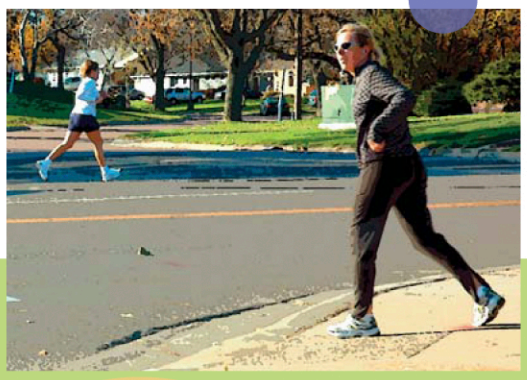
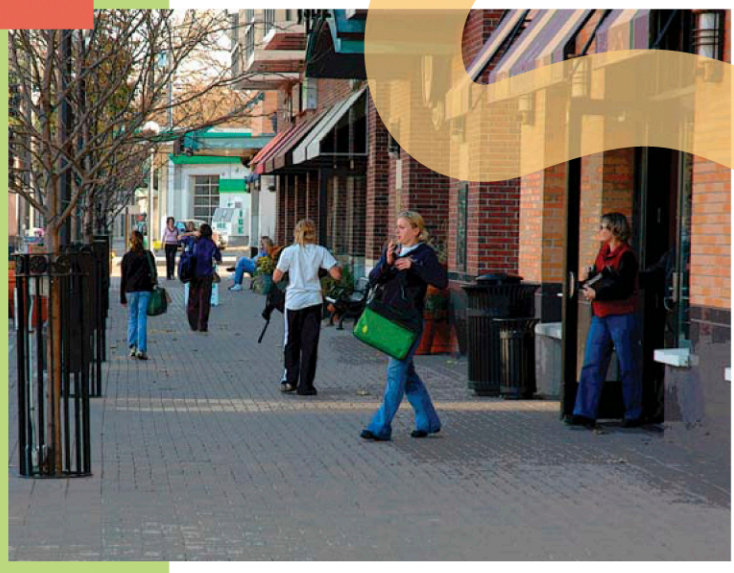
CITY OF ST. LOUIS PARK

Active Living Sidewalks and Trails Plan

A Bicycle and Pedestrian System Plan for the City of St. Louis Park





SRF CONSULTING GROUP, INC.

CITY OF ST. LOUIS PARK

ACTIVE LIVING: SIDEWALKS & TRAILS PLAN

January 2008

PREPARED BY:

SRF CONSULTING GROUP, INC.

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I. INTRODUCTION

Purpose

Physical inactivity has been identified as one of the leading causes of preventable death and disability in the State of Minnesota. Recognizing the significance of this statement, the City of St. Louis Park responded to the challenge by taking the initiative to make public health an element of City planning policy.

The City's commitment to the planning and implementation of initiatives such as "Vision St. Louis Park" has established St. Louis Park as a regional leader in creating a livable and active community. This plan will identify existing conditions and gaps in the pedestrian, bicycle and transit system, describes the analysis and recommends improvements to the bicycle, pedestrian and transit systems in St. Louis Park.

Vision

St. Louis Park actively engages its citizens in ways to make the City more livable. Following the successes of St. Louis Park's first Vision process in 1994, the City initiated a second Vision process in 2006. Eight Vision action teams were formed to address key issues: environment; transportation; sidewalks and trails; gathering places; community events; housing; arts and culture; and diversity. Each action team prepared a list of ideas that were compiled in a "Book of Dreams" that outlines areas of focus for the next ten years. The action teams also produced a list of recommended objectives and action plans.

The St. Louis Park City Council held an intensive two-day workshop in February 2007 to analyze and review the work of the Vision action teams. The result was a roadmap for the future of our community with specific goals for the immediate future. This roadmap will carry the city forward for the next decade.

Vision St. Louis Park provided City staff and elected officials an opportunity to hear from residents that the City's sidewalks and trails are a vital piece of the city's infrastructure. The Vision St. Louis Park process identified the need to continually improve the sidewalk and trail system to make it safe and easy for residents and visitors to travel around the city without using cars. These efforts can help reduce automobile reliance and improve the overall health of residents. The vision for this plan is as follows:

> St. Louis Park has a connected network of safe sidewalks and trails to encourage physical fitness and non-polluting transportation options. The city encourages trail use by members of all ages and physical abilities.

Background

Blue Cross and Blue Shield of Minnesota, an independent licensee of the Blue Cross and Blue Shield Association is the primary financial sponsor of St. Louis Park's Active Living project. Blue Cross initiated a program called Active Community Planning which provided funding for several Minnesota communities to enhance their planning process to better support physically active lifestyles. It is part of Blue Cross' long-term initiative called Prevention Minnesota to improve the health of all Minnesotans. Prevention Minnesota tackles preventable heart disease and cancers by addressing their root causes — tobacco use, physical inactivity, and unhealthy eating.

In 1999, St. Louis Park created a Trails and Sidewalks Master Plan that identified existing and potential activity nodes, transit stops, regional links, and natural resource destinations. It also identified physical impediments and hazards, and set priorities for building and improving crossings, sidewalks, trails and bikeways.

Since 1999, St. Louis Park has added:

- More than seven miles of new sidewalks.
- Two and one half miles of new trails.
- New regional trail connections to provide neighborhood access to the regional system.
- Intersection crossing safety improvements such as countdown timers and enhanced signage throughout the City.
- A pedestrian bridge over CR 25 that will link Carpenter Park and City Hall with the Cedar Lake Regional Trail and Beltline Boulevard.

Active Community Living

The increasing rates of obesity in children and adults in our society are signs that as a whole, we are less active than previous generations. Fewer children walk or bicycle to school and many of the short trips we take are accomplished using a car. This is partly habitual and many times it is a matter of convenience. It is also because we have designed our communities so that it is easier to travel by automobile than on foot or bicycle.

"Active Living" is a way of life that integrates physical activity into daily routines. Communities can be proactive in promoting active living lifestyles by providing safe and efficient pedestrian and bicycle transportation systems. These include sidewalks, trails and safe crossings of highways, major streets and railroads. Making a City more walkable and more bikable is a major component of creating an environment where residents can have a more active lifestyle. Creating a viable pedestrian network provides residents the opportunity to walk to school, work, grocery stores, bus stops, or future light rail transit stations.

Distances that are walk-able and bike-able vary from person to person, depending on a person's age, health and physical condition. The US Green Building Council, along with the Congress for the New Urbanism and Natural Resources Defense Council is developing a Leadership in Energy and Environmental in Design (LEED) rating system for neighborhood development called LEED-ND. LEED-ND identifies a walk-able site as being within one-half mile of major transit stops such as light rail or bus rapid transit. Bikable distances, according to the LEED-ND system is three miles from point-to-point, measured along the route (US Green Building Council, 2007).

St. Louis Park citizens recently indicated through the Vision St. Louis Park process that improving pedestrian and bicycle connectivity in their community is a top priority. Schools, parks and public buildings are particularly important destinations to citizens. The City of St. Louis Park identified several community gathering places that are becoming focal points for mixed-used development. The Excelsior & Grand development on Excelsior Boulevard is a nationally recognized example of a revitalized community space specifically designed to be a place where people can live, work, shop and entertain in a single urban area.

Community Gathering Places
Duke Site
Texa-Tonka
Knollwood
Hoigaard Village
Excelsior & Grand

Table 1: Community Gathering Places.

A community that promotes active living strives to provide residents with many forms of alternative transportation to reduce the dependence on cars and to inspire more pedestrian and bicycle activity. St. Louis Park has numerous existing transit opportunities that include a regional bus system with multiple routes through and around the City, two regional trails, and taxi service. One of the regional trail corridors is also a potential light rail corridor that would

provide service from the southwest metro to downtown Minneapolis, directly through St. Louis Park. There are three future light rail transit stations identified in St. Louis Park located along the Southwest LRT corridor.

Safe Routes to School

The federal Safe Routes to School program, as part of the federal transportation bill, is designed to improve the conditions and quality of bicycling and walking to school. The goal of the program is to reverse the 30 year decline in the number of children walking to school and reintroduce opportunities for regular physical activity. This plan looks closely at existing pedestrian connections to schools.

II. Analysis

The 1999 Sidewalk and Trail Master Plan provided a strategy for the City of St. Louis Park to upgrade and expand the sidewalk and trail system. The City completed several important projects over the last eight years including the construction of a pedestrian bridge over County Road 25 at Ottawa Avenue. Crossing improvements such as countdown timers have been added to a number of intersections around the City. Progress since 1999 is shown in Figure 1.

Public Involvement

At the outset of this process, the City invited members of the community to participate on a Community Advisory Committee (CAC) to ensure that issues and concerns of citizens are addressed by the plan. Members of the CAC represent multiple neighborhoods, local businesses and many are bicycle and pedestrian advocates. The CAC is a very knowledgeable group of local citizens and experts that agreed to share their knowledge and help direct the Sidewalks and Trails study. The CAC participated in four meetings and discussed the issues and opportunities of St. Louis Park's network of sidewalks and trails. The CAC was engaged in creating the list of goals and objectives for the study and provided feedback on the current state of the sidewalk and trails system, providing input on areas of concern and ideas for system-wide improvements.

Public input was a key component of the study. Public input was gathered at a community workshop held on May 17, 2007 and through an on-line survey available on the St. Louis Park website. Thirty five members of the community participated in the community workshop and 204 on-line surveys were completed and returned to the City.

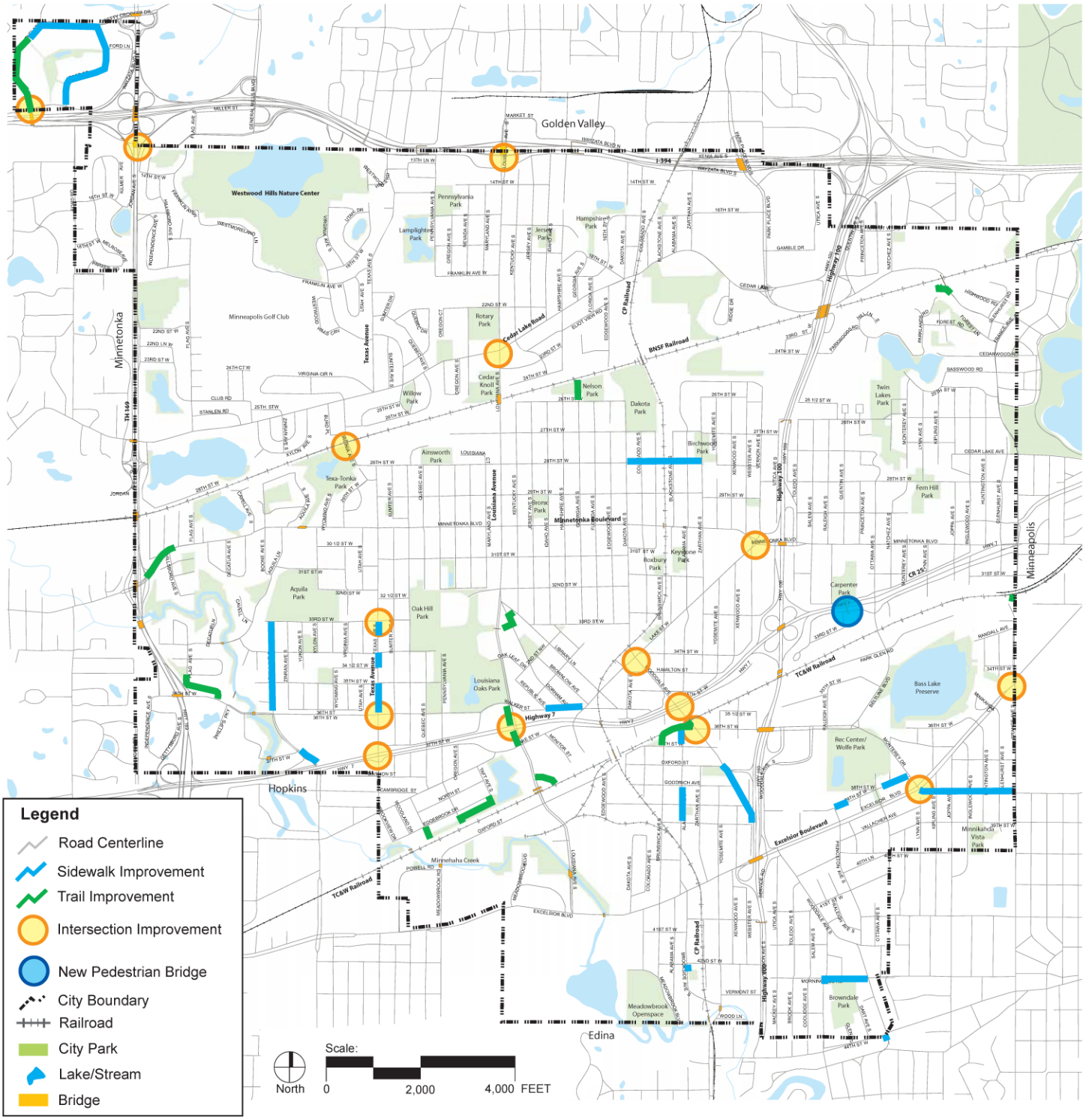

Figure 1: Progress Since 1999

Other Studies
Hennepin County conducted a study in 2006 to identify the major gaps in its bicycle route network. The Bicycle Gap Study identified ninety gaps around the county, three of which are in or adjacent to St. Louis Park. The three gaps include France Avenue from the Midtown Greenway south to 80th Street; Minnetonka Boulevard from TH-100 to the Kenilworth Trail connection at Lake Street; and Minnetonka Boulevard from west of Oakridge Road to TH-100.

EXISTING SYSTEM

Regional System
The Minneapolis and St. Paul metropolitan area is well served by a wide-ranging regional park and trail system. Regional trails are developed in partnership with citizens, municipalities, counties, Three Rivers Park District and the Metropolitan Council. In St. Louis Park, the North Cedar Lake LRT Regional Trail and the Cedar Lake LRT Regional Trail bisect the City from the southwest to the east. Both trails are operated by Three Rivers Park District and both connect with trails in the City of Minneapolis including the Kenilworth Trail, the Cedar Lake Trail and the Midtown Greenway (Figure 2).

Hennepin County operates a network of on-road bike lanes. In St. Louis Park, Minnetonka Boulevard is identified as on-road bike routes from the City boundary with Minnetonka east to Highway 100.

As a first-ring suburb, St. Louis Park reflects both urban and suburban development patterns. Its streets, roadways, highways and sidewalks connect with neighboring cities as part of the large urban grid of the core metropolitan area. These connections increase the effectiveness of the pedestrian and bicycle systems within St Louis Park because it allows residents to move beyond the City limits on safe, pedestrian-friendly infrastructure (Figure 3, Adjacent Community Connections).

Bicycle and Pedestrian System
The Vision St. Louis Park process identified sidewalk gaps as a major barrier to making the City walkable. As the following diagram illustrates, certain neighborhoods in the City have more complete sidewalk coverage. Even where there is a significant sidewalk network, key connections are often missing, creating holes in the City sidewalk system that makes pedestrian travel difficult. Sidewalks serve many purposes such as providing a safe place for children to play and space for residents to walk, protected from roadway traffic.

St. Louis Park has a network of City-operated trails. The trails are located in or link to City parks and link to the two regional trails (Figure 4, Existing Sidewalks and Trails).

Residents continually identify two great shortcomings of the St. Louis Park Bicycle and pedestrian system. The first is a lack of east-west sidewalks throughout the City and the second is a lack of on-street bike lanes. In addition, the City Ordinance requires sidewalks on both sides of all streets. This is a tall order that will take many years to complete but identifying the most needed gaps in the sidewalk system will add to the work that the City has completed since the 1999 Sidewalks and Trails Plan.

Intersection Safety Analysis
The residents of St. Louis Park and the CAC identified pedestrian crossings as one of the most critical elements in the City's sidewalk and trail infrastructure. To identify the most dangerous intersections for pedestrians and bicyclists, the design team analyzed crash data from 2001-2006. The following map (Figure 5, Intersection Safety Analysis) identifies intersections with reported crashes that involved pedestrians and bicyclists during that six-year period.

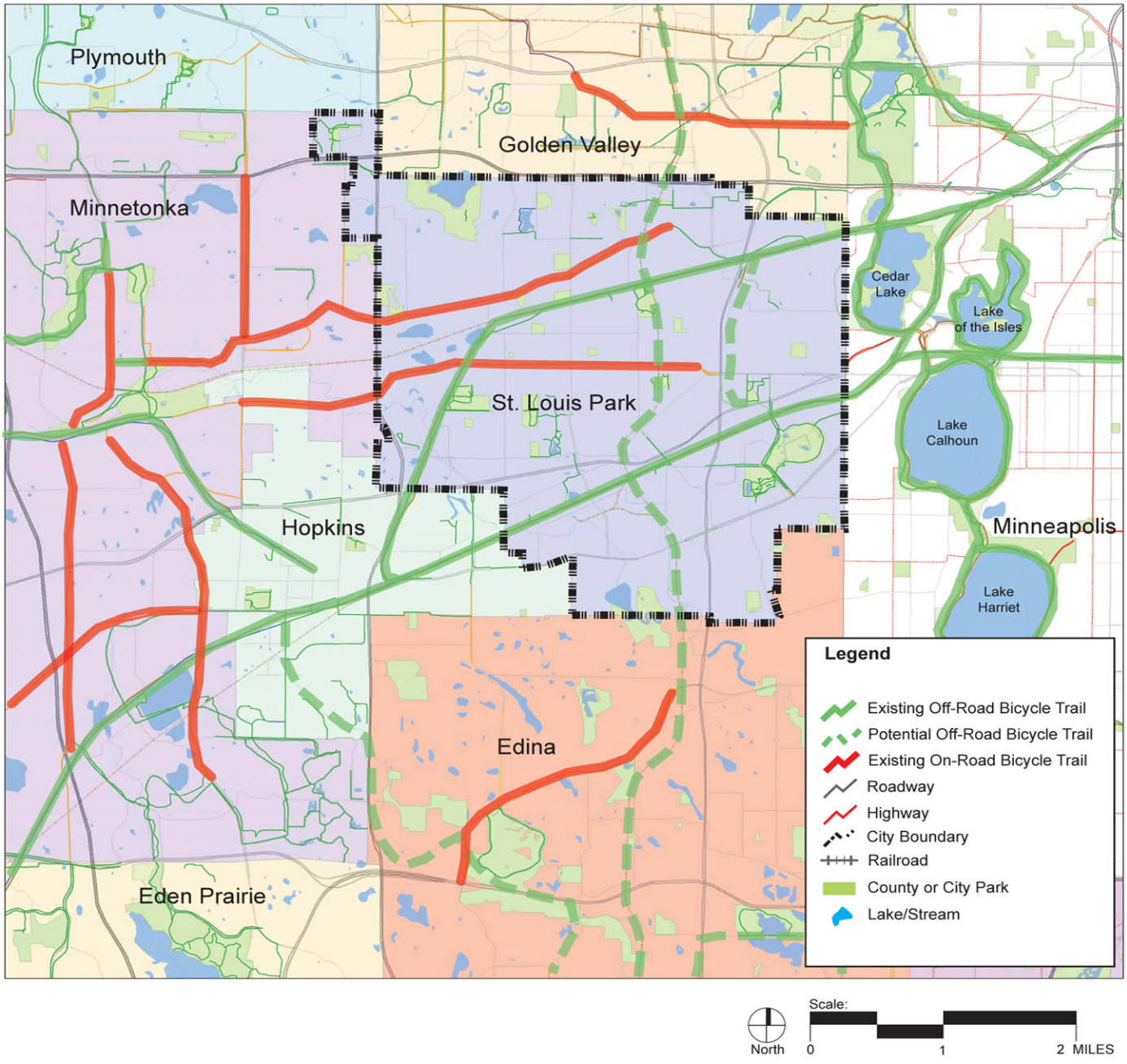

Figure 2: Regional Context Map

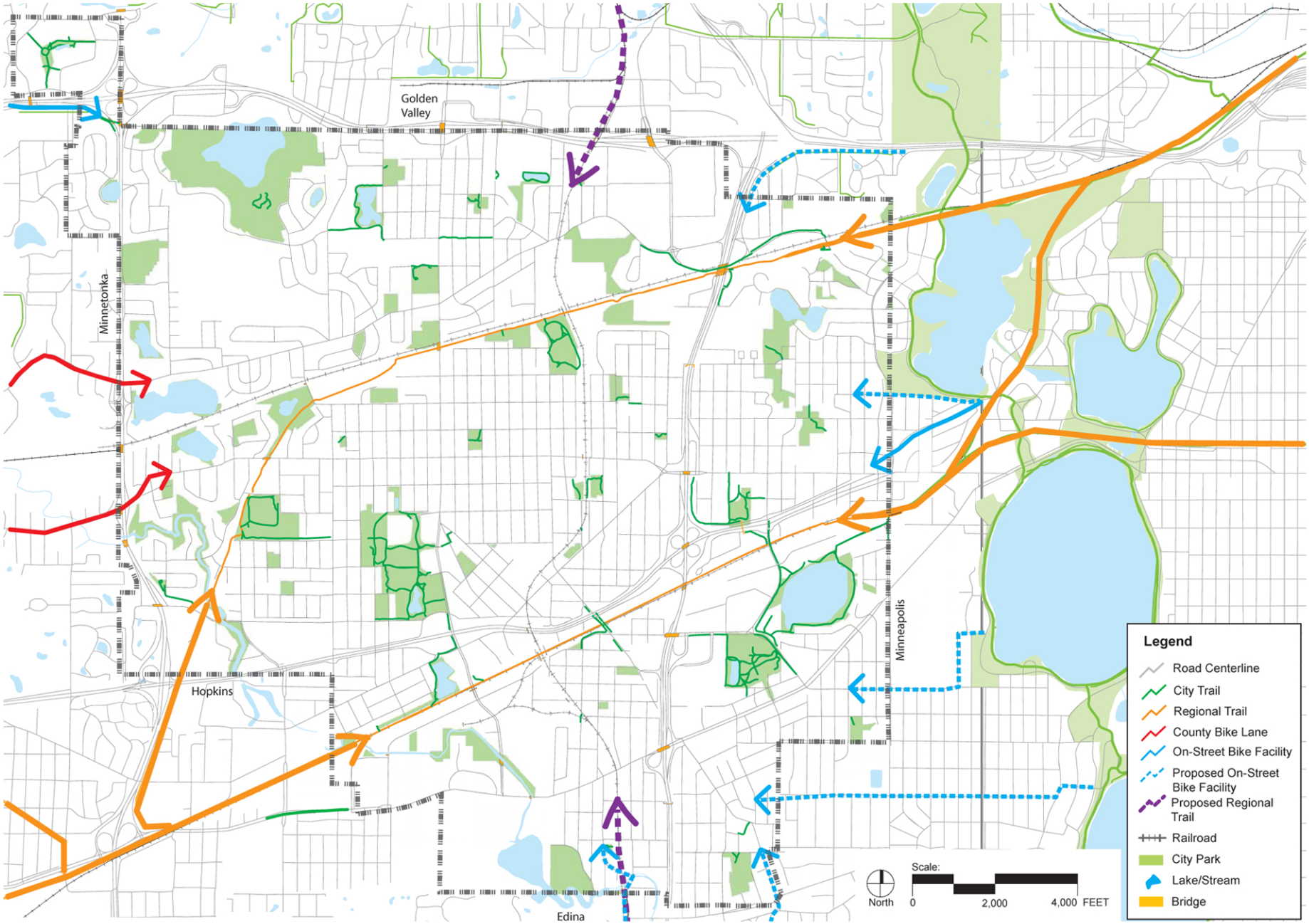

Figure 3: Adjacent Community Connections

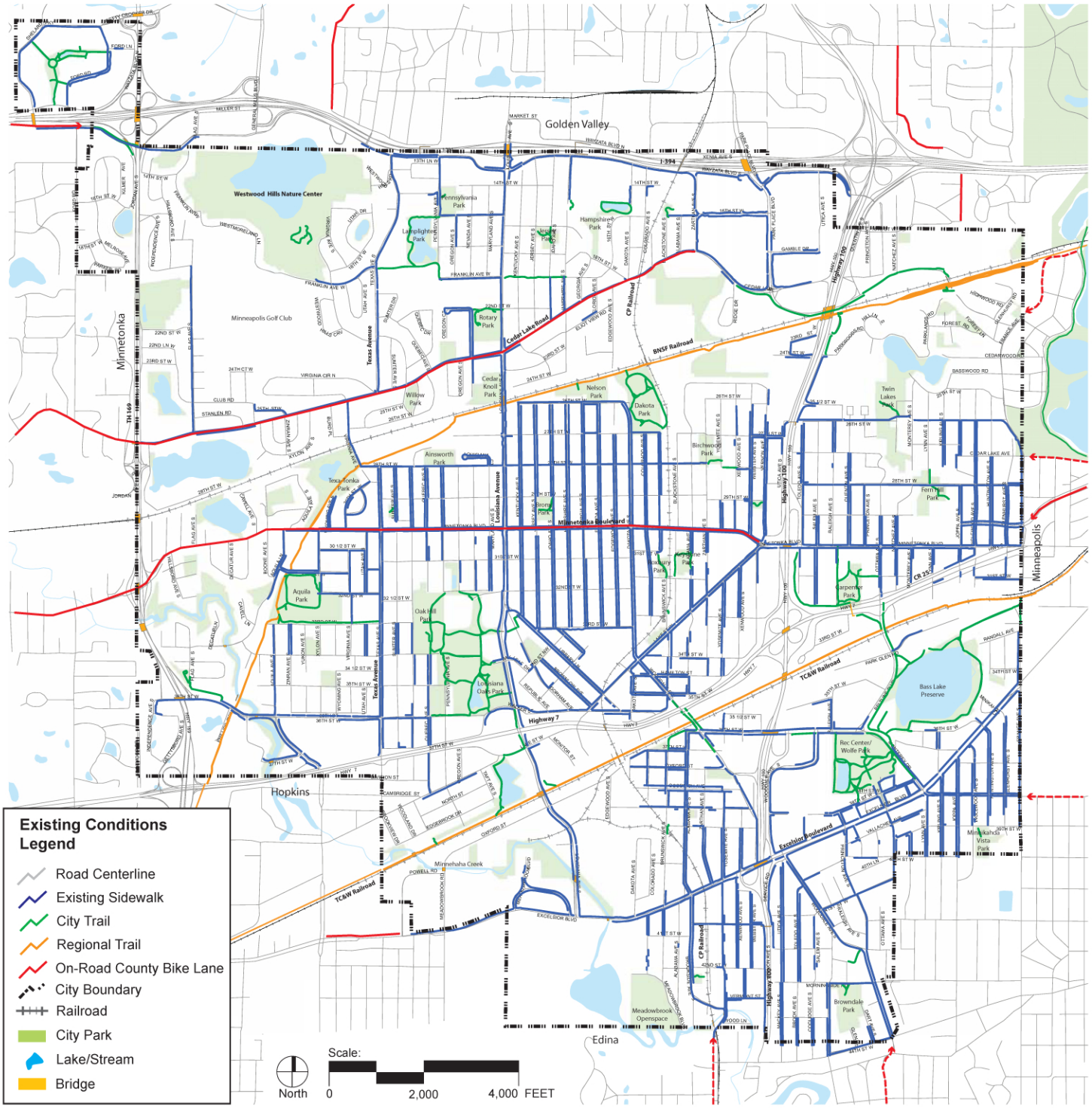

Figure 4: Existing Sidewalks and Trails

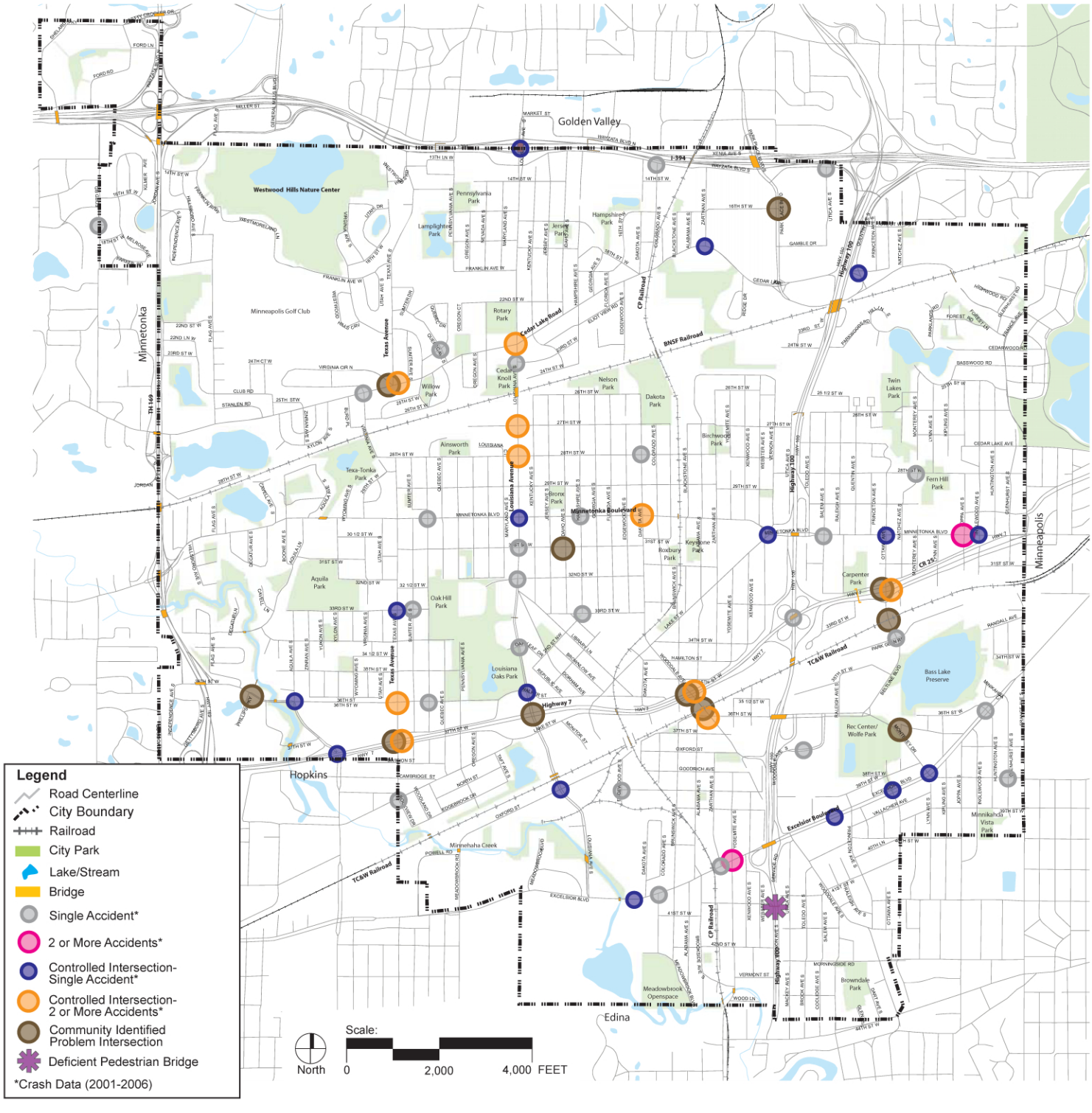

Figure 5: Intersection Safety Analysis

Public Transit Routes
St. Louis Park has 12 Metro Transit bus routes that carry passengers around the community, to downtown Minneapolis and into the neighboring cities. The bus routes through St. Louis Park run along major streets and roadways and through neighborhoods on key connecting streets. They connect major businesses such as Methodist Hospital and commercial centers such as Texa-Tonka both within the City and to major destinations outside the City. St. Louis Park maintains two park and ride lots along Louisiana Avenue at Minnetonka Boulevard and W. 27th Street. There are two Metro Transit park and ride lots along I-394 at Louisiana and Park Place Boulevard and a third on Cedar Lake Road at Flag Avenue. The existing transit map, Figure 6, identifies the major bus routes, the park and ride lots and the location of all bus stop shelters.

Wayfinding
Wayfinding elements for pedestrians and bicyclists help users to find their way, identify pedestrian or bicycle routes and may highlight interesting or important information. The City of St. Louis Park does not presently use pedestrian or bicycle wayfinding elements other than standard street signage.


Three Rivers Park District wayfinding signage.

Three Rivers Park District maintains trail kiosks and directional sign poles along their regional trails. The kiosks include an aerial map that highlights the trail routes and identifies nearby public services, parks and recreation features. The directional sign poles point in the direction of popular destinations and provide distances in miles.

Hennepin County identifies county bicycle routes by posting Bike Route signs on the shoulder of roads that serve as bike routes. County bicycle routes in St. Louis Park include Minnetonka Boulevard from TH 169 to TH 100.


Hennepin County bicycle lane signage.

External Opportunities
Many of St. Louis Park's neighboring cities are in the process of updating or creating bicycle or pedestrian plans that may provide opportunities to link trails and sidewalk systems. The City of Edina recently created the Bike Edina Taskforce and has hired a consultant to prepare a comprehensive bike plan. Preliminary maps indicate that the primary north/south routes proposed by the Bike Edina Taskforce will match the routes recommended by this plan.

The City of Minneapolis recently issued a request for proposals to prepare a City-wide Pedestrian Master Plan to provide the City with clear priorities, tools and programs to increase and improve walking in Minneapolis. This will provide the City of St. Louis Park the opportunity to work closely with the City of Minneapolis to create seamless pedestrian connections between the two cities.

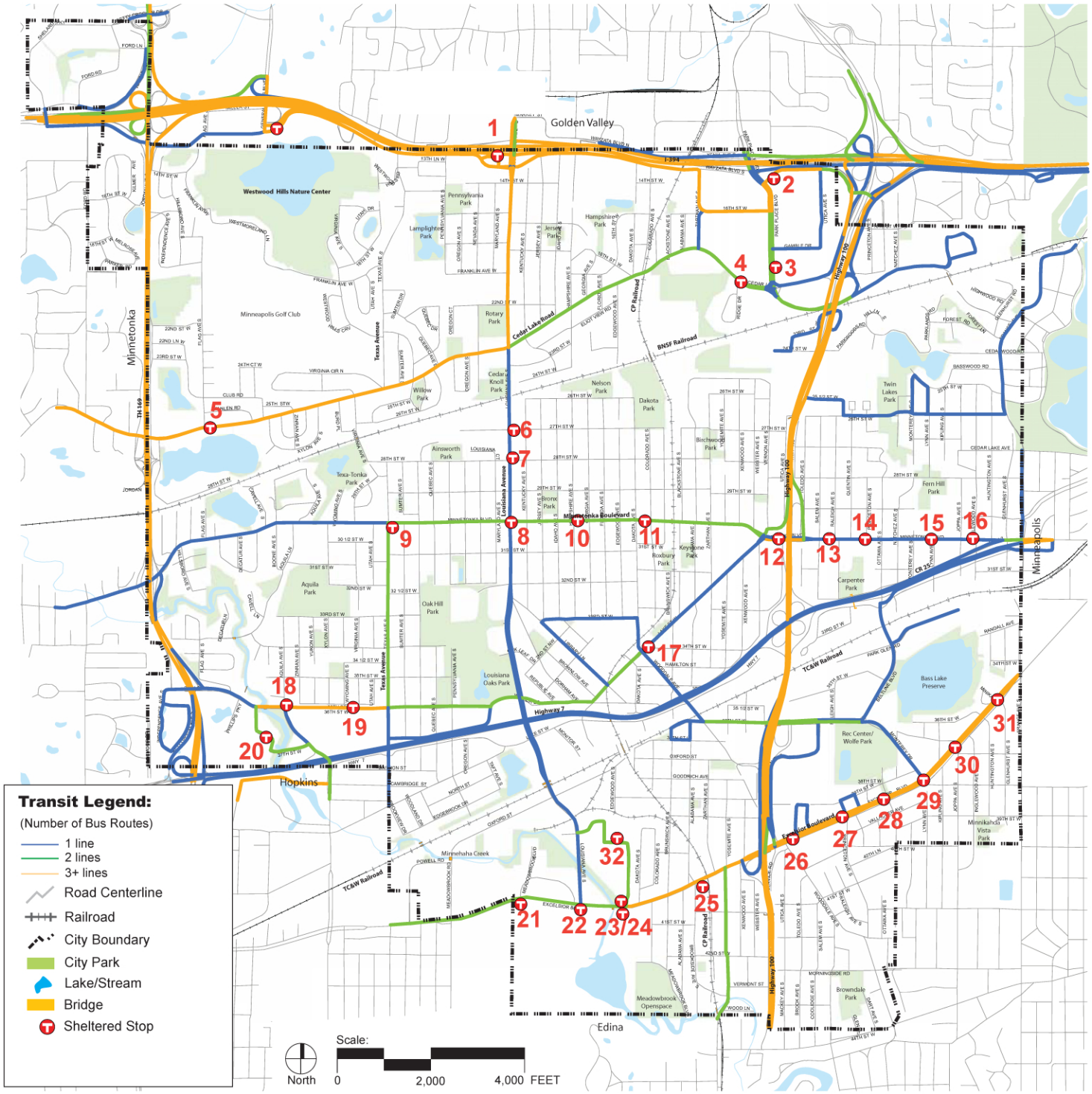

Figure 6: Existing Bus Routes and Shelters

The Cities of Plymouth and Minnetonka are preparing to undertake or are currently conducting trail and sidewalk planning studies. Findings from these reports will be reviewed and integrated into this plan to provide efficient pedestrian and bicycle connections between St. Louis Park and neighboring cities.

Kenilworth Trail in Minneapolis.

System Diagrams

St. Louis Park has many parks, public buildings, community gathering places, transit stops, and schools that are destinations for pedestrians and bicycle users. Showing these elements on a map provides useful insight about their proximity to sidewalks, bicycle trails, and public transit routes. The following diagrams assist in understanding the existing conditions of pedestrian, bicycle and transportation infrastructure and how well the system serves the many destinations within St. Louis Park (Figures 7-12).

Figure 7: ¼ Mile Conceptual Sidewalk Grid.

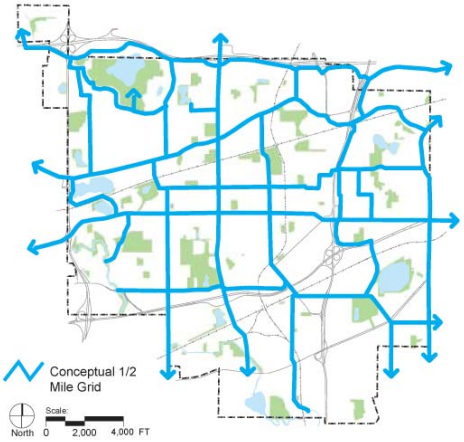

Figure 8: ½ Mile Conceptual Bicycle Grid.

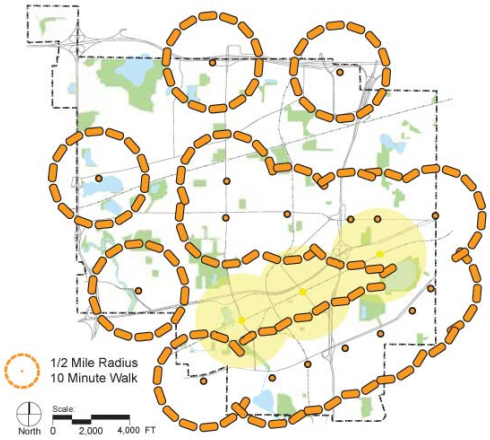

Figure 9: Walking Distance to Transit Stops.

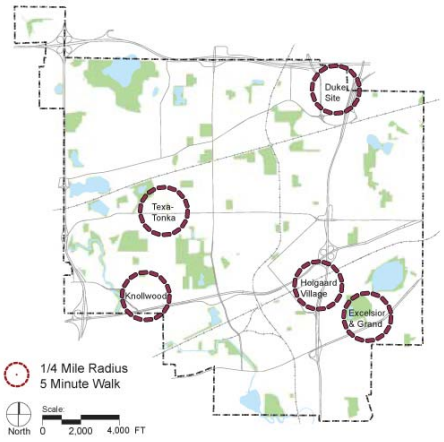

Figure 10: Walking Distance to Community Gathering Centers.

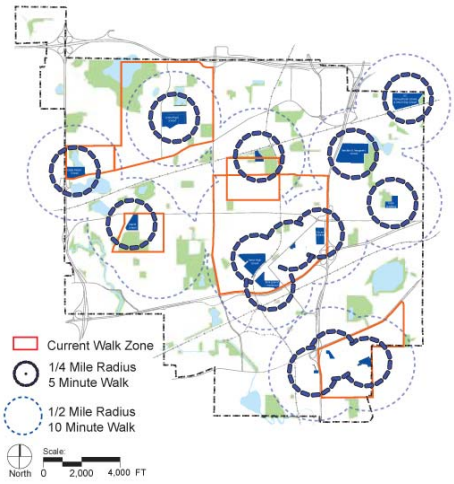

Figure 11: Walking Distance to Schools.

Figure 12: Walking Distance to Parks.

St. Louis Park developed rapidly following World War II. Approximately sixty percent of the homes in St. Louis Park were built from the late 1940s to the early 1950s. At the time, great efforts were made to pave streets and expand sewer and water systems to meet the new housing demand. Sidewalks were constructed during the initial development, but the system is incomplete and gaps remain today. Some streets have sidewalks on only one or two lots while other areas of the City have well established north/south sidewalks but no east/west sidewalks. Pedestrian access to schools, public buildings and parks can be difficult because the sidewalk system does not facilitate safe and consistent pedestrian connections. Figure 7 identifies schematic major sidewalk routes, spaced approximately one-quarter mile apart.

In addition to the two regional trails in St. Louis Park, the City has trails within parks and a limited network of trails connecting certain parks. City trails also provide connections to the North Cedar Lake LRT Regional Trail and the Cedar Lake LRT Regional Trail. St. Louis Park is evaluating opportunities for on-street bicycle facilities. Figure 8 identifies schematic bicycle routes, approximately every one-half mile.

III. Bicycle and Pedestrian Plan

St. Louis Park residents benefit from two significant regional trails, a network of sidewalks that encompass a large portion of the City and city trails within an extensive park system. This system can be improved and in doing so, St. Louis Park will become a more livable community in which its residents can lead more active, healthy lives. Filling in gaps in the sidewalk system, bridging barriers in the community like railroads and highways, improving pedestrian crossings and providing places for bicycle parking will improve the existing sidewalk and trail system in St. Louis Park.

The following goals for the bicycle and pedestrian systems in St. Louis Park incorporate the goals from the 1999 plan, input from the Community Advisory Committee and the public.

Bicycle and Pedestrian Goals

1. Develop an interconnected network of pedestrian and bicycle routes throughout the City that is linked to transit systems in order to provide alternatives to automobile travel for residents and workers in the community, including children, seniors and the disabled.
2. Establish safe crossings of highways, arterial roads and rail corridors using innovative traffic calming strategies, improved traffic control systems and, where possible, grade separations.
3. Develop safe links to schools, commercial hubs, employment centers, institutions and transit facilities.
4. Develop recreational pathways that link neighborhoods to parks and natural areas, providing opportunities to improve the health and well-being of community residents and workers.
5. Make connections to regional and recreational trails to link St. Louis Park to larger metropolitan open space systems and destinations.
6. Create a cohesive, well-designed pedestrian system that includes a coordinated approach for signs and orientation, standard designs for street crossings and additional "user-friendly" amenities such as rest areas, information kiosks and upgraded landscaping.
7. Incorporate strategies for short- and long-term funding of proposed improvements and maintenance of bicycle and pedestrian systems and transit stops.
8. Develop phasing strategies for implementation based on priorities, needs and available resources.

Objectives

1. Construct four to five additional sidewalks to fill gaps in City and neighborhood sidewalk systems.
2. Develop a comprehensive sidewalk system within one-half mile radius of all community parks and facilities to make walking to and from community parks pleasant, safe and convenient.
3. Create neighborhood pedestrian sidewalk connections to major transit hubs, including bus stops and future light rail transit stations.
4. Provide tools for trail users to determine their present location and nearby points of interest.
5. Reduce the number and severity of pedestrian and bicycle accidents in St. Louis Park.
6. Create inviting sidewalks, trails and transit stops.
7. Make all pedestrian bridges accessible for pedestrians and bicycles.
8. Provide comfortable, safe and accessible transit stops for pedestrians.
9. Establish a network of tree-lined streets with landscaped medians and boulevards accommodate pedestrians and bicycles, calm traffic and connect community parks and/or community gathering centers.
10. Keep trails and sidewalks clear and safe for bicyclists and pedestrians year-round.
11. Create north/south trail(s) that connect with other local and regional trails.

12. Promote installation of bicycle parking at public buildings, commercial buildings and major transit stops.
13. Improve regional trail connections to neighborhoods that are adjacent to regional trail corridors.
14. Educate bicycle riders and automobile drivers about their duties and responsibilities while on the road.
15. Accommodate walking and bicycling in all planning efforts including public, commercial and residential projects within the City.
16. Promote bicycle commuting and recreation through education and special events.

Strategies

Sidewalks

- Fill gaps in sidewalk system, based on the conceptual sidewalk grid identified in the analysis phase and prioritize additional sidewalk construction to provide connections near schools, parks and community gathering places.
- Install pedestrian-friendly street elements to sidewalks such as bump-outs, curb cuts, bollards, banner poles, bicycle racks, trash receptacles and enhanced paving.
- Add median and/or boulevard landscape plantings to create a safer and more pleasant pedestrian environment.
- Repair existing sidewalks to maintain high level of service across entire City sidewalk network.
- Use innovative designs to calm traffic and enhance streetscapes to make streets safer and more pleasant for pedestrians.
- Develop a comprehensive sidewalk system within one-quarter mile radius of schools to provide children and families safe connections.
- Develop a comprehensive sidewalk system within one-quarter mile radius of community gathering spaces to make walking to and from community gathering places pleasant, safe and convenient.
- Provide local sidewalk connections within one-half mile of major bus stops and future light rail transit stations.

Trails

- Mark distances of certain trail loops or routes at trail entrances.
- Add directional signage along trails that point out the location of public buildings, schools and parks.
- Develop consistent wayfinding signage on all trails and bikeways to improve the pedestrian experience.
- Add distances for exercise routes (eg. one and one-half miles around Bass Lake).
- Consider lighting on City trails located in parks such that the lights do not disrupt neighbors.
- Continue police patrols on City trails using bicycles, squad cars, and on foot.
- Manage trail-side vegetation to improve sightlines along trails.
- Coordinate future independent trail planning with adjacent communities.
- Widen the trail on the south side of Walker Park and Louisiana Avenue Park to ten feet.

On-Street Bicycle Facilities

- Extend Hennepin County's on-street bicycle route east to Minneapolis along Minnetonka Boulevard and east along Cedar Lake Road to the pedestrian bridge over the North Cedar Lake Regional Trail.
- Connect the City's on-street bicycle routes with the Hennepin County bicycle route on Minnetonka Boulevard and the City bicycle route on Cedar Lake Road.
- Provide additional maintenance for roads with on-street bike lanes/routes (i.e. street sweeping, snow removal on shoulders).
- Link on-street bike lanes in adjacent communities with bike lanes in St. Louis Park.
- Sign and/or stripe all City bike routes.

Intersection Improvements

- Install pedestrian ramps, countdown timers and crosswalk markings at controlled intersections. When pedestrian ramps are installed, ensure their placement is not blocked by signal poles and is lined up with the crosswalk.
- Work with other jurisdictions to increase pedestrian crossing times at controlled intersections if standards change to allow longer crossing times.
- Make crosswalks more visible.
- Install audible crossing indicators, if warranted.
- Add signage at street crossings and at bridges to alert drivers to pedestrian zones
- Install grade-separated crossings, when feasible, at Beltline Road and Wooddale Avenue Cedar Lake LRT Regional Trail crossings.
- Incorporate pedestrian facilities in future interchange developments at Highway 7 and Wooddale Avenue and Highway 7 and Louisiana Avenue.

Planning efforts by outside agencies will improve intersection crossings in St. Louis Park. Three Rivers Park District has federal funds available in 2010 for installing a grade-separated crossing at the Cedar Lake LRT Regional Trail crossing of Beltline Road. Mn/DOT is developing a plan for an interchange at Highway 7 and Wooddale Avenue which will incorporate a trail crossing for the Cedar Lake LRT Regional Trail at Wooddale Avenue. Implementation of the interchange is scheduled for 2009.

There are seventeen intersections that either had multiple accidents (data collected between 2001 and 2006) or that citiens identified at the Community Workshop as intersections of concern. A matrix, which is included in the appendix, identifies existing pedestrian infrastructure at each intersection and recommended improvements.

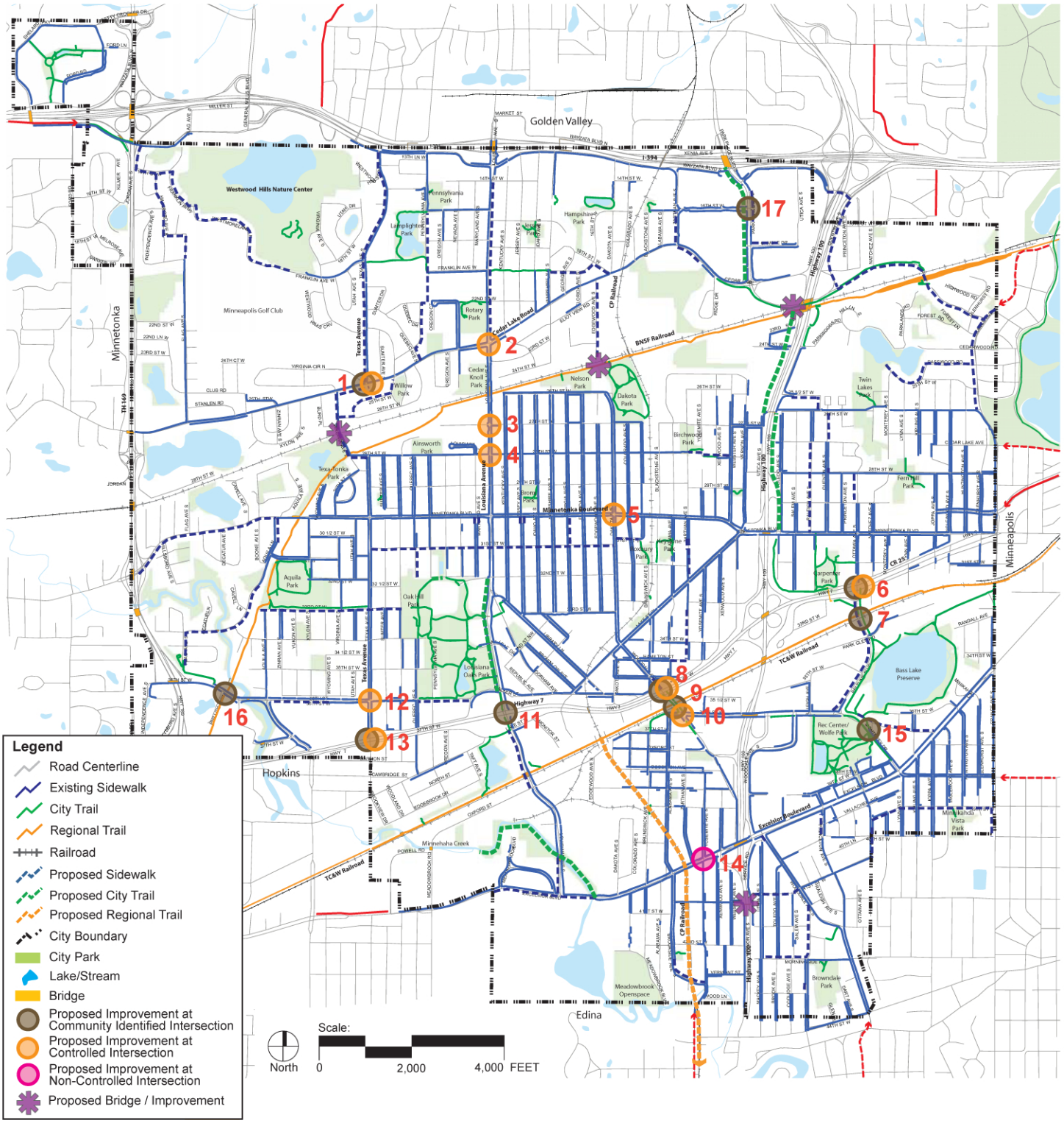

Figure 13: Pedestrian Plan

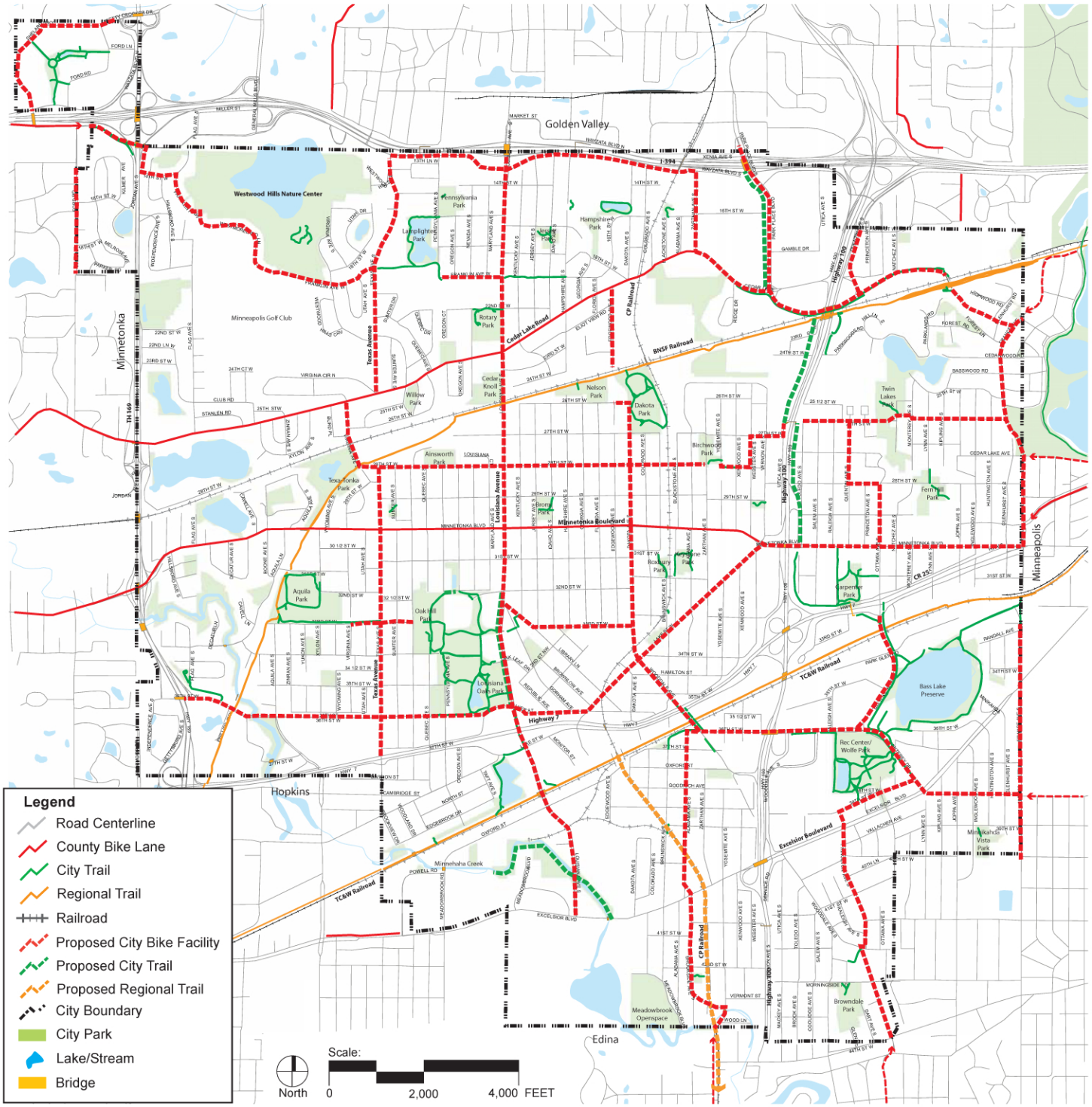

Figure 14: Bicycle Plan

Bridges

- Replace the stairs with an ADA accessible ramp on the pedestrian bridge over Highway 100 at 41st Street West.
- Install a pedestrian bridge over the BNSF Railroad at Peter Hobart Elementary School. A bridge at this location was first proposed as part of the Vision St. Louis Park project.
- Make pedestrian and bicycle access at the Excelsior Boulevard and Minnetonka Boulevard bridges over Highway 100 safer by creating wider sidewalks and adding bicycle lanes.
- Add pedestrian and bicycle accomodations to the Highway 100 west frontage road at the Burlington Northern Railroad grade-separated crossing.

Future Bicycle and Pedestrian ~~Opportunities~~

Several additional trail and design ideas have been raised in both the Vision St. Louis Park process and the sidewalk and trails planning process. These proposals are very long-term and may not come about in five, 10 or even 15 years. These future opportunities deserve additional study and consideration. Possible future improvements include a new north-south regional trail corridor along the CP Rail Line, a trail along Minnehaha Creek, and possibly and network of green streets.

The City of St. Louis Park owns large parcels of land along Minnehaha Creek. The City and Methodist Hospital are in the early stages of planning for a trail along the Minnehaha Creek through parcels owned by both entities.

"Green" streets provide innovative storm water management techniques into their design, incorporate significant landscaping, cool the traveled way by shading the street and accommodate pedestrians and bicyclists. Green streets could be incorporated into a "complete streets" policy. Complete streets are streets designed for multiple users, not just motorists.

Three Rivers Park District will be conducting a feasibility study on the CP Rail Line for future use as a regional trail. St. Louis Park will work with Three Rivers Park District to ensure that the potential future regional trail connects with local trails within the City.

These projects were identified during the Vision St. Louis Park project and are important to the community. Future projects such as a north/south regional trail or a complete streets policy would require a great deal of community support and/or investment, and may hinge on events outside the City's control.

IV. TRANSIT PLAN

Transit Goals

1. Link the transit system to the pedestrian and bicycle networks in order to provide alternatives to automobile travel for residents and workers in the community, including children, seniors and the disabled.
2. Anticipate increases in the use of mass transit, including a multi-modal system comprising buses, light rail, and local circulators.
3. Incorporate strategies for short- and long-term funding of proposed improvements and maintenance of bicycle and pedestrian systems and transit stops.
4. Develop phasing strategies for implementation based on priorities, needs and available resources.

Transit Objectives

1. Create neighborhood pedestrian sidewalk and bicycle connections to major transit hubs, including bus stops and future light rail transit stations.
2. Provide local sidewalk connections within one-half mile of major bus stops and future light rail transit stations.
3. Create inviting sidewalks, trails and transit stops.
4. Provide comfortable, safe and accessible transit stops for pedestrians along transit lines that serve two or more bus routes.

Transit Strategies

- Install additional shelters at the following transit stops: Cedar Lake Road and Virginia Avenue S, Cedar Lake Road and Louisiana Avenue S, Louisiana Avenue S and 18th Street S., and Minnetonka Boulevard and Toledo Avenue S.
- Transit stops with shelters will be equipped with concrete pads both inside and outside the shelter, at least one bench outside the shelter, curb cuts for access to the stop, a trash receptacle and lighting under the shelter canopy.
- Provide bicycle parking at transit stops that have municipal or Metro Transit automobile parking, when required by City Code.
- Provide bicycle parking at public buildings, commercial buildings and major transit stops, when required by City Code.
- Coordinate future independent trail planning with adjacent communities including the desired north/south trail along the CP Rail line.
- Future light rail transit stations will have all the same amenities as transit stations equipped with parking, as listed above.
- Create an inspection and maintenance program to keep bus shelters and benches in good working order.

Transit Integration

St. Louis Park is well served by Metro Transit bus service and is very well suited to future light-rail train service. Access to transit and safe transit stops are important aspects of the City's plan to improve pedestrian mobility.

There are 32 transit stops in St. Louis Park that are equipped with shelters. The most improved of these are the Metro Transit Park and Ride Station on Louisiana Avenue at I-394. This station has ample parking, improved bus shelters, benches, trash receptacles, newspaper racks, lighting, bicycle racks and lockers. Its configuration is such that buses can load and unload passengers on the shoulder of the exit ramp. Other buses enter the parking lot and have plenty of room to maneuver.

There are four locations along streets with multiple bus routes that are not equipped with shelters. These include Cedar Lake Road and Virginia Avenue S, Cedar Lake Road and Louisiana Avenue S, Louisiana Avenue S and 18th Street S., and Minnetonka Boulevard and Toledo Avenue S.


Louisiana Avenue Transit Station.

Installing improvements at bus stops along major bus routes is a good way to provide safety and shelter to mass-transit users. Improving bus stops may increase the number of bus riders as well. Improvements may include:

- Shelter
- Concrete pad and/ or sidewalk
- Lighting
- Curb cuts
- Benches
- Trash receptacles
- Bicycle rack and/or lockers
- Automobile parking

Future Transit Opportunities

The City of St. Louis Park and its residents are aware that a regional planning effort is underway regarding light rail transit along the southwest light rail corridor, currently occupied by the Cedar Lake LRT Regional Trail. Integrating future light rail transit stations within the existing bicycle, pedestrian and transit system will provide residents of St. Louis Park with effective and convenient alternative transportation opportunities.

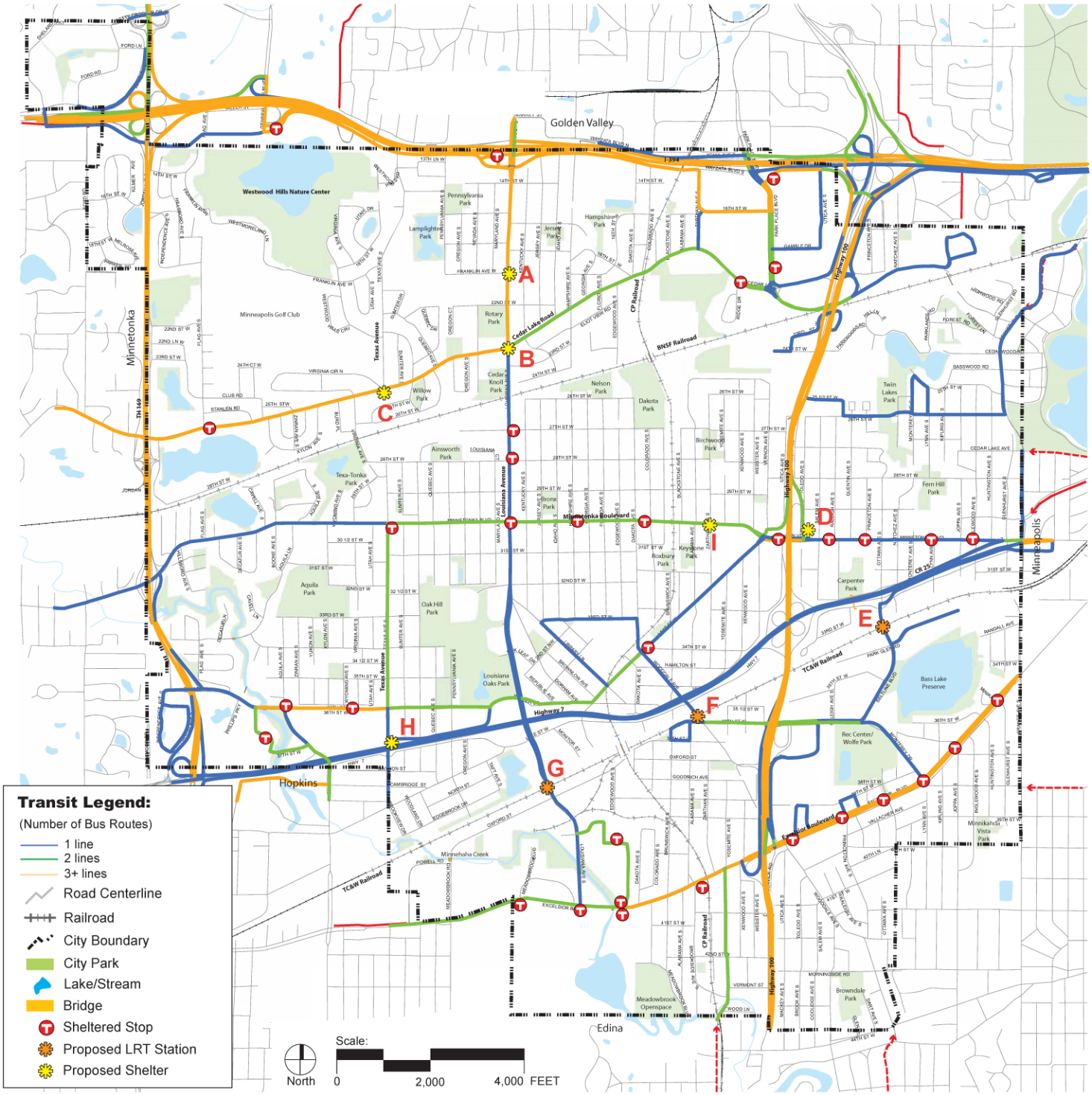

Figure 15: Transit Stop Improvements Plan

V. Implementation

The implementation of the bicycle and pedestrian plan will ultimately be determined by many factors that cannot be outlined in this report. Budgets, staff workloads, CIP funding and other variables make it difficult to propose a complete implementation strategy. Prioritization of the recommended improvements and preliminary cost estimates are provided in this report for City staff and leaders to plan for future improvements to the sidewalks, trails and transit elements in St. Louis Park and to track progress toward previously established goals.

To determine priorities for sidewalk, trail, bike lane, intersection and transit stop improvements, a map overlay analysis process that incorporated six layers of data was used. Data layers included one-quarter mile sidewalk grid, one-half mile bicycle grid, one-half mile distance from transit stops, one-half mile radius from community parks, current walk zone for public schools and one-quarter mile radius from five community gathering centers.

The proposed improvements were then overlaid on the data layers to determine which segments or elements were within the boundaries of the priority areas. The analysis matrices for trails, sidewalks, bike lanes, transit shelters and intersections are attached as appendices. Figure 16, the Implementation and Priorities Plan identifies the proposed priority improvements.

Sidewalks

Sixty-six sidewalk segments totaling almost 16 miles have been identified through the analysis conducted during the study. Of these, 23 segments totaling 4.76 miles are listed as Priority 1, meaning they are higher priority for the City because of their importance in filling gaps, connecting elements and creating a safer sidewalk system. The total estimated cost for installing Priority 1 sidewalks is $754,500 in 2007 dollars. Forty-three segments totaling 11 miles are listed as Priority 2. The estimated cost for installing Priority 2 sidewalks is $1,737,400 in 2007 dollars.

Trails

Six trail segments have been identified in the bicycle and pedestrian plan. Three segments totaling .99 miles are Priority 1 and three segments totaling 1.62 miles are Priority 2. The total cost for installing the Priority 1 segments is $157,000 in 2007 dollars. The total cost for installing the Priority 2 trail segments is $256,000. Costs for new trail segments assume that trails will be ten feet wide and constructed to Mn/DOT design standards.

Bikeways

Bikeway is a general term to describe all forms of bicycle facility designations. There are three variations of on-road bicycle facilities that could be utilized in St. Louis Park to improve bicycle transit options. These include designated bicycle lanes (DBLs), bike routes, and shared roadways. Roadway width, traffic volumes and on-street parking needs play a role in determining which facility can be installed on any given street. Bicycle lanes and routes should be constructed to meet Mn/DOT design standards.

Designated Bicycle Lanes

Designated bicycle lanes are dedicated to bicycle use and cannot be used by automobiles, except in special crossing zones. They separate bicycle traffic from automobile traffic with a physical barrier, colored or textured pavement, or striping and are usually five feet wide. Streets with designated bicycle lanes need a minimum width of 38 feet, which does not allow for on-street parking. If two lanes of parking are required, a minimum width of 54 feet is needed to accommodate bicycle and automobile traffic.

Bike Routes

Bike routes provide a right-of-way designated by signs or permanent markings

that may be shared with motorists or pedestrians. Street widths for bike routes must allow for safe passage of both motorists and bicyclists. The minimum width with no on-street parking is 28 feet wide. When on-street parking is required on both sides of the street a minimum street width of 40 feet is needed.

Shared Roadways
There are some roadway segments that are too narrow for DBLs or bike routes but that are still legally shared streets, for use by both bicyclists and motorists. Streets that are part of the St. Louis Park bicycle network but that are too narrow will be classified as shared roadways. Designated shared roadways would be identified with a unique sign to provide wayfinding assistance for bicyclists and to alert motorists that bicycles may be on the street.

Forty-six segments have been identified as proposed on-street bike lanes in St. Louis Park. Of these, 12 segments totaling 7.86 miles are identified as high priority. The estimated cost to construct the high priority segments is $352,748. Fifteen segments are identified as Priority 2 for a total of 12.61 miles. The total cost for installing Priority 2 bike lanes is estimated to be $565,923 in 2007 dollars. The total cost for 7.66 miles of Priority 3 bike lanes is estimated to be $343,595. A matrix identifying segment lengths and cost is included in the appendix.

Road Diets
The term "road diet" describes a situation in which a roadway is re-configured to have fewer vehicle lanes and more room for alternative transportation, parking or green space. For example a four-lane roadway could be re-configured to two lanes with wide shoulders, on-street parking, bike lanes, or a center turn lane. 36th Street W between Wooddale Avenue and Highway 100 is currently being re-designed in conjunction with the Hoigaard Village redevelopment. This segment of road is an ideal candidate for a "road diet". Reconfiguring 36th Street W would provide room for designated bike lanes. Minnetonka Boulevard east of Highway 100 is another candidate for a "road diet". Re-configuring the existing four-lane configuration to two vehicle lanes would provide additional room for bike lanes, wider shoulders, and possibly on-street parking.

Intersection Improvements
Seventeen intersections have been identified during the analysis process and by the community as being intersections of concern. Improvements to these intersections may include simple improvements such as adding countdown timers or improved crosswalk markings. Other solutions may be more expensive, such as installing new signals or grade-separated crossings. The total cost for improvements to the 17 intersections, excluding potential interchanges on Highway 7, is $3.4 million. A complete list of these intersections and the recommended improvements is listed in the appendix. The City may consider adopting a policy to install countdown timers at all signalized intersections. Countdown timers have been proven to reduce accidents and are favored by pedestrians.

Transit Implementation
There are 32 existing transit shelters in St. Louis Park. A few of these shelters have been upgraded in recent years as roadways are re-constructed, such as Excelsior Boulevard. Many other transit shelters are deficient and lack basic amenities that will improve pedestrian safety and use. In addition to the existing transit shelters, nine new shelters are proposed along major bus routes in St. Louis Park. Three of the proposed shelters will be implemented when light rail transit is constructed along the Cedar Lake LRT Regional Trail. Other transit shelter improvements include a full concrete pad, benches, trash receptacles, lighting, bike racks and lockers, curb cuts, news receptacles and car parking. Implementation priorities and costs will be

determined at a later date, in consultation with Metro Transit authorities.

Pedestrian Bridge Improvements

Two new pedestrian bridges over the BNSF Railroad are proposed in the bicycle and pedestrian plan. One is located at TH 100 connecting the Cedar Lake LRT Regional Trail with Cedar Lake Road and the second pedestrian bridge is proposed between Edgewood Avenue S. and Dakota Park. The bridge along TH 100 may be included in the proposed TH 100 widening project. The cost for each bridge, in 2007 dollars, is estimated to be approximately $1.5 million.

Two existing bridges that need substantial improvements are identified in the bicycle and pedestrian plan. The pedestrian bridge over TH 100 at 41st Street W is deficient because it lacks pedestrian ramps. The cost to construct new pedestrian ramps on both sides of the bridge is estimated to be approximately $800,000. The second bridge that requires substantial improvement is the railroad bridge crossing over Virginia Avenue S. This bridge lacks room for sidewalks and clear zones on both sides of the roadway. The cost to re-construct this bridge is estimated to be approximately $1,000,000.

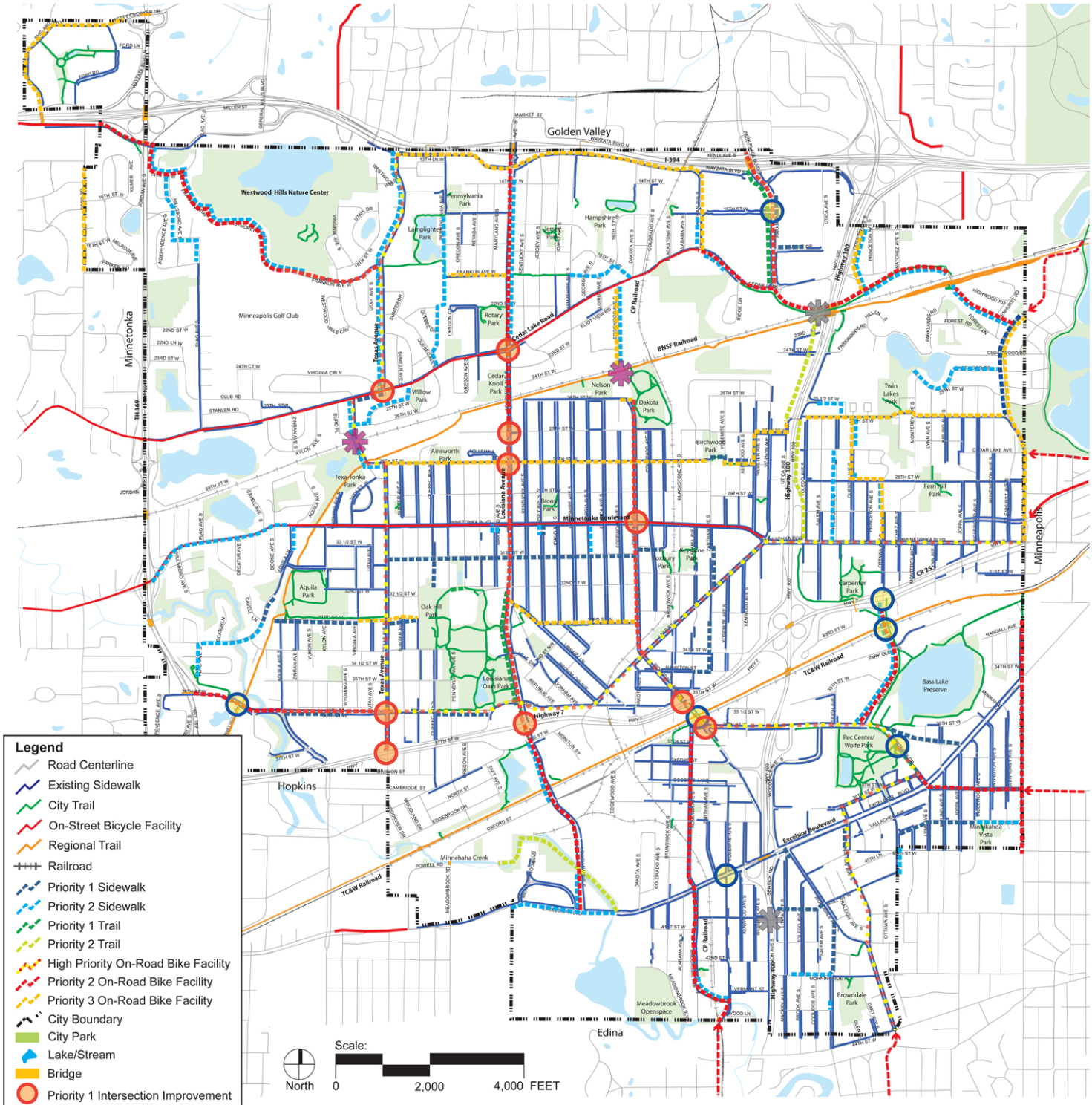

Figure 16: Implementation and Improvements

VI. Education and Enforcement

In a suburban community such as St. Louis Park, sidewalk, trail and bicycle etiquette may not seem like a major issue. However, with more people using trails and sidewalks for exercise, to commute or to run errands, understanding the "rules of the road" for trails and sidewalks is vitally important to keep all users safe. On-street bicycle facilities require that both bicyclists and automobile drivers understand the rules and are aware of other roadway users.

The City of St. Louis Park is pro-active in educating the public on trail use. City staff frequently set up park and trail information booths at community events. Additional services the City may do to improve trail safety and use include:

- Add safety material and maps to the City website.
- Co-host bicycle tune-up events with local bike shops.
- Promote safe trail and sidewalk use on Park TV, the community television stations.
- Hold community bicycle awareness clinics.
- Teach children trail and sidewalk etiquette in school.
- Include a share-the-road segment in driver's education training.

Enforcement of the City's trails and sidewalks is very important to ensure they remain safe and available to all citizens. St. Louis Park Police regularly patrol streets and parks and increasing patrols, especially during nighttime hours of City trails will help keep trails safe.

Three Rivers Park District regularly patrols the two regional trails that pass through St. Louis Park. However, these trails are only patrolled during operating hours, which are from sunrise to sunset. Three Rivers Park District does not operate their regional trails during the winter months. Individual communities may obtain a permit to manage and patrol regional trails during winter months.

Three Rivers Park District regularly patrols the Cedar Lake LRT Regional Trail and the North Cedar Lake LRT Regional Trail in St. Louis Park.

VII. Conclusion

The City of St. Louis Park has taken a pro-active stance to make the community more liveable. Improving the City's trails, sidewalks, bicycle opportunities and transit system is an important component of that directive. The Bicycle and Pedestrian Plan begins by identifying St. Louis Park's well established network of sidewalks, trails and parks and documents the existing transit system. A thorough analysis process identified areas within the City where pedestrian access is important and then tested the existing sidewalk and trail system to identify gaps in the network. The bicycle and pedestrian system priorities that came out of this analysis will enable St. Louis Park to systematically improve the sidewalks and trails, add additional on-street bicycle facilities and work with Metro Transit to improve transit stops so that the City's residents feel safe and enjoy present and future modes of transportation across the City.

VIII. APPENDIX

A. Sidewalk Priorities Matrix
B. Trail Priorities Matrix
C. On-Street Bicycle Priorities Matrix
D. Intersection Improvement Matrix
E. Transit Shelter Matrix
F. Sidewalks Implementation
G. Trails Implementation
H. On-Street Bicycle Lane Implementation
I. Intersection Improvement Costs

SIDEWALKS

Street	Segment	Side of Street	School	Park	CGC	Transit
Priority 1						
36th St W	Quebec Ave S to Walker St	S		X		X
31st St W	Texas Ave S to Dakota Ave S	N	X	X		X
Quebec Ave S	31st St W to Oak Hill Park	W		X		X
33rd St W	Aquila Ave S to Viginia Ave S	S	X			X
Jersey Ave S	South from Minnetonka Blvd (partial block)	E	X			X
31st St W	Dakota Ave S to Colorado Ave S	S	X			X
Zarthan Ave S	South of Minnetonka Blvd to Lake St W	E	X			X
28th St W	Zarthan Ave S to Webster Ave e	N	X			X
Zarthan Ave S	33rd St W to Hamilton St	W	X			X
Hamilton St	Alabama Ave S to Zarthan Ave S	S	X			X
36 1/2 St W	Monterey Dr to Excelsior Blvd	N		X	X	X
39th St W	Natchez Ave S to Inglewood Ave S	S	X	X		X
Quentin Ave S	Excelsior Blvd to 40th St W	W	X	X		X
Wooddale Ave S	Excelsior Blvd to Vernon Ave S	W	X			X
41st St W	Utica Ave S to Wooddale Ave S	S	X			X
Browndale Ave	Wooddale Ave S to Morningside Rd	W	X			X
Wooddale Ave S	35th St W to Highway 7	E	X			X
36th St W	Aquila Ave S to Wyoming Ave S	S			X	X
Aquila Ln	North from Cavell Ln (partial block)	E	X			X
France Ave S	W 22nd St to W 26th St	W				
36th St W	Texas Ave S to Rhode Island Ave S	S			X	X
Park Place Blvd	16th St W to Gamble Dr (partial block)	E			X	X
Gamble Drive	Park Place Blvd to east (partial block)	N			X	X
Cedar Lake Rd	Viginia Ave S to Texas Ave S	S	X			
Priority 2						
14th St .W	Wayzata Blvd to Flag Ave S	W		X		
Hillsboro Ave S	14th St W to W Franklin Ave	W		X		
W 18th St	Hillsboro Ave S to Flag Ave S	S		X		
Flag Ave S	W 18th St to W Franklin Ave	W		X		
Westmoreland Ln/Franklin Ave	W 14th St to Westwood Nature Center	N		X		
Franklin Ave W	Hampshire Ave to Cedar Lake Rd	S				
Zarthan Ave S	16th St W to Cedar Lake Rd	W				X
Cedar Lake Rd	16th St W east (partial block)	S				X
Edgewood Ave S	Cedar Lake Rd to BNSF Railroad tracks	E				
Quentin Ave S	Douglas Ave to Cedar Lake Rd	E				X
Cedar Lake Rd	Quentin Ave S to Pedestrian Bridge	S				
Cedar Lake Rd	Pedestrian Bridge to France Ave S	S				
Quentin Ave S	27th St W to 28th St W	E				X
Basswood Rd	Monterey Ave S to France Ave S	N				
25 1/2 St W	TH 100 to W 26th St	S				
Quentin Ave S	North from 28th St W (partial block)	E				X
Raleigh Ave S	Minnetonka Blvd to 27th St W	W				X
25th St W	W 26th St to Sumter Ave S	W				
Sumter Ave S	Cedar Lake Rd to 25th St W	N				
W 26th St	Virginia Ave S to W 2th St	N				
Virgina Ave S	Cedar Lake Rd to 28th St W	W				
28th St W	Virginia Ave St to Texas Ave S	S			X	
Maryland Ave S	South from Minntonka Blvd (partial block)	W/E				X
Minnetonka Blvd	Th 169 to Aquila Ln	S				X
Aquila Ln	Flag Ave S to Cavell Ln	S				X
Flag Ave S	Aquila Ln to Minnehaha Circle S	E				X
Pennsylvania Ave S	16th St W to Cedar Lake Road	E	X			
Louisiana Ave S	Lake St W to Oxford St	W				X
Morningside Rd	Mackey Ave S to Browndale Ave	S	X			
39th St W	Inglewood Ave S to France Ave S	S				X
Browndale Ave S	43rd 1/2 St north (partial block)	W				
Brookside Ave S	42nd St W to Yosemite Ave	E				X
Aquila Ln	South from Minnetonka Blvd (partial block)	E	X			
Excelsior Blvd	Meadowbrook Rd to Minnehaha Creek	S				X
Ottawa Ave S	28th St W to 29th St W	W				X
Texas Ave S	Wayzata Blvd to Cedar Lake Road	W	X			X
Louisiana Ave S	14th St W to Cedar Lake Road	E	X			X
Georgia Ave S	Minnetonka Blvd to 31st St W	E	X			X
Jersey Ave S	South from Minnetonka Blvd (partial block)	W	X			X
Natchez Ave S	39th St W to 41st St W	S	X	X		X
Beltline Blvd	Highway 7 to 36th St W	W		X		X
Louisiana Ave S	Minnehaha Creek to Excelsior Blvd	W		X		X

Note: An "X" indicates that the segment or element is within the boundary of the priority area as shown on the analysis diagrams.

Appendix A: Sidewalk Priority Matrix

TRAILS

Street	Segment	Side of Street	School	Park	CGC	Transit
Priority 1						
Louisiana Ave S	32nd St W to Walker St	**W**	**X**	**X**		**X**
Park Place Blvd	I-394 to Cedar Lake Road	**W**			**X**	**X**
Pennsylvania Ave	Pennsylvania Ave to Oregon Ave	**S**	**X**	**X**		**X**
Priority 2						
Toledo Ave S	27th St W to Minnetonka Blvd	**W**			**X**	
West side of TH 100	26th St Ped Bridge to BNSF Railroad	**W**				
Minnehaha Creek	Excelsior Blvd to Meadowbrook Rd	**S/W**				**X**

Note: An "X" indicates that the segment or element is within the boundary of the priority area as shown on the analysis diagrams.

Appendix B: Trail Priority Matrix

ON-STREET BIKES

Street	Segment	School	Park	CGC	Transit
High Priority					
Texas Ave S	Wayzata Blvd to Cedar Lake Road	X			X
Texas Ave S	28th St W to Highway 7	X	X	X	X
36th St W / Walker St	TH 169 to Lake St W	X	X		X
Lake St W	Walker St to Minnetonka Blvd	X			X
Wooddale Ave	Dakota Ave S to 36th St W	X			X
36th St W	Wooddale Ave S to Monterey Dr		X	X	X
Monterey Dr	36th St W to Excelsior Blvd		X	X	X
Quentin Ave S	Excelsior Blvd to 44th St W	X			X
Minnetonka Blvd	Hwy 100 to France Ave S				X
Virginia Ave S	Cedar Lake Rd to 28th St W				
28th St W	Virginia Ave S to Texas Ave S			X	
Park Commons Drive	Quentin Ave S to Grand Way		X	X	X
Priority 2					
Franklin Ave W	Westwood Nature Ctr to 14th St W	X	X		
Louisiana Ave S	Wayzata Blvd S to Excelsior Blvd	X			X
Beltline Blvd	CSAH 25 to 36th St W	X			X
Dakota Ave S	26th Ave S to Wooddale Ave S	X			X
Wayzata Blvd	Ford Rd to 14th St W				
14th St W	Wayzata Blvd to Hillsboro Ave S				
Cedar Lake Rd	Zarthan Ave S to Pedestrian Bridge				X
Cedar Lake Rd	Pedestrian Bridge to France Ave S				
France Ave S	Cedar Lake Rd to Minnetonka Blvd				
France Ave S	Randall Ave to 40th St W				X
38th St W	Excelsior Blvd to France Ave S				X
Brookside Ave S	41st St W to Yosemite Ave S				X
Alabama Ave S	36th St W to 41st St W				X
Park Place Blvd	I-394 to Cedar Lake Road			X	X
36th St W	TH 169 to Texas Ave S		X	X	X
Priority 3					
Shelard Pkwy	Betty Crocker Dr to Wayzata Blvd				
Ford Rd	Runnymeade Ln to Crestridge Dr				
Wayzata Blvd	Texas Ave S to Zarthan Ave S				X
Edgewood Ave S	Cedar Lake Rd to BNSF Railroad				
Zarthan Ave S	Wayzata Blvd to Cedar Lake Rd				X
Quentin Ave S	Douglas Ave to Cedar Lake Rd				X
26th St W	Toldedo Ave S to France Ave S				
Quentin Ave S	26th St W to 28th St W				X
28th St W	Quentin Ave S to Ottawa Ave S				X
Ottawa Ave S	28th St W to Minntonka Blvd				X
Franklin Ave W	Pennsylvania Ave S to Louisiana Ave S	X			
26th St W	Edgewood Ave S to Dakota Ave S	X			
28th St W	Virginia Ave S to Zarthan Ave S	X			X
28th St W	Yosemite Ave S to Webster Ave S	X			X
Webster Ave S	28th St W to 27th St W	X			X
27th St W	Webster Ave S to Utica Ave S	X			X
Utica Ave S	27th St W to Pedestrian Bridge	X			X
33rd St W	Virginia Ave S to Rhode Island Ave S	X	X		X
33rd St W	Louisiana Ave S to Dakota Ave S	X	X		X

Note: An "X" indicates that the segment or element is within the boundary of the priority area as shown on the analysis diagrams.

Appendix C: On-Street Bicycle Priorities Matrix

Intersections Identified by the Community as Dangerous and/or with Multiple Accidents

	Intersection	Stop Light	Countdown Timer	Crosswalks	Pedestrian Ramps	Pedestrian Stop Button in Island	Grade-Separated Xing	Interchange	Advanced Stop Bars
1	Cedar Lake Road & Texas Ave **(Priority)**	E	P	E	E				
2	Cedar Lake Road & Louisiana Ave	E	E	E	E				
3	Louisiana Ave & W 27th St	E	P	E	E				
4	Louisiana Ave & W 28th St	E	P	E	E				
5	Minnetonka Boulevard & Dakota Ave S	E	P	E	E				
6	Hwy 7 & Ottawa Ave S	E	P	E	E	P	E*		
7	Beltline Blvd & LRT Trail						P		
8	Hwy 7 & Wooddale Ave **(Priority)**	E	E	E	E	E		P	
9	Wooddale Ave & LRT Trail						P		
10	W 36th St & Woodale Ave S	E	P	E	E				
11	Hwy 7 & Louisiana Ave **(Priority)**	E	P	E	E	P		P	
12	Texas Ave S & W 36th St W **(Priority)**	E	P	E	E				
13	Hwy 7 & Texas Ave S	E	E	E	E	P		P	
14	Excelsior Blvd & Yosemite Ave S (under construction)	-	-	P	P	-	-	-	P
15	Monterey Dr & 36 1/2 St W	P	P	E	E				P
16	W 36th St & Phillips Pkwy (regional trail crossing)	P	P	E	E				E
17	Park Place Blvd & 16th St W	E	P	E	E				

* Pedestrian bridge opening in 2008

E Existing element

P Proposed intersection improvement

(Priority) Intersections that overlap with the high priority on-street bicycle lane segments.

Appendix D: Intersection Improvement Matrix

#	Transit Stop Shelter	Concrete Pad	Curb Cut	Outside Bench	Trash Receptacle	Lighting	Bike Rack	Bike Locker	News Racks	Municipal Parking	Metro Transit Parking
1		E	E	E	E	E	E	E	E		E
2	Wayzata Blvd & Park Place Blvd South	E	E	P	E	P	P	P			E
3	Park Place Blvd & Cedar Lake Road	E	E	E	E	P					
4	Cedar Lake Road & Ridge Drive	E	E	P	E	P					
5	Cedar Lake Road & Flag Ave S	E	E	P	E	P	P	E			E
6	Louisiana Ave & 27th St	E	P	P	E	P	P	P	E	E	
7	Louisiana Ave & 28th St	E	P	P	E	P			E		
8	Louisiana Ave & Minnetonka Blvd	E	P	P	E	P	P	P	E	E	
9	Minnetonka Blvd & Texas Ave S	E	P	P	E	P			E		
10	Minnetonka Blvd & Hampshire Ave S	E	P	E	E	P			E		
11	Minnetonka Blvd & Colorado Ave S	E	P	E	E	P			E		
12	Minnetonka Blvd & Hwy 100	E	P	E	E	P					
13	Minnetonka Blvd & Raleigh Ave S	E	P	E	E	P			E		
14	Minnetonka Blvd & Princeton Ave S	E	P	E	E	P			E		
15	Minnetonka Blvd & Lynn Ave S	E	P	E	E	P			E		
16	Minnetonka Blvd & Glenwood Ave S	E	E	E	E	P			E		
17	Lake Street W & Wooddale Ave	E	P	E	P	P			E		
18	36th Street W & Aquila Ave S	E	E	P	E	P					
19	36th Street W north of Knollwood Mall	E	E	P	E	P	P	P			E
20	37th Street W at Bremer Bank lot	E	P	P	E	E					
21	Excelsior Blvd & Meadowbrook Blvd	P*	P	P	E	P					
22	Excelsior Blvd & Louisiana Ave S	P*	P	P	P	P			E		
23	Excelsior Blvd @ Methodist Hospital North	E	P	P	E	P			E		
24	Excelsior Blvd @ Methodist Hospital South	E	P	P	P	P					
25	Excelsior Blvd & Brookside Ave S (construction)	-	-	-	-	-	-	-	-	-	-
26	Excelsior Blvd & Wooddale Ave S	E	P	E	E	E			E		
27	Excelsior Blvd & Quentin Ave S	E	P	E	E	E			E		
28	Excelsior Blvd & Grand Ave S	E	P	P	E	E			E		
29	Excelsior Blvd & Monterey Drive	E	P	E	E	E			E		
30	Excelsior Blvd & Joppa Ave S	E	E	E	E	E			E		
31	Excelsior Blvd & Glenhurst Ave S	E	P	E	E	E			E		
32	Methodist Hospital parking lot (construction)	-	-	-	-	-	-	-	-	-	-

* Concrete pad outside is inadequate

Legend
E Existing element
P Proposed improvement with shelter

#	Transit Stop Shelter	Concrete Pad	Curb Cut	Outside Bench	Trash Receptacle	Lighting	Bike Rack	Bike Locker	News Racks	Municipal Parking	Metro Transit Parking
	Proposed Transit Stop Shelter Locations										
A	Louisiana Ave & Franklin Ave W	P	E	P	P	P					
B	Cedar Lake Road & Louisiana Ave	P	E	P	P	P					
C	Cedar Lake Road & Texas Ave S	P	E	P	P	P	P	P			
D	Minnetonka Blvd & Toledo Ave S	P	E	P	P	P					
E	Beltline LRT Station	P	P	P	P	P	P	P	P		
F	Wooddale LRT Station	P	P	P	P	P	P	P	P		
G	Louisiana Ave LRT Station	P	P	P	P	P	P	P	P		
H	Texas Ave & 37th St W	P	E	P	P	P	P	P	E		E
I	Minnetonka Blvd & Zarthan Ave S	P	E	P	P	P					

Legend
E Existing element
P Proposed improvement with shelter

Appendix E: Transit Shelter Matrix

SIDEWALKS

Priority	ID	Street	Segment	Segment Length (ft)	Cost per lin ft [1]	Total Cost	
1	1	36th St W	Quebec Ave S to Walker St	1124	30	33,714	
1	2	31st St W	Texas Ave S to Dakota Ave S	5230	30	156,905	
1	3	Quebec Ave S	31st St W to Oak Hill Park	612	30	18,354	
1	4	33rd St W	Aquila Ave S to Viginia Ave S	1748	30	52,428	
1	5	Jersey Ave S	South from Minnetonka Blvd (partial block)	146	30	4,368	
1	6	31st St W	Dakota Ave S to Colorado Ave S	492	30	14,763	
1	7	Zarthan Ave S	South of Minnetonka Blvd to Lake St W	842	30	25,253	
1	8	28th St W	Zarthan Ave S to Webster Ave e	927	30	27,796	
1	9	Zarthan Ave S	33rd St W to Hamilton St	1050	30	31,505	
1	10	Hamilton St	Alabama Ave S to Zarthan Ave S	349	30	10,455	
1	11	36 1/2 St W	Monterey Dr to Excelsior Blvd	1693	30	50,803	
1	12	39th St W	Natchez Ave S to Inglewood Ave S	1650	30	49,494	
1	13	Quentin Ave S	Excelsior Blvd to 40th St W	428	30	12,827	
1	14	Wooddale Ave S	Excelsior Blvd to Vernon Ave S	141	30	4,238	
1	15	41st St W	Utica Ave S to Wooddale Ave S	971	30	29,130	
1	16	Browndale Ave	Wooddale Ave S to Morningside Rd	1051	30	31,527	
1	17	Wooddale Ave S	35th St W to Highway 7	302	30	9,068	
1	18	36th St W	Aquila Ave S to Wyoming Ave S	1255	30	37,661	
1	19	Aquila Ln	North from Cavell Ln (partial block)	630	30	18,895	
1	20	France Ave S	W 22nd St to W 26th St	2264	30	67,933	
1	21	36th St W	Texas Ave S to Rhode Island Ave S	648	30	19,444	
1	22	Park Place Blvd	16th St W to Gamble Dr (partial block)	1080	30	32,398	
1	23	Gamble Drive	Park Place Blvd to east (partial block)	516	30	15,467	
1	24	Cedar Lake Rd	Viginia Ave S to Texas Ave S	576	30	17,275	
				25723		$ 771,703	4.87 Miles
2	1	14th St .W	Wayzata Blvd to Flag Ave S	1343	30	40,295	
2	2	Hillsboro Ave S	14th St W to W Franklin Ave	1384	30	41,527	
2	3	W 18th St	Hillsboro Ave S to Flag Ave S	484	30	14,529	
2	4	Flag Ave S	W 18th St to W Franklin Ave	488	30	14,655	
2	5	Westmoreland Ln	W 14th St to Westwood Nature Center	4039	30	121,174	
2	6	Franklin Ave W	Hampshire Ave to Cedar Lake Rd	1405	30	42,149	
2	7	Zarthan Ave S	16th St W to Cedar Lake Rd	647	30	19,408	
2	8	Cedar Lake Rd	16th St W east (partial block)	629	30	18,860	
2	9	Edgewood Ave S	Cedar Lake Rd to BNSF Railroad tracks	1658	30	49,733	
2	10	Quentin Ave S	Douglas Ave to Cedar Lake Rd	2585	30	77,551	
2	11	Cedar Lake Rd	Quentin Ave S to Pedestrian Bridge	1970	30	59,087	
2	12	Cedar Lake Rd	Pedestrian Bridge to France Ave S	1423	30	42,677	
2	13	Quentin Ave S	27th St W to 28th St W	622	30	18,664	
2	14	Basswood Rd	Monterey Ave S to France Ave S	2112	30	63,372	
2	15	25 1/2 St W	TH 100 to W 26th St	823	30	24,687	
2	16	Quentin Ave S	North from 28th St W (partial block)	51	30	1,538	
2	17	Raleigh Ave S	Minnetonka Blvd to 27th St W	1848	30	55,440	
2	18	25th St W	W 26th St to Sumter Ave S	297	30	8,896	
2	19	Sumter Ave S	Cedar Lake Rd to 25th St W	1071	30	32,140	
2	20	W 26th St	Virginia Ave S to W 2th St	313	30	9,382	
2	21	Virgina Ave S	Cedar Lake Rd to 28th St W	1420	30	42,614	
2	22	28th St W	Virginia Ave St to Texas Ave S	390	30	11,709	
2	23	Maryland Ave S	South from Minntonka Blvd (partial block)	292	30	8,760	
2	24	Minnetonka Blvd	Th 169 to Aquila Ln	3362	30	100,845	
2	25	Aquila Ln	Flag Ave S to Cavell Ln	1563	30	46,883	
2	26	Flag Ave S	Aquila Ln to Minnehaha Circle S	782	30	23,458	
2	27	Pennsylvania Ave	16th St W to Cedar Lake Road	3371	30	101,126	
2	28	Louisiana Ave S	Lake St W to Oxford St	1329	30	39,857	
2	29	Morningside Rd	Mackey Ave S to Browndale Ave	1032	30	30,948	
2	30	39th St W	Inglewood Ave S to France Ave S	947	30	28,396	
2	31	Browndale Ave S	43rd 1/2 St north (partial block)	168	30	5,051	
2	32	Brookside Ave S	42nd St W to Yosemite Ave	932	30	27,949	
2	33	Aquila Ln	South from Minnetonka Blvd (partial block)	519	30	15,564	
2	34	Excelsior Blvd	Meadowbrook Rd to Minnehaha Creek	2241	30	67,234	
2	35	Ottawa Ave S	28th St W to 29th St W	616	30	18,471	
2	36	Texas Ave S	Wayzata Blvd to Cedar Lake Road	5078	30	152,338	
2	37	Louisiana Ave S	14th St W to Cedar Lake Road	3192	30	95,747	
2	38	Georgia Ave S	Minnetonka Blvd to 31st St W	593	30	17,775	
2	39	Jersey Ave S	South from Minnetonka Blvd (partial block)	146	30	4,367	
2	40	Natchez Ave S	39th St W to 41st St W	564	30	16,907	
2	41	Beltline Blvd	Highway 7 to 36th St W	2859	30	85,760	
2	42	Louisiana Ave S	Minnehaha Creek to Excelsior Blvd	752	30	22,566	
				57336		$ 1,720,091	10.86 Miles

Notes:

1 Figure based on SRF records of 2007 contractor bids which average approx. $5.00/sft. Multiply by 6' wide walk to get $30/lin ft.

TRAILS

Priority	ID	Street	Segment	Segment Length (ft)	Cost per ft	Total Cost	
1	1	Louisiana Ave S	32nd St W to Walker St	2462	30	73,853	
1	2	Park Place Blvd	I-394 to Cedar Lake Road	2500	30	75,008	
1	3	Pennsylvania Ave	Pennsylvania Ave to Oregon Ave	270	30	8,100	
				5232		$ 156,961	0.99 Miles
2	1	Toledo Ave S	27th St W to Minnetonka Blvd	2586	30	77,568	
2	2	West side of TH 100	26th St Ped Bridge to BNSF Railroad	2287	30	68,596	
2	3	Minnehaha Creek	Excelsior Blvd to Meadowbrook Rd	3660	30	109,786	
				8532		$ 255,950	1.62 Miles

Notes:

1 Based on Dakota Rail Trail figure of $26 per linear ft plus 13% for '07 dollars equals $30/lft.

High Priority Bike Lanes

ID	Type	Street	Segment	Segment Length (ft)	Cost per ft	Total Cost	
2	Bike Route	Texas Ave S	Wayzata Blvd to Cedar Lake Road	4000	8.50	34,000	
6	Bike Route	Texas Ave S	28th St W to Highway 7	6059	8.50	51,502	
8	Bike Route	Lake St W	Walker St to Minnetonka Blvd	5019	8.50	42,662	
10	Bike Route	36th St W	Wooddale Ave S to Monterey Dr	3711	8.50	31,544	
11	Bike Route	Monterey Dr	36th St W to Excelsior Blvd	1858	8.50	15,794	
7	Bikeway	Walker St	Texas Ave S to Lake St W	4435	8.50	37,698	
9	Bikeway	Wooddale Ave	Dakota Ave S to 36th St W	1987	8.50	16,886	
12	Bikeway	Quentin Ave S	Excelsior Blvd to 44th St W	5343	8.50	45,412	
18	Bikeway	Minnetonka Blvd	Hwy 100 to France Ave S	5523	8.50	46,946	
23	Bikeway	Virginia Ave S	Cedar Lake Rd to 28th St W	1436	8.50	12,202	
25	Bikeway	28th St W	Virginia Ave S to Texas Ave S	400	8.50	3,400	
26	Bikeway	Park Commons Drive	Quentin Ave S to Grand Way	1730	8.50	14,704	
				41500		$ 352,748	7.86 Miles

Priority 2 Bike Lanes

ID		Street	Segment	Segment Length (ft)	Cost per ft	Total Cost	
3	Bike Route	Louisiana Ave S	Wayzata Blvd S to Excelsior Blvd	16321	8.50	138,729	
4	Bike Route	Beltline Blvd	CSAH 25 to 36th St W	2886	8.50	24,529	
13	Bike Route	Wayzata Blvd	Ford Rd to 14th St W	1252	8.50	10,638	
17	Bike Route	France Ave S	Cedar Lake Rd to Minnetonka Blvd	5069	8.50	43,087	
1	Bikeway	Franklin Ave W	Westwood Nature Ctr to 14th St W	5826	8.50	49,517	
5	Bikeway	Dakota Ave S	26th Ave S to Wooddale Ave S	5431	8.50	46,164	
14	Bikeway	14th St W	Wayzata Blvd to Hillsboro Ave S	1285	8.50	10,926	
15	Bikeway	Cedar Lake Rd	Zarthan Ave S to Pedestrian Bridge	6020	8.50	51,170	
16	Bikeway	Cedar Lake Rd	Pedestrian Bridge to France Ave S	1429	8.50	12,143	
19	Bikeway	France Ave S	Randall Ave to 40th St W	4958	8.50	42,143	
20	Bikeway	38th St W	Excelsior Blvd to France Ave S	2046	8.50	17,389	
21	Bikeway	Brookside Ave S	41st St W to Yosemite Ave S	3372	8.50	28,661	
22	Bikeway	Alabama Ave S	36th St W to 41st St W	3472	8.50	29,509	
24	Bikeway	Park Place Blvd	I-394 to Cedar Lake Road	3029	8.50	25,747	
25	Bikeway	36th St W	TH 169 to Texas Ave S	4185	8.50	35572.5	
				66579		$ 565,923	12.61 Miles

Priority 3 Bike Lanes

ID		Street	Segment	Segment Length (ft)	Cost per ft	Total Cost	
1	Bike Route	Shelard Pkwy	Betty Crocker Dr to Wayzata Blvd	4069	8.50	34,586	
5	Bike Route	Zarthan Ave S	Wayzata Blvd to Cedar Lake Rd	1687	8.50	14,338	
6	Bike Route	Quentin Ave S	Douglas Ave to Cedar Lake Rd	1420	8.50	12,072	
2	Bikeway	Ford Rd	Runnymeade Ln to Crestridge Dr	2179	8.50	18,522	
3	Bikeway	Wayzata Blvd	Texas Ave S to Zarthan Ave S	6642	8.50	56,457	
4	Bikeway	Edgewood Ave S	Cedar Lake Rd to BNSF Railroad	1704	8.50	14,488	
7	Bikeway	26th St W	Toldedo Ave S to France Ave S	4397	8.50	37,375	
8	Bikeway	Quentin Ave S	26th St W to 28th St W	1317	8.50	11,192	
9	Bikeway	28th St W	Quentin Ave S to Ottawa Ave S	662	8.50	5,630	
10	Bikeway	Ottawa Ave S	28th St W to Minntonka Blvd	1332	8.50	11,318	
11	Bikeway	Franklin Ave W	Pennsylvania Ave S to Louisiana Ave S	1332	8.50	11,324	
12	Bikeway	26th St W	Edgewood Ave S to Dakota Ave S	316	8.50	2,686	
13	Bikeway	28th St W	Virginia Ave S to Zarthan Ave S	6870	8.50	58,395	
14	Bikeway	28th St W	Yosemite Ave S to Webster Ave S	626	8.50	5,323	
15	Bikeway	Webster Ave S	28th St W to 27th St W	669	8.50	5,690	
16	Bikeway	27th St W	Webster Ave S to Utica Ave S	675	8.50	5,738	
17	Bikeway	Utica Ave S	27th St W to Pedestrian Bridge	327	8.50	2,781	
18	Bikeway	33rd St W	Virginia Ave S to Rhode Island Ave S	1304	8.50	11,084	
19	Bikeway	33rd St W	Louisiana Ave S to Dakota Ave S	2894	8.50	24,595	
				40423		$ 343,595	7.66 Miles

Notes:

1 Figure based on $8/ lft obtained from SLP. Added 6% for contingency to get $8.5/ft.

2 Bike routes require a minimum street width of 28 feet with no parking; 40 feet with two lanes of parking; and 64 feet with four driving lanes and two lanes of parking.

3 A bikeway is any road that may legally be used by bicycles whether or not the road is signed or striped for bicycle use.

2007 ESTIMATED INTERSECTION IMPROVEMENT COSTS

ID	Intersection	Signal	Countdown Timer	Crosswalks ($10,500 ea)	Pedestrian Ramp	Pedestrian Stop Button in Island	Grade-Separated Xing	Interchange[2]	Advanced Stop Bars	Total
High Priority Intersections										
1	Cedar Lake Road & Texas Ave		**4,000**							$ 4,000
8	Hwy 7 & Wooddale Ave							**18,000,000**		$ 18,000,000
11	Hwy 7 & Louisiana Ave		**4,000**			**5,000**		**18,000,000**		$ 18,009,000
12	Texas Ave S & W 36th St W		**4,000**							$ 4,000
									Total	$ 36,017,000
Priority Intersections										
3	Louisiana Ave & W 27th St		**4,000**							$ 4,000
4	Louisiana Ave & W 28th St		**4,000**							$ 4,000
5	Minnetonka Boulevard & Dakota Ave S		**4,000**							$ 4,000
6	Hwy 7 & Ottawa Ave S		**4,000**			**5,000**				$ 9,000
7	Beltline Blvd & LRT Trail						**1,500,000**			$ 1,500,000
9	Wooddale Ave & LRT Trail						**1,500,000**			$ 1,500,000
10	W 36th St & Woodale Ave S		**4,000**							$ 4,000
13	Hwy 7 & Texas Ave S					**5,000**		**18,000,000**		$ 18,005,000
14	Excelsior Blvd & Yosemite Ave S (under construction)			**21,000**	**2,000**				**375**	$ 23,375
15	Monterey Dr & 36 1/2 St W	**180,000**	**4,000**						**375**	$ 184,375
16	W 36th St & Phillips Pkwy (Regional Trail Crossing)	**180,000**	**4,000**							$ 184,000
17	Park Place Blvd & 16th St W		**4,000**							$ 4,000
									Total	**$ 21,425,750**

Notes:
1. Prices shown are estimated construction dollars for 2007.
2. Federal funds and other cost sharing may reduce the estimated cost for interchange construction.

Appendix I: Intersection Improvement Costs