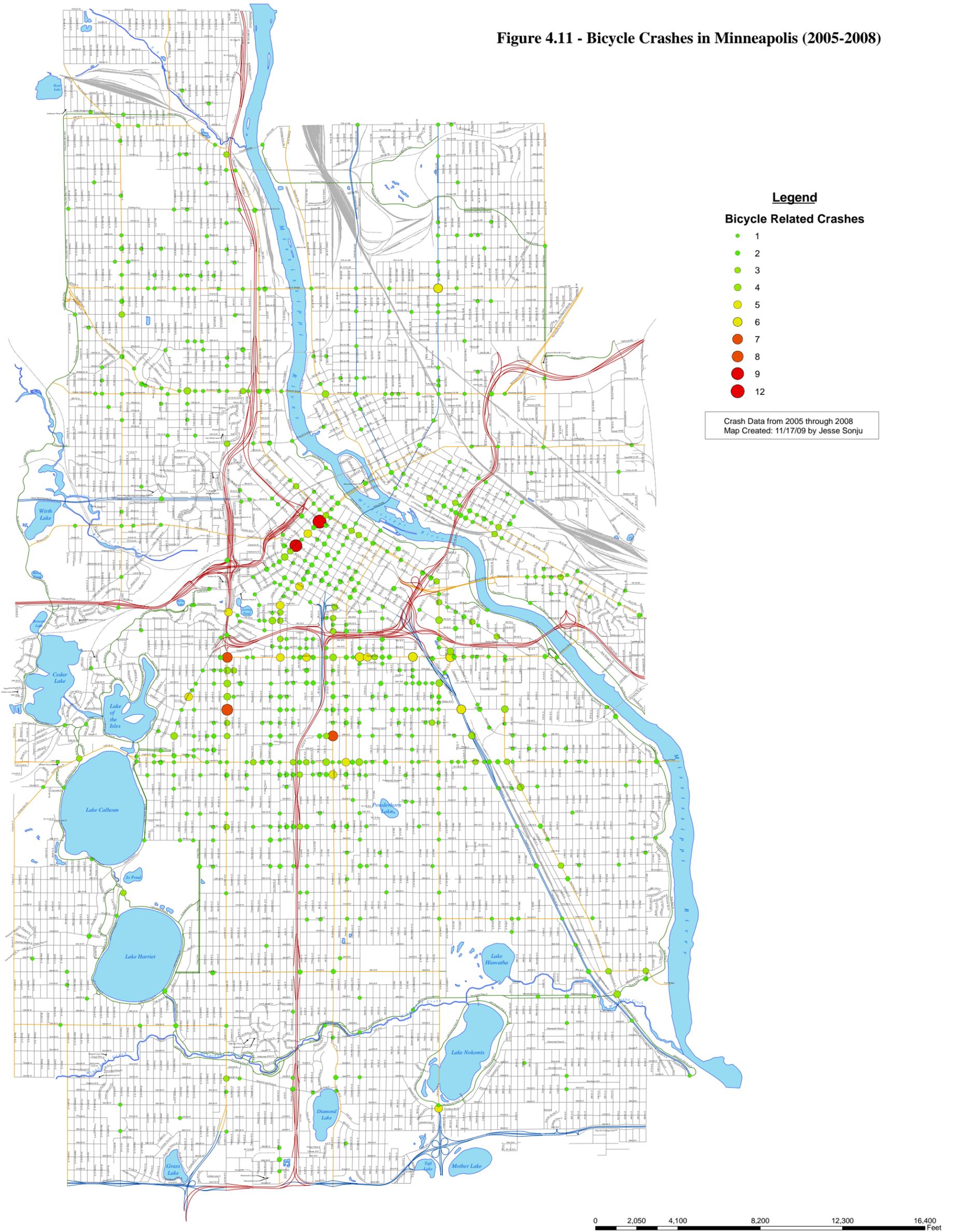


Figure 4.11 - Bicycle Crashes in Minneapolis (2005-2008)



Bicycle Crashes



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

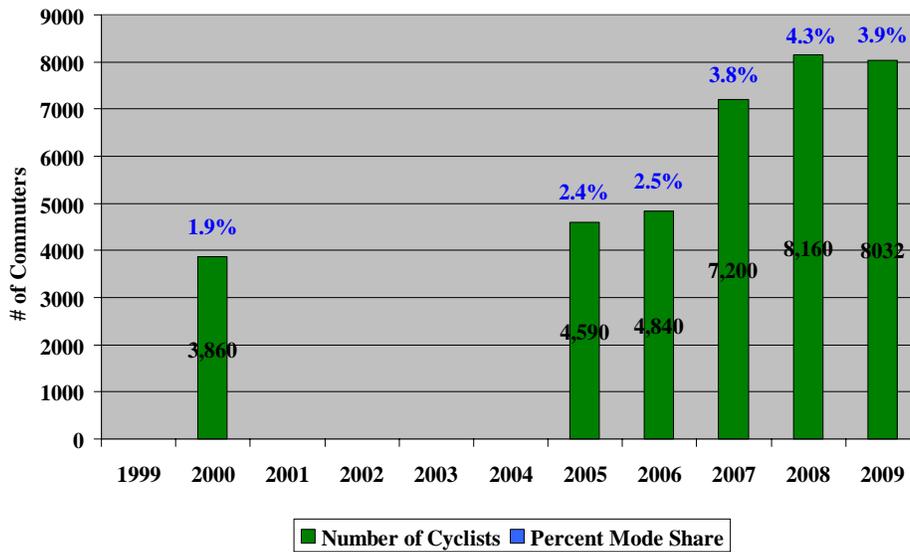
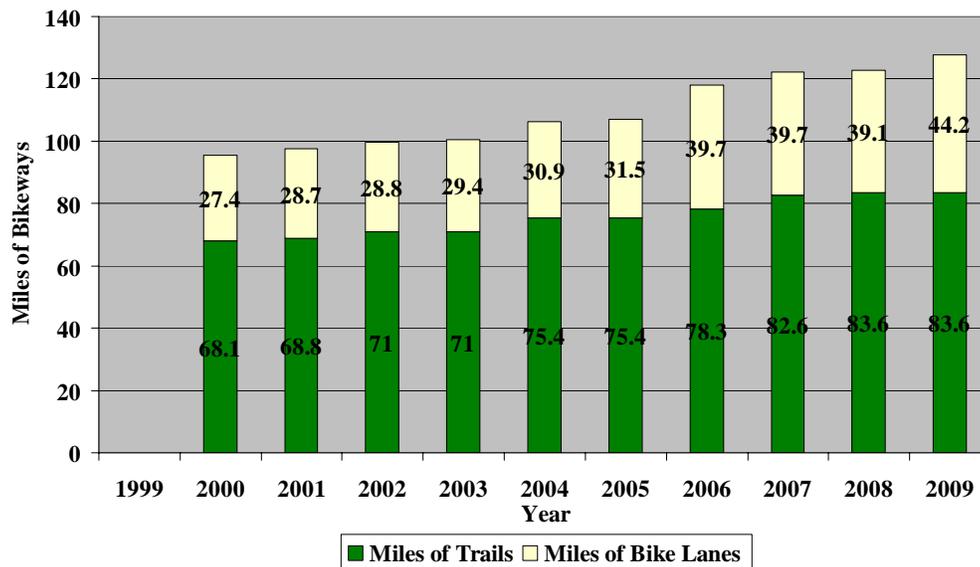
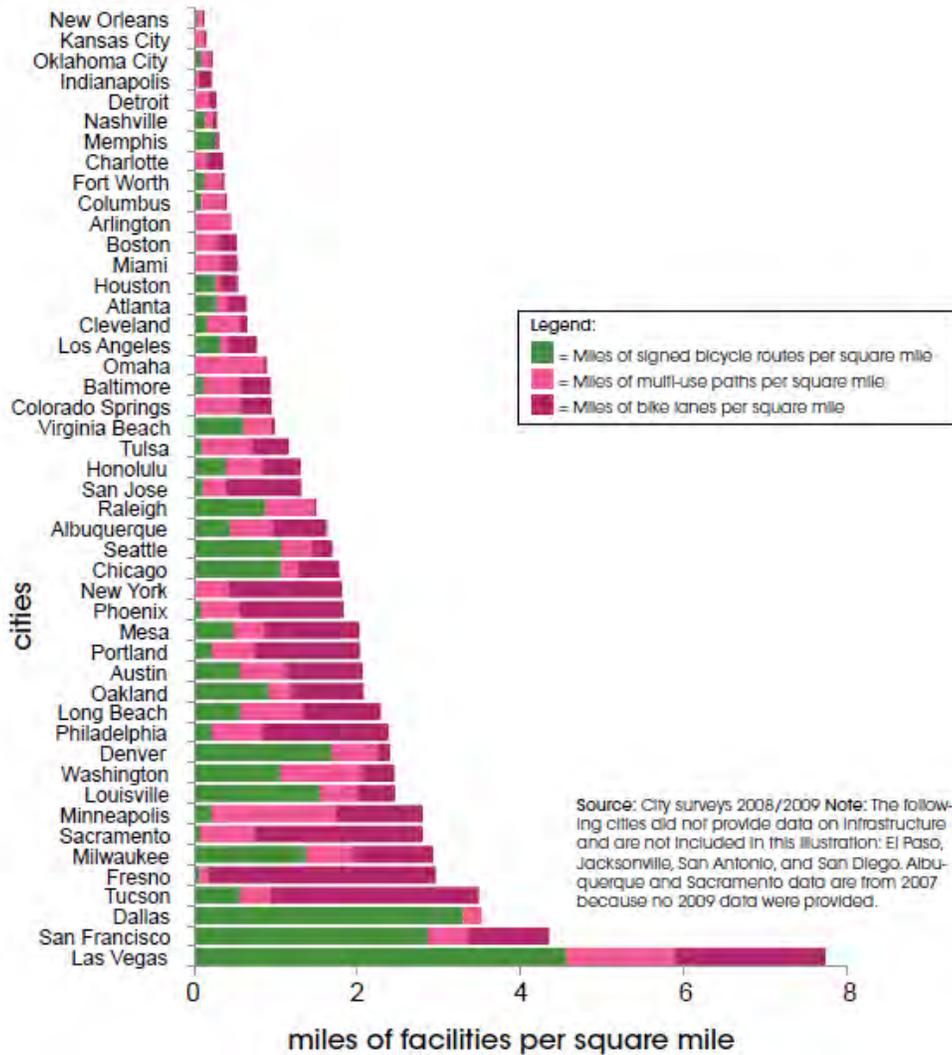


Table 4.14 – Miles of Bikeways (2000-2009)



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

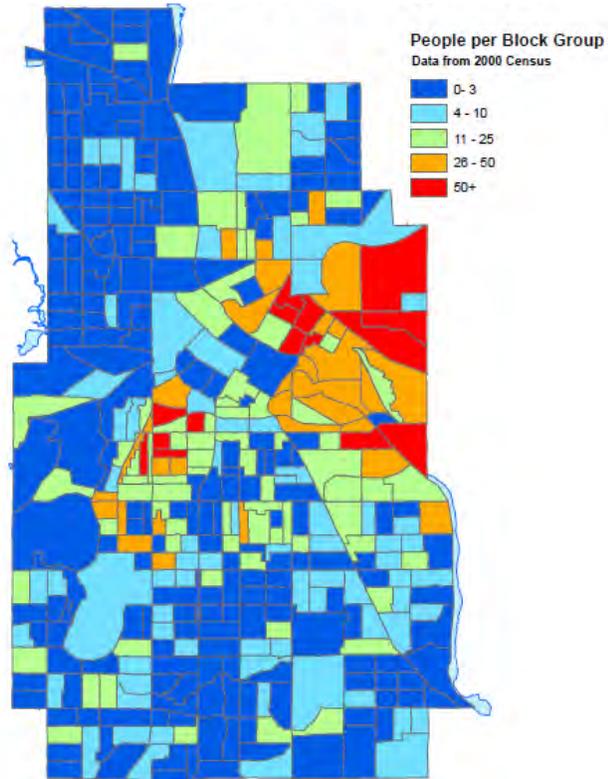
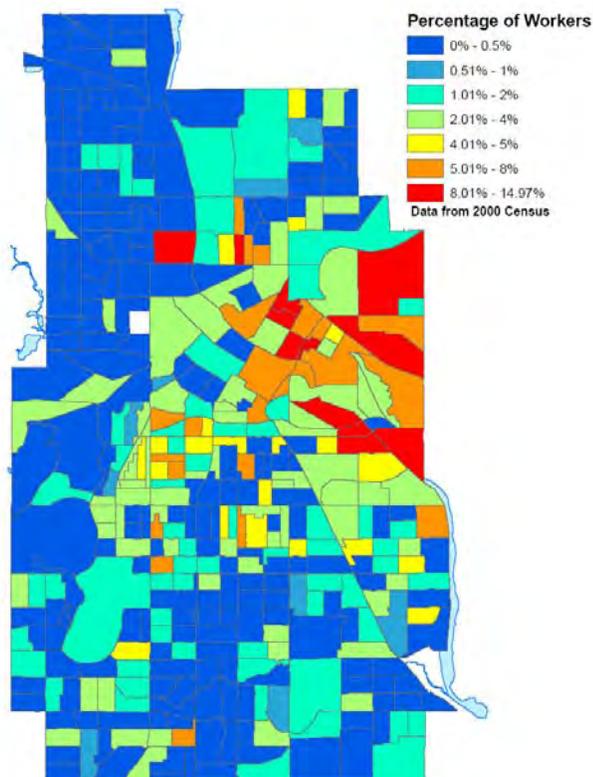


Figure 4.14 - Percent of Workers Commuting by Bicycle



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	Bloomington	Carver County	Dakota County	MPR B	Ramsey County	Scott County	St. Paul	Three Rivers	Washington 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