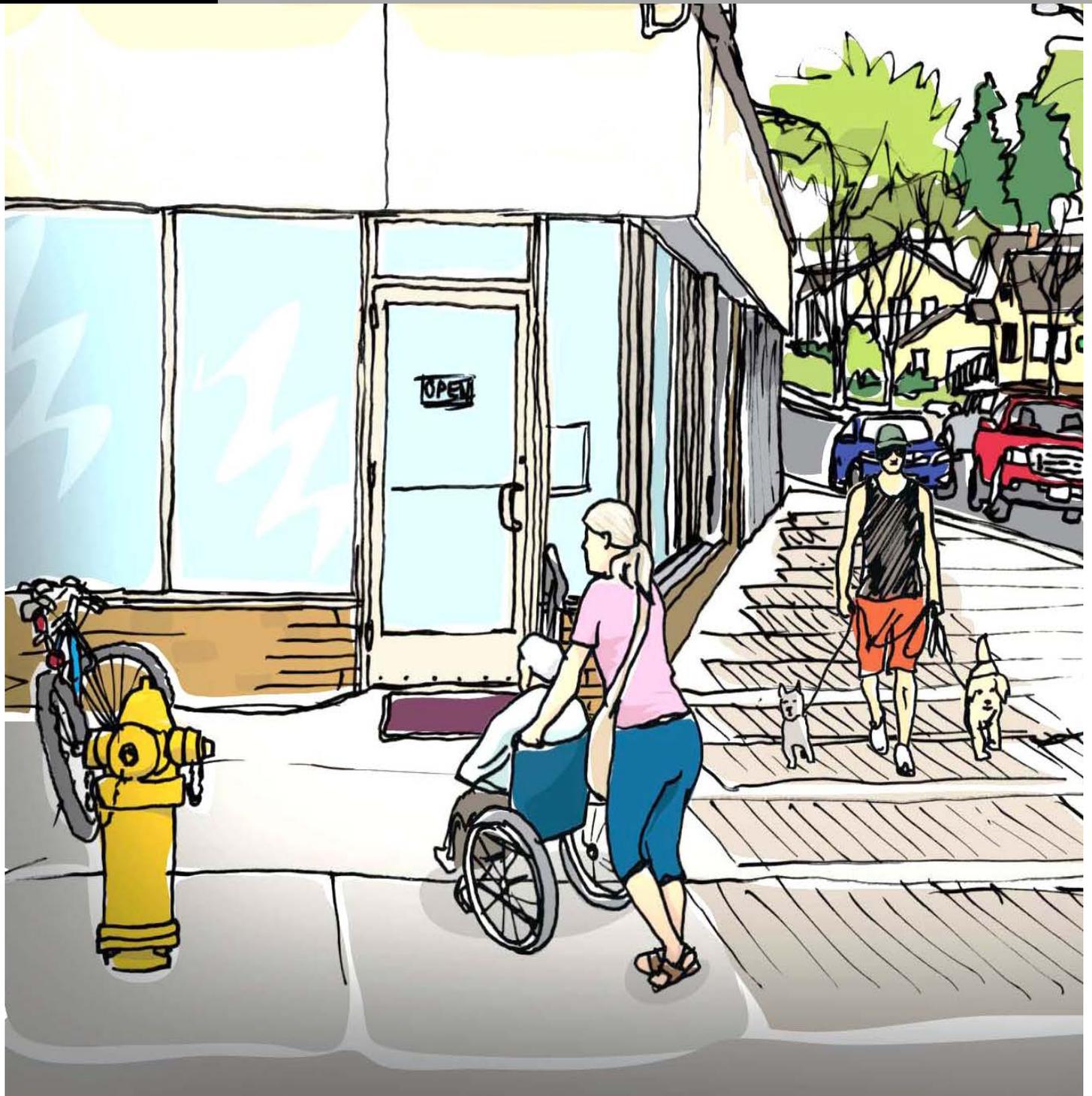


SOUTH
ST. PAUL

BICYCLE AND PEDESTRIAN PLAN
DECEMBER 15, 2014



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South St. Paul Bicycle and Pedestrian Plan



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I. Executive summary

The City of South St. Paul recognizes that walking and bicycling infrastructure benefit its residents and businesses. Every person is a pedestrian at some point in their day; whether they are walking to school, a bus stop, a park, or simply walking from their parking space into their office building. While bicycling remains less common than walking, many residents enjoy bicycling for exercise and are interested in bicycling more often.

Walkable and bikeable communities have a high quality of life, improve personal and environmental health, and promote vibrant and connected communities. Walkable and bikeable communities are economically sustainable. Residents do not have to rely on a costly personal vehicle, and are more likely to support local businesses that can be easily reached on foot and bike. Pedestrian and bicycle infrastructure is also cost-effective for public agencies: sidewalks and bikeways are less expensive to maintain than roadways, and walkable and bikeable communities result in less land use tied up in parking.

This plan addresses the City of South St. Paul's role in making walking and bicycling safe and easy choices for residents. This plan will guide the city's efforts to reach the following goals:

1. Improve opportunities for walking and bicycling through development of a sidewalk, trail, and bikeway system that connects to community destinations and public transit
2. Plan and provide a safe and comfortable sidewalk, trail, and bikeway system that meets the needs of residents of all ages and abilities
3. Ensure that critical links in the sidewalk, trail, and bikeway system receive regular and year-round maintenance
4. Improve the health of South St. Paul residents through walking and bicycling
5. Build a vibrant, healthy, sustainable, and livable community by making walking and bicycling easy, convenient, and safe
6. Increase rates of walking and bicycling

The recommendations of this plan are tailored to help the city reach these goals. This plan is guided by a 5 Es approach to bicycle and pedestrian planning: engineering, education, encouragement, enforcement, and evaluation. Recommendations in this plan include:

- Establish an Arterial Sidewalk Network based on priority pedestrian connections
- Identify critical gaps in the sidewalk system
- Identify bicycle network, including multi-use trails, bike lanes, and bicycle boulevards
- Maintenance recommendations for sidewalks and bikeways
- Community outreach to encourage walking and bicycling
- Support Safe Routes to School programs
- Educate residents about safe walking, bicycling, and driving behavior

The City of South St. Paul will lead the implementation of this plan, following the strategies and priorities outlined in Chapter II: Implementation. The city will track key performance measures on an annual basis to ensure progress towards the goals of this plan.

2. Introduction

Purpose of the plan

The purpose of this plan is to lay out a framework so that the City of South St. Paul and its partners can provide the infrastructure, educational tools, policies, and resources necessary for a community where walking and bicycling are safe, comfortable, and convenient for people of all ages and abilities. The City of South St. Paul is working in partnership with Dakota County to increase opportunities for residents to walk and bicycle with the ultimate goal of creating an active, healthy community. This plan also supports the city's economic development and sustainability initiatives. Walkable and bikeable communities are attractive places to live, work, and play. Walking and bicycling promote a more economically and environmentally sustainable community.

The City of South St. Paul has many existing assets for walking and bicycling. The city's compact residential and mixed-use development means that parks, schools, and businesses are located near residential neighborhoods. The Southview-Hill commercial district is walkable and within a short distance of most residents. The city's infrastructure supports walking and bicycling, as many city streets have sidewalks. Two regional trails pass through the city: the Mississippi River Regional Trail and the River to River Greenway¹.

This plan builds upon these existing facilities and to guide the city's investments in bicycle- and pedestrian-friendly infrastructure and practices. This plan evaluates existing conditions for walking and bicycling and recommends improvements and implementation steps to reach the city's goals as outlined in Chapter 3.

South St. Paul Vision

The city's 2008 Comprehensive Plan established a vision of South St. Paul as a community that bridges the past with the future. In 2030, the city envisions that it will continue to have a small-town feel and be a desirable and affordable place to raise a family. The Southview-Hill district will continue to be the city's town center. Much of the Mississippi riverfront will be preserved as parkland, and residents will be able to easily connect to parkland and the Mississippi River Regional Trail.

This bicycle and pedestrian plan supports the city's vision for the future. A pedestrian- and bicycle-friendly community will contribute to the city's small-town feel. Families desire to live in communities where their children can safely walk and bicycle. Residents and businesses are attracted to walkable, bikeable communities². Trail and sidewalk loops are desirable amenities for both residents and industrial/commercial businesses. This plan proposes pedestrian and bicycle connections to key destinations such as the Southview-Hill district, supporting the city's vision of a vibrant town center. Finally, this plan is critical to connecting residents with the riverfront and the Mississippi River Trail. This plan includes recommendations to improve pedestrian and bicycle connections between the riverfront and neighborhoods "on the hill".

¹ Dakota County recently renamed the North Urban Regional Trail as the River to River Greenway.

² "Smart Growth and Economic Success," United States Environmental Protection Agency, http://www.epa.gov/smartgrowth/pdf/economic_success.pdf, December 2012.

3. Goals

The recommendations of this plan are guided by the following goals. These goals address key components of a pedestrian- and bicycle-friendly community.

1. Improve opportunities for walking and bicycling through development of a sidewalk, trail, and bikeway system that connects to community destinations and public transit

Identify and implement a sidewalk, trail, and bikeway system that connects to community destinations and public transit so that residents have the opportunity to walk or bicycle to get around the city and destinations beyond.

2. Plan and provide for a safe and comfortable sidewalk, trail, and bikeway system that meets the needs of residents of all ages and abilities

Identify infrastructure improvements, best practices, policies, and programs that provide a safe and comfortable system for all users, including children, seniors, and people with limited physical mobility.

3. Ensure that critical links in the sidewalk, trail, and bikeway system receive regular and year-round maintenance

Acknowledging that the sidewalk, trail, and bicycle system must be well-maintained in order to provide a reliable option for transportation and recreation, the city will identify and implement strategies to ensure regular, year-round maintenance.

4. Improve the health of South St. Paul residents through walking and bicycling

Identify opportunities to improve the health of city residents through walking and bicycling, especially among priority populations of children, people 55 or older, people with low incomes, and people with limited mobility. Walking and bicycling are easy ways for children and adults to integrate regular physical activity into their routines.

5. Build a vibrant, healthy, sustainable, and livable community by making walking and bicycling easy, convenient, and safe

Pursue opportunities to build a vibrant, healthy, sustainable, and livable community by improving opportunities for walking and bicycling. Walkable and bikeable communities encourage social interaction and contribute to a high quality of life. A community full of walkers and bicyclists is healthy and creates a vibrant and neighborly atmosphere. Walking and bicycling are the most environmentally sustainable forms of transportation and short auto trips can be replaced with walking and bicycling to improve the city's environmental sustainability.

6. Increase rates of walking and bicycling

Recognizing that walking and bicycling contribute to overall health and quality of life, opportunities will be identified to encourage more walking and bicycling through the 5 Es – engineering, education, encouragement, enforcement, and evaluation.



4. Benefits of walking and bicycling

A walkable and bikeable community provides many benefits to residents and the community as a whole. The sections below highlight the potential for bicycle and pedestrian planning to improve personal and environmental health as well as enhance transportation options within the community.

Health Benefits

The City of South St. Paul and Dakota County have collaborated on this plan in to promote better public health through increased physical activity. Walking and bicycling are easy ways for both children and adults to integrate physical activity into their daily routines. Regular physical activity reduces the risk of heart disease, diabetes, high blood pressure, and helps manage weight. In Minnesota, heart disease is the second-leading cause of death behind cancer. Diabetes is on the rise in the state, especially among adults over 45. Sixty percent of Dakota County residents are overweight or obese.³ While physical activity can have a positive effect on all of these health conditions, only 45 percent of Dakota County adults meet the Centers for Disease Control and Prevention (CDC) Physical Activity guidelines. Only one percent of employed Dakota County residents walk or bike to work, compared to four percent statewide. Additionally, less than 60 percent of Dakota County students are physically active for 30 minutes or more at least five days of the week.⁴ The CDC recommends at least 150 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity per week for adults, and 60 minutes of moderate or vigorous aerobic activity daily for children and adolescents.⁵

Regular physical activity also has mental health benefits. Regular physical activity helps reduce the risk of depression and can ease symptoms of depression or anxiety. Among aging adults, regular physical activity helps to maintain thinking, learning, and judgment skills. Physical activity may also improve sleep quality. Additionally, among children physical activity is linked to improved academic achievement, concentration, and attentiveness in the classroom.⁶

It can be challenging for many adults to fit physical activity into their busy schedules. Children often do not get enough physical activity if their neighborhoods do not have sidewalks and trails that are safe for their use. By creating conditions that make walking and bicycling convenient and safe, cities can make it easier for residents to be active in their daily lives. Research has shown that residents in walkable and bikeable communities are more likely to meet the CDC's physical activity guidelines⁷. If sidewalks, trails, and bikeways are in place, residents have the opportunity to walk and bike to run errands, commute to work or school, or for recreation. In addition, sidewalks, trails, and bikeways provide safety benefits, as these designated facilities make it less likely that pedestrians and bicyclists will be involved in a traffic crash.



³ "Nutrition", Dakota County Public Health Department, 2013.

⁴ "Physical Activity", Dakota County Public Health Department, 2013.

⁵ "The Importance of Physical Activity," Minnesota Department of Health, 2013.

<http://www.health.state.mn.us/divs/hpcd/chp/cdrr/physicalactivity/docs/PAtfactsheet.pdf>

⁶ Centers for Disease Control and Prevention Website:

http://www.cdc.gov/physicalactivity/everyone/health/index.html?s_cid=cs_284

⁷ Design for Health Website: <http://www.designforhealth.net/physical-activity>

Sustainability Benefits

Walking and bicycling are the most environmentally friendly forms of transportation. Vehicle emissions contribute to environmental problems such as poor air quality and climate change. Emissions also cause health issues such as respiratory problems and are a suspected cause of some cancers. Walking and bicycling have the potential to benefit the environment by replacing short vehicle trips. In the Twin Cities, 14 percent of trips are one mile or less⁸. Many of these short trips could be made on foot or bike, resulting in environmental benefits from reduced vehicle emissions.

Walkable and bikeable communities are also economically sustainable. Residents do not have to rely on a costly personal vehicle, and are more likely to support local businesses that can be easily reached on foot and bike. Pedestrian and bicycle infrastructure is also cost-effective for public agencies: sidewalks and bikeways are less expensive to maintain than roadways, and walkable and bikeable communities result in less land use tied up in parking.

Walkable and bikeable communities promote efficient land use. If people can easily walk and bike to commercial districts, less land is necessary for auto parking. In turn, communities with efficient land use tend to have more destinations located within walking and biking distance of residents.

Transportation Choices

The City of South St. Paul recognizes the importance of providing for the transportation needs and choices of residents. Not all residents are able to drive, including children, the elderly, and people with physical limitations. As the population ages, the number of people who are unable to drive will increase. In addition, some residents are not able to drive because they cannot afford the cost of owning and maintaining a vehicle. There is also an increasing number of Minnesotans who prefer to walk and bicycle because it can be easy, convenient, healthy, enjoyable, and inexpensive. Between 2000 and 2010, the number of vehicle trips in the Twin Cities region dropped by 6 percent, while walking increased by 16 percent and bicycling increased by 13 percent.⁹ While some of these changes may be due to the impact of the recent recession, there has also been an increasing interest in walking and bicycling among metro-area residents. It is important for the city to be aware of these trends and plan for a future where walking and bicycling are increasingly common forms of transportation.

By planning and providing a network of sidewalks, trails, and bikeways, South St. Paul can be a place where people can easily get around without using a vehicle. A walkable and bikeable community means that children, the elderly, and people with limited physical mobility have the ability to get around the community without depending on driving a vehicle or others to provide them with a ride for all of their trips. Residents who cannot afford their own vehicle benefit from being able to more easily meet their daily transportation needs. Furthermore, it is easy to combine walking and bicycling trips with public transit. A walkable and bikeable community supports public transit by making it easier to residents to

⁸ Metropolitan Council 2000 Travel Behavior Inventory, Summary of Travel Time and Trip Length: <http://www.metrocouncil.org/Transportation/Publications-And-Resources/TBI2000TravelTimeTripLength7County-pdf.aspx>

⁹ Metropolitan Council Travel Behavior Inventory Website: <http://www.metrocouncil.org/Transportation/Publications-And-Resources/Travel-Behavior-Inventory.aspx>

access transit stops and make longer trips without using a personal vehicle. Residents who prefer to walk and bicycle will be able to do so safely and easily.

Walkable and bikeable communities also provide benefits to residents who use a personal vehicle to get around. Sidewalks, bikeways, and trails provide designated spaces for pedestrians and bicyclists, therefore reducing conflicts between pedestrians, bicyclists, and drivers who would otherwise share the same space on a roadway.

5. Community Background

Community characteristics

The City of South St. Paul incorporated in 1887 and is a first-ring suburb of the City of St. Paul (**Figure I**). The city is 6.2 square miles and is situated west of the Mississippi River. It is approximately five miles from downtown St. Paul and is bordered by the Cities of Saint Paul, West Saint Paul, and Inver Grove Heights. The city's population was 20,160 in 2010 and is not expected to substantially increase through 2040.

Demographics

The population of South St. Paul has remained stable over the last 30 years. According to the 2010 US Census, children made up 23 percent of the city's population and approximately 16 percent of the population was over the age of 60. As baby boomers age, the percent of the South St. Paul population over the age of 60 is expected to increase.

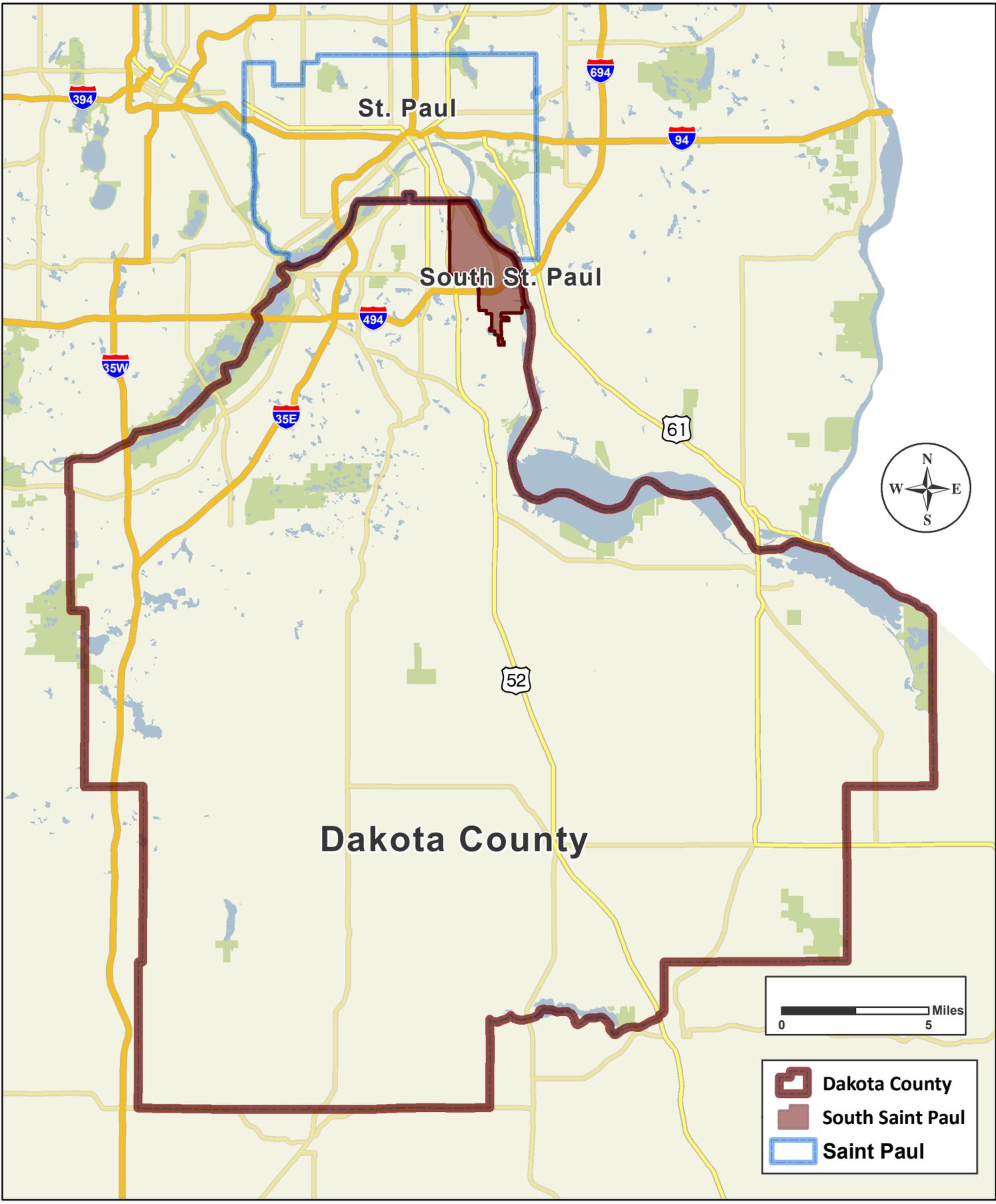
The city's population is less racially and ethnically diverse than Minneapolis, St. Paul, and many other first-ring suburbs. In the 2010 census, 80 percent of the population identified as White alone with approximately 12 percent of the population identified as Hispanic or Latino. The city's median household income is approximately \$55,600, 8 percent below the median household income of the Twin Cities metropolitan area. The city's per capita income is approximately \$26,200. Approximately 10 percent of residents have incomes below the federal poverty level.

The city's demographics indicate that many residents could benefit from improvements to the city's bicycle and pedestrian system. Many of its residents, such as children and some seniors, are not able to drive for their primary means of transportation. Residents who are unable to drive, such as children and the elderly, could benefit from the ability to safely and conveniently walk and bike around the community. Additionally, low income residents could benefit from increased mobility without the expense of owning and operating a motor vehicle.

Topography

The topography of South St. Paul presents challenges for walking and bicycling. Residential neighborhoods and the town center (Southview-Hill community commercial district) are located on top of a bluff overlooking the Mississippi River. The city's industrial district and some commercial land uses are located below the bluff, along with the Mississippi River and the Mississippi River Regional Trail. Getting between these two areas (above and below the bluff) can be hard given the steep slopes and limited connections between the two areas. Even where sidewalk exists, traveling up and down these slopes is challenging, especially for children, older adults, and people with mobility challenges.

In addition, the northernmost part of the city is separated from the rest of the community by Simon's Ravine, a park that includes the River to River Greenway (R2RG). 19th Avenue N is the only street that crosses the ravine. The ravine prevents direct pedestrian and bicycle connections in the northern portion of the city.



South St. Paul Bicycle & Pedestrian Plan

Figure 1: South St. Paul Location Map



Land use and development patterns

South St. Paul's land use and development patterns present both opportunities and challenges for walking and bicycling. Due to the city's development over 125 years ago, most of the city east of 15th Avenue has compact development patterns that support walking and bicycling. Parks, schools, and businesses are located within and near residential neighborhoods. The Southview-Hill commercial district is located in the center of the city and includes destinations such as a grocery store, pharmacy, restaurants, and other businesses. The city's intact grid system of streets means that bicyclists and pedestrians can directly access many destinations without traveling on busy streets. Additionally, many streets have sidewalks on at least one side. See **Figure 2** for a map of existing land use within the city.

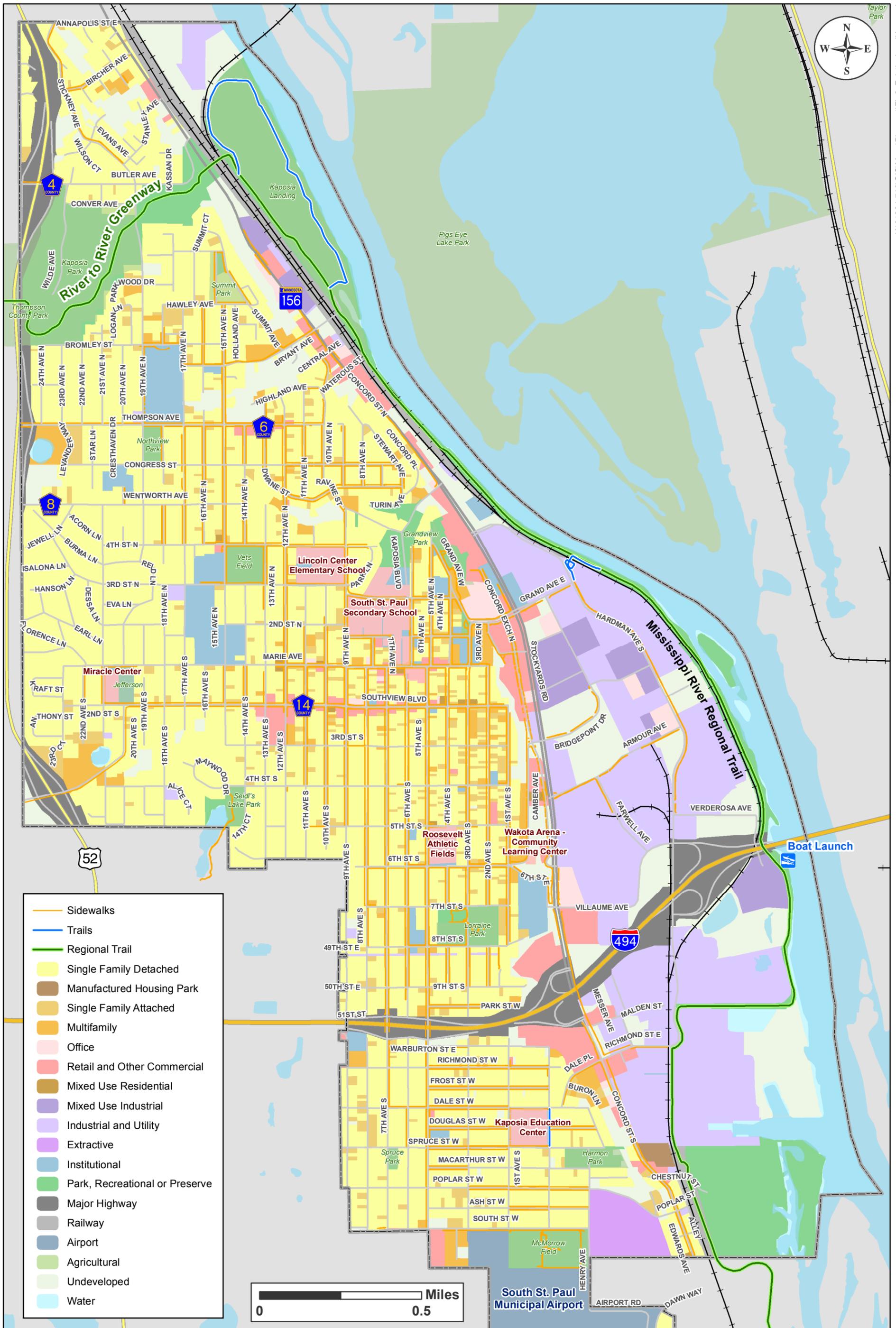
The city is also home to a large industrial district along the Mississippi River which is the main employment center and is within walking and bicycling distances of residential neighborhoods. However, as noted above, there is a bluff separating residential neighborhoods from the large industrial district along the Mississippi River. The bluff discourages walking and bicycling to work even for residents who live only a short distance from the industrial district.

While there are commercial land uses in the core of the city, there are some commercial land uses that are below the bluff along Concord Street (TH 156) and Concord Exchange. As with the industrial district, the bluff discourages residents from walking and bicycling to destinations along Concord Street and Concord Exchange. The businesses along Concord Street are challenging to access on foot or on bike, as there are several sidewalk gaps, no bicycle facilities, and a speed limit of 40 MPH.

Redevelopment and future land use trends

The city has been actively planning for future redevelopment opportunities. While the city's population is not expected to experience substantial growth over the next 25 years, the city is planning for a future where South St. Paul continues to be a vibrant and desirable place to live.

In 2014, the city completed the Southview Hill Study to guide revitalization and redevelopment within the town center along and around Southview Boulevard and Marie Avenue. The recommendations of this study support a walkable and bikeable town center. Residents expressed strong support for expansion of commercial uses, which would result in more destinations within walking and bicycling distance of residential neighborhoods. The study recommendations included placemaking to attract people more people to the town center, improvements to sidewalks, addition of bicycle facilities, pedestrian scale lighting, street furnishings, wayfinding, and intersection improvements. The city and Dakota County are also current studying improvements to Southview Boulevard, including changes to sidewalks and pedestrian amenities.



South St. Paul Bicycle & Pedestrian Plan

Figure 2: Existing Land Use



Community destinations

In order to have a strong sidewalk and trail system, South St. Paul has a number of community destinations that are important to link to the bicycle and pedestrian network, including parks, schools, trails, transit service, and commercial districts. **Figure 3** shows community destinations and the existing sidewalk and trail network.

Parks

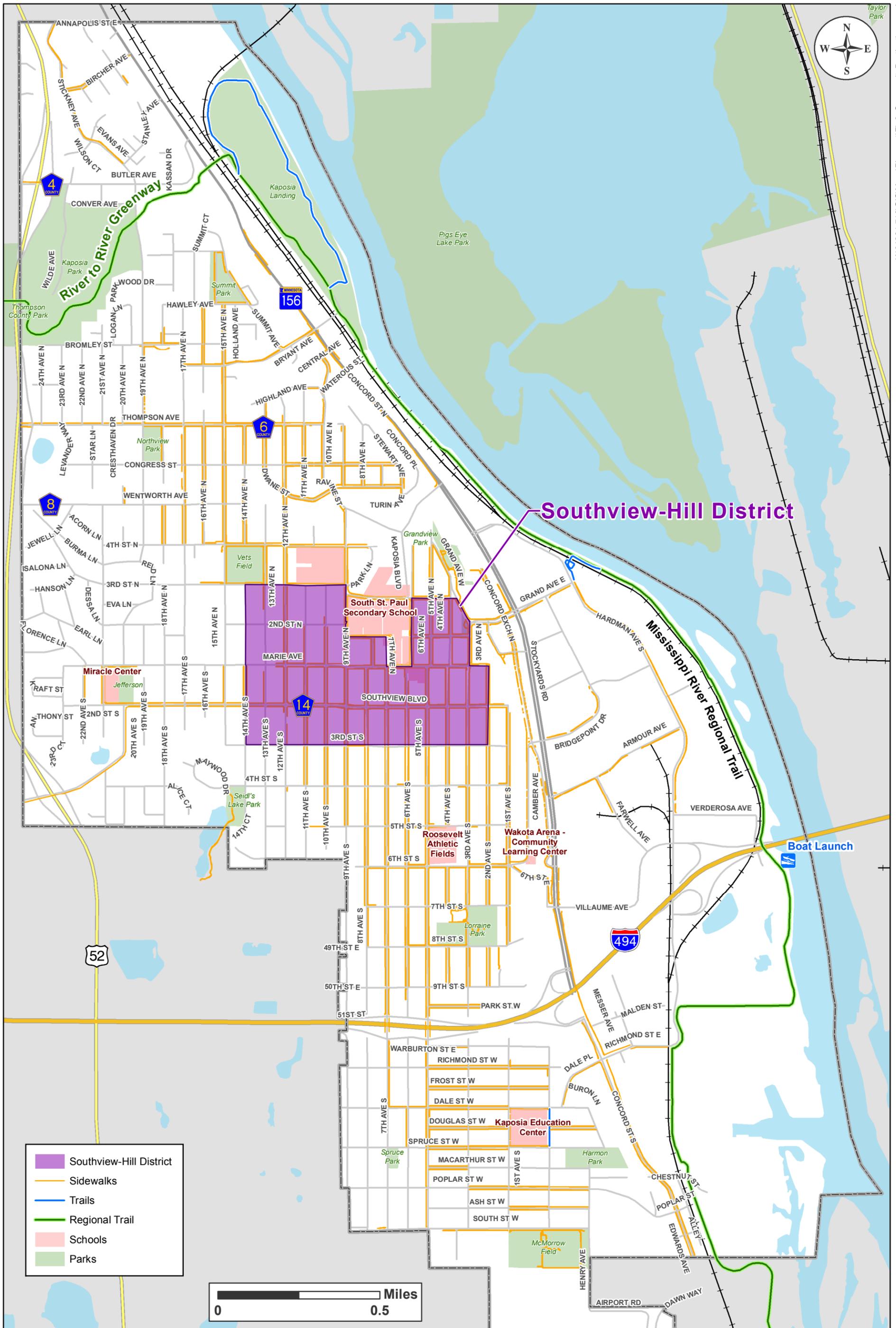
The South St. Paul Parks and Recreation system includes over 240 acres of parks and natural areas and two regional trails owned and operated by Dakota County Parks. Most residents are within a half mile walk of a park. Many of the parks feature active recreation opportunities such as swimming and sports facilities. The parks range in size and function; from small neighborhood parks to large community parks that draw residents from the entire city. **Figure 3** shows the location of parks within South St. Paul.

There are five community parks within the city. These are large parks that provide both organized active recreation and natural amenities. Community parks include:

- *Kaposia Landing: 800 Bryant Avenue*
Features: Paved trails, dog park, river viewing
- *Kaposia Park: 1028 Wilde Avenue*
Features: Disc golf, ball field, picnic shelter, paved trails, playground, volleyball, hockey rink
- *Lorraine Park: 756 3rd Avenue S*
Features: Splash pool, picnic shelter, hockey rink, volleyball, playground
- *McMorrow Field: 200 South Street E*
Features: Softball, baseball, and soccer fields
- *Veterans Field: 1400 3rd Street N*
Features: Softball and baseball fields

The city also has six smaller neighborhood parks, including:

- *Fred Lawshe Park: 3rd Avenue and 2nd Street N*
Features: Gardens, benches
- *Grandview Park: 350 Grand Avenue W*
Features: Overlook, playground area, open field space
- *Harmon Park: 1310 Henry Avenue*
Features: Softball field, playground, tennis courts, hockey rink, picnic area
- *Northview Park: 635 18th Avenue N*
Features: pool, playground, basketball court, baseball field
- *Spruce Park: 1311 7th Avenue S*
Features: Playground, basketball court
- *Summit Park: 173 15th Avenue N*
Features: Playground, basketball court, tennis courts



South St. Paul Bicycle & Pedestrian Plan

Figure 3: Community Destinations



In addition, there are five special use park areas within the city, including the following:

- DNR Public Boat Launch on the Mississippi River
- Off-leash dog park at Kaposia Landing
- Seidl's Lake Park maintained in cooperation with Inver Grove Heights
- Simon's Ravine Trailhead, providing access to the River to River Greenway and Mississippi River Regional Trail.
- Wildflower Levee Park, accessible only by the Mississippi River Regional Trail

Schools

The South St. Paul Public School District boundaries mirror the city's boundaries. The school district operates four schools with a total student population of approximately 3,500. Schools within the city are shown on **Figure 3** and include:

- South St. Paul Secondary School
- Lincoln Center Elementary School
- Kaposia Education Center (elementary school)
- Community Learning Center at Wakota Arena (alternative school)

Transit Service

Two Metro Transit lines provide bus transit service to South St. Paul. Route 68 is a local bus route that runs through the heart of South St. Paul and connects to Downtown St. Paul, West St. Paul, and Inver Grove Heights. The route provides service every 10-30 minutes during rush hour, with service every 30-60 minutes for the rest of the day and on weekends. This route stops on 5th Avenue S, Southview Boulevard, 12th Avenue N, and Thompson Avenue.

Metro Transit route 71 is a local bus route that connects South St. Paul with Little Canada, Maplewood, Downtown St. Paul, and Inver Grove Heights. Route 71 provides service every 15-30 minutes during rush hour, and every 30-60 minutes during the rest of the day and on weekends. This route follows Concord Street, Armour Avenue, Hardman Avenue S, and Grand Avenue E but does not enter the town center.

Commercial Districts

The Southview-Hill district is the main commercial district, located along Southview Boulevard and Marie Avenue. This district includes a grocery store, pharmacy, seasonal farmer's market, and several restaurants and specialty small businesses. There are also commercial land uses spread along the length of Concord Street.



Transit stop on Southview Boulevard

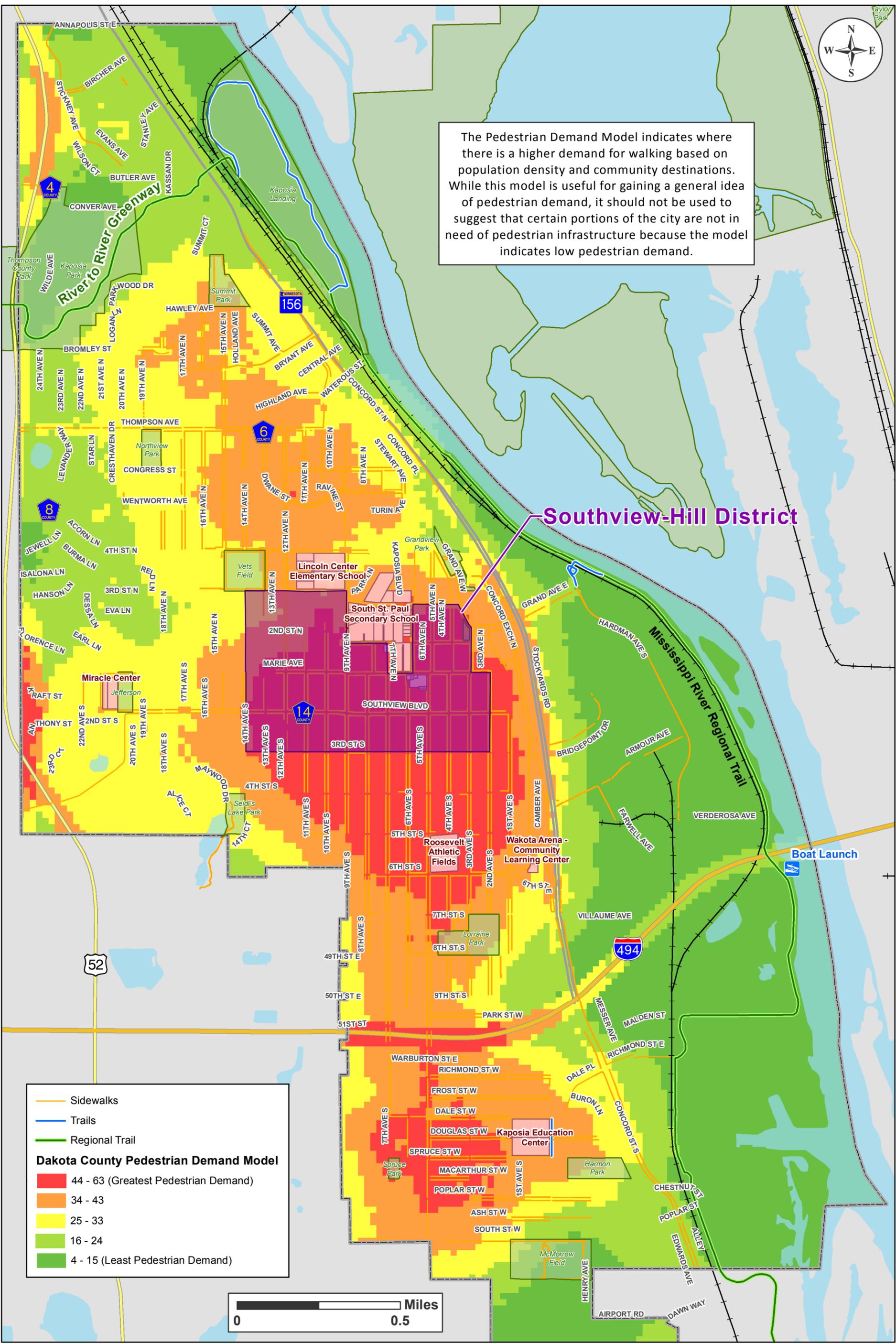
Pedestrian Demand Model

Dakota County created a pedestrian demand model to understand where there is higher demand for walking based on population density and community destinations such as schools, parks, and commercial districts. **Figure 4** shows the results of the pedestrian demand model in South St. Paul. The town center (including the Southview-Hill district) is shown as having the greatest pedestrian demand, while the outer edges of the city are shown as having little pedestrian demand. The MRRT corridor is shown as having low pedestrian demand because of the lack of population density and community destinations in immediate proximity to the trail. While this model is useful for gaining a general idea of pedestrian demand within the city, it should not be used to suggest that certain portions of the city are not in need of pedestrian infrastructure because the model does not indicate pedestrian demand.





The Pedestrian Demand Model indicates where there is a higher demand for walking based on population density and community destinations. While this model is useful for gaining a general idea of pedestrian demand, it should not be used to suggest that certain portions of the city are not in need of pedestrian infrastructure because the model indicates low pedestrian demand.



Southview-Hill District

Boat Launch

Sidewalks
 Trails
 Regional Trail

Dakota County Pedestrian Demand Model

	44 - 63 (Greatest Pedestrian Demand)
	34 - 43
	25 - 33
	16 - 24
	4 - 15 (Least Pedestrian Demand)



South St. Paul Bicycle & Pedestrian Plan
Figure 4: Dakota County Pedestrian Demand Model



6. Existing Conditions

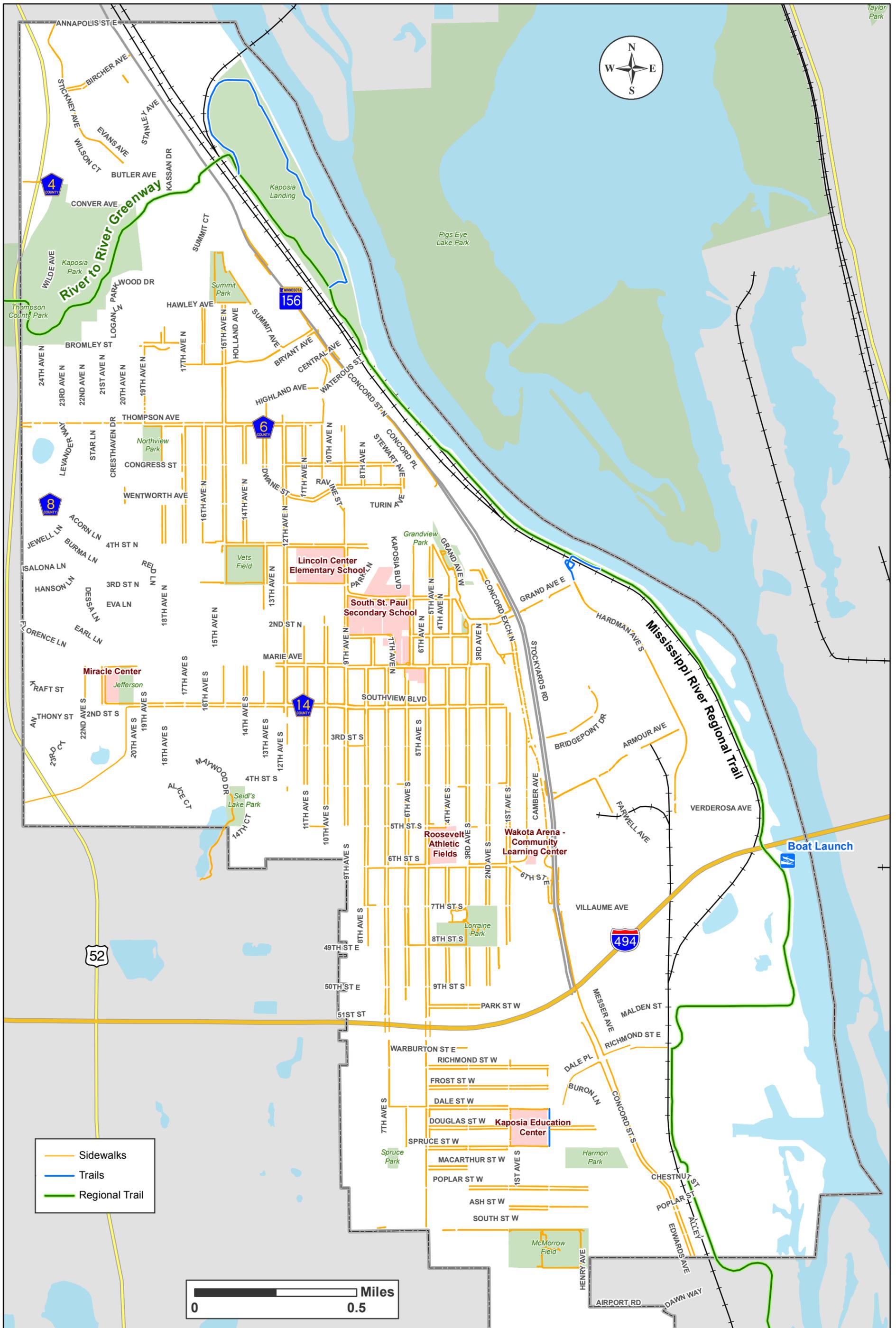
This chapter includes a summary of existing conditions for walking and bicycling in South St. Paul, including information on existing sidewalks, trails, gaps in the network, and known safety problems. This chapter also includes a summary of the city's practices and policies that impact bicycle and pedestrian transportation and previous city plans.

Existing sidewalks

Figure 5 shows sidewalks within South St. Paul. The city owns over 55 miles of sidewalk. As shown in Figure 5, many streets have sidewalk on at least one side of the road. Sidewalk density is greatest in the town center, particularly between Thompson Avenue, 12th Avenue N, I-494, and Concord Street. Many commercial and residential streets in this area have sidewalks on both sides. This area was developed in the late 19th and early 20th century, when it was common to construct sidewalks along with every street and residential/commercial development.

Outside the city center, where development occurred later in the 20th Century, the sidewalk network is limited. There are few sidewalks in the industrial district between Concord Street and the Mississippi River. The residential area south of I-494 has some sidewalk coverage. There are very few sidewalks west of 12th Avenue and north of Thompson Avenue. These areas were developed later than the town center during a time when it was not as common to construct sidewalks with every street project.





South St. Paul Bicycle & Pedestrian Plan

Figure 5: Existing Sidewalks and Trails



Existing trails

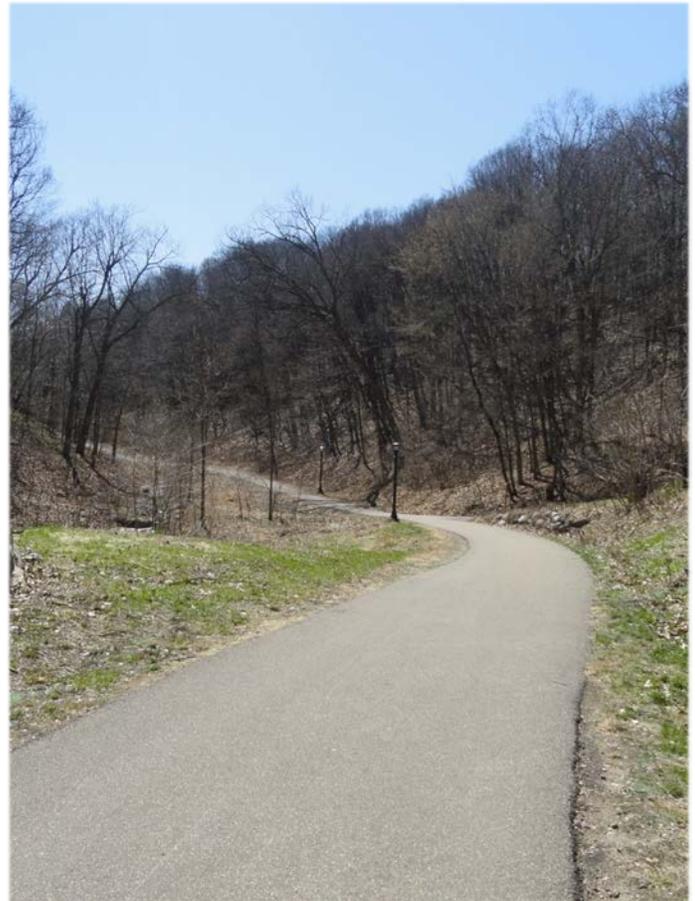
The city and Dakota County own and operate over 7 miles of multiuse trails within South St. Paul. **Figure 5** shows the location of existing trails within the city. The Mississippi River Regional Trail (MRRT) is a bicycle and pedestrian trail that parallels the Mississippi River. The MRRT is owned and operated by Dakota County. The trail connects Kaposia Landing Park in South St. Paul with Inver Grove Heights. An extension of the MRRT is planned for 2017 that will connect to the City of St. Paul and Harriet Island. There are limited access points to the MRRT, as Concord Street and the Union Pacific Railroad separate the trail from residential areas. Trail users can access the MRRT from the following locations:

- Simon's Ravine Trailhead (North Concord Street south of Butler Avenue)
- Bryant Avenue Bridge (Bryant Avenue and North Concord Street)
- Spiral Bridge (Grand Avenue at Hardman Avenue)
- DNR Boat Launch (Verderosa Avenue and I-494 bridge)
- Richmond Street (400 Block of E Richmond Street)

The River to River Greenway (R2RG) connects to the MRRT at Kaposia Landing. A pedestrian/bicycle bridge crosses Concord Street to connect Kaposia Landing and the MRRT with Simon's Ravine Trailhead. The R2RG is owned and operated by Dakota County. The trail connects South St. Paul with West St. Paul and within the next several years will create a complete connection to Mendota Heights and Lilydale. Within South St. Paul, the R2RG follows Simon's Ravine and extends through Kaposia Park. At the western edge of Kaposia Park, a pedestrian/bicycle bridge provides a connection across US 52 and to Thompson County Park in West St. Paul. Several sections of the R2RG are very steep and can be challenging for bicyclists, children, older adults, and people in wheelchairs or motorized scooters. There are limited access points to the R2RG in South St. Paul due to the topography of the area. Trail users can access the R2RG from the following locations:

- Simon's Ravine Trailhead (North Concord Street south of Butler Avenue) (relatively level access)
- 19th Avenue N (steep access points)
- Kaposia Park at Wilde Avenue (relatively level access)

The city owns and operates a multi-use trail within Kaposia Landing Park. The trail connects to the MRRT to create a 2 mile loop around the park.



River to River Greenway

Barriers to bicycle and pedestrian travel

Figure 6 shows barriers for bicyclists and pedestrians within South St. Paul. Most physical barriers are related to the city's topography, Concord Street, I-494, and the Union Pacific Railroad.

Topography

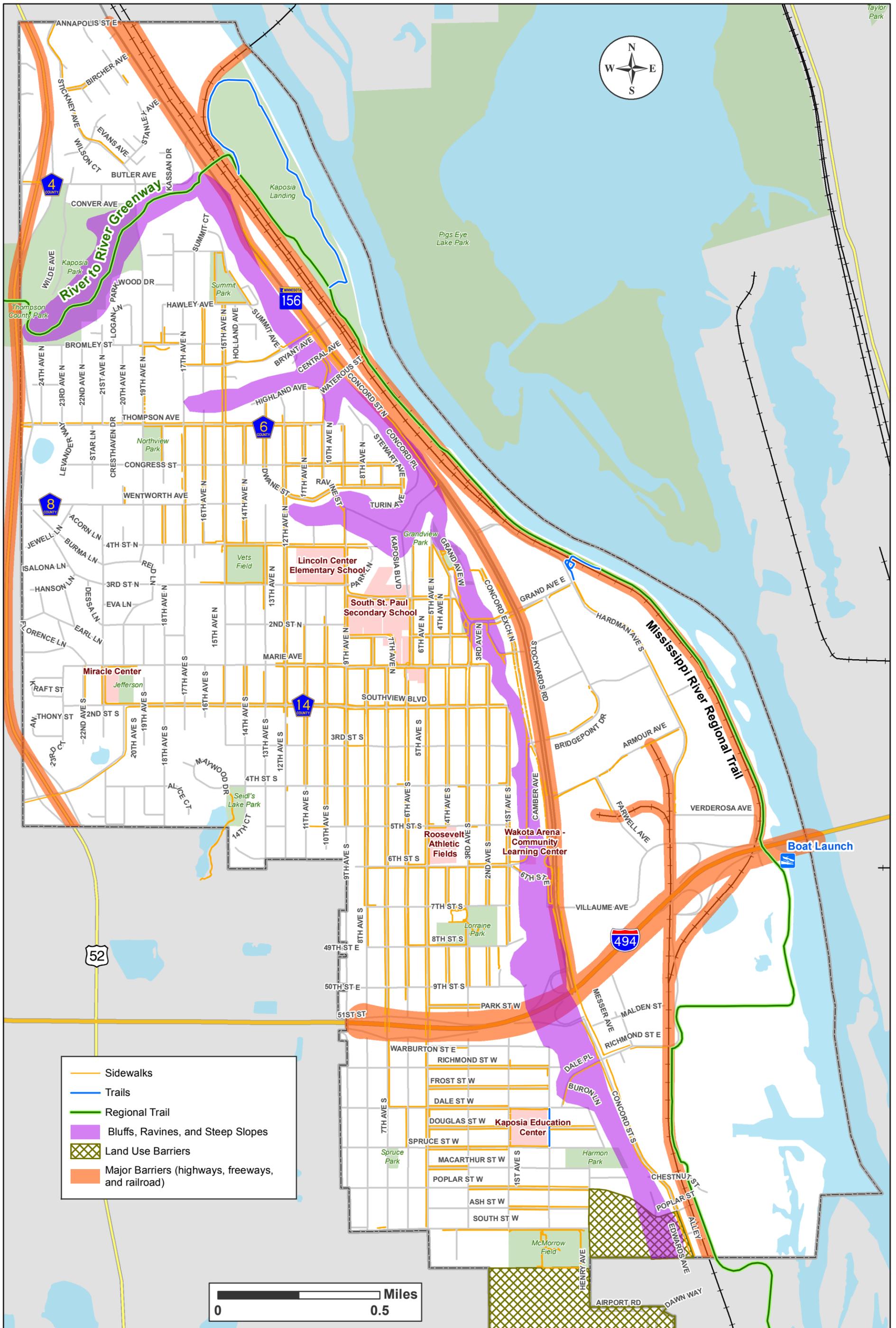
As noted previously, residential areas of the city are located on top of a bluff overlooking the Mississippi River. The edge of the bluff is shown in **Figure 6**. Pedestrians and bicyclists must climb or descend the steep bluff to connect to Concord Street and the MRRT. Even on top of the bluff, there are several hills that make it challenging for bicyclists and pedestrians. Additionally, there are a few locations where ravines interrupt the street grid, resulting in indirect bicycle and pedestrian connections. Pedestrians, bicyclists, and people using wheelchairs/motorized scooters are particularly sensitive to topography-related barriers, as it takes extra time and effort to ascend and travel around the city's bluffs, ravines, and hills.

Concord Street /TH 156

Concord Street (TH 156) is a barrier for pedestrian and bicycle travel. Concord Street follows the eastern side of South St. Paul and is the boundary between residential and industrial areas of the city. North of Wentworth Avenue, Concord Street is a two-lane roadway with a 35 MPH speed limit. South of Wentworth Avenue, Concord Street is a four-lane divided roadway with turn lanes and a speed limit of 40 MPH. Average traffic volumes on Concord Street vary between 8,000-14,000 vehicles per day. Pedestrians and bicyclists must cross Concord Street to access the MRRT. Crossing Concord Street is challenging for pedestrians and bicyclists due to the width of the roadway, traffic volumes, and traffic speeds. Due to the city's topography there are few roadways that connect to and cross Concord Street. The pedestrian/bicycle bridge connecting Simon's Ravine Trailhead with Kaposia Landing is the only grade-separated crossing of Concord Street. All other pedestrian/bicycle crossings are located at signalized intersections, with the exception of one mid-block crosswalk south of Simon's Ravine Trailhead that connects the Concord Business Center with a parking lot.



Pedestrian crossing of Concord Street at Grand Avenue



South St. Paul Bicycle & Pedestrian Plan

Figure 6: Barriers to Walking and Bicycling



Interstate 494 (I-494)

I-494 separates South St. Paul's southernmost neighborhoods from the rest of the city. As I-494 is a freeway, all pedestrian and bicycle crossings are grade-separated. The pedestrian and bicycle crossings of I-494 are in the following locations:

- 5th Avenue South (overpass)
- 7th Avenue South (overpass)
- Concord Street (underpass)
- Verderosa Avenue (underpass)
- Mississippi River Regional Trail (underpass)

Union Pacific Railroad

The Union Pacific Railroad is a barrier to access to the MRRT. The railroad parallels the Mississippi River and is located between the MRRT and Concord Street. Most pedestrian and bicycle crossings of the railroad are grade-separated. Grade-separated crossings are in the following locations:

- Kaposia Landing: near Simon's Ravine Trailhead
- Bryant Avenue
- Grand Avenue

Though there are no sidewalks or trails on most of these roadways, pedestrians and bicyclists can cross the railroad at-grade on the following roadways:

- Verderosa Avenue (underneath I-494)
- Hardman Avenue (south of I-494)
- Richmond Street
- Chestnut Street

Known pedestrian/bicycle safety problems

Pedestrian and bicycle safety is a primary concern for the City of South St. Paul. Understanding where pedestrian and bicycle crashes have occurred will help the city better target safety improvements. A search of the Minnesota Department of Transportation (MnDOT) Crash Mapping Analysis Tool (CMAT) data showed a total of 24 pedestrian-vehicle and 60 bicycle-vehicle crashes in South St. Paul in the 10-year period between 2004 and 2013. **Figure 7** shows the location of traffic crashes involving pedestrians and bicyclists.

Crashes involving pedestrians are not concentrated at any particular intersection. Southview Boulevard, Thompson Avenue, 5th Avenue S, and South Street W are the only streets with multiple pedestrian-vehicle crashes over the 10-year period. There were no pedestrian fatalities reported during this time.

Crashes involving bicyclists were concentrated along several corridors, including Concord Street, Thompson Avenue, Marie Avenue, Southview Boulevard, and 5th and 7th Avenues South. There were two fatal bicycle-vehicle crashes over the 10-year period: at the intersections of Marie and 3rd Avenues and Poplar and Concord Streets.

Issues identified in previous plans

The South St. Paul Comprehensive Plan, Lincoln Center Elementary Safe Routes to School Plan, Dakota County Transportation Plan, Metropolitan Council Regional Bicycle System Study, and Southview-Hill Area Study have highlighted pedestrian and bicycle needs in South St. Paul. Implementation of the pedestrian and bicycle recommendations of these plans has been limited. The city has found it to be challenging to implement these recommendations due to limited funding and right of way constraints. Grant funding is not available for many of these recommended infrastructure improvements. As a result, the city must budget for these improvements as a part of its Capital Improvement Plan.

South St. Paul Comprehensive Plan

The South St. Paul 2030 Comprehensive Plan completed in 2008 identified the need to improve pedestrian and bicycle conditions on Concord Street. The plan recommended creating a more pedestrian-oriented environment by constructing continuous sidewalk and trails, enhancing streetscaping, removing billboards, undergrounding utilities, and buffering railroad tracks. The plan also identified the need for a mix of commercial and residential redevelopment in the Concord Exchange area (near Concord Street and Grand Avenue) to encourage pedestrian traffic.

The comprehensive plan identified the following priorities for eliminating sidewalk gaps:

- Southview Boulevard from 20th St to West St. Paul (completed in 2013)
- Concord Street N from Grand Ave to St. Paul border (parts have sidewalk, but some poorly maintained)
- 19th Ave N from Bromley St to Butler Ave
- 7th Ave S from I-494 to southern city boundary
- East-west connections from Lorraine Park to Roosevelt Park

The comprehensive plan also recommended trail construction and expansion in several parks, including:

- Harmon Park
- Kaposia Park
- Lorraine Park
- Mc Morrow Field
- Northview Park
- Seidl's Lake Park
- Spruce Park
- Summit Park



Lincoln Center Elementary School Safe Routes to School Comprehensive Plan

In 2010, The South St. Paul School District, Dakota County, and the City of South St. Paul developed a Safe Routes to School Comprehensive Plan for Lincoln Center Elementary School. The plan identified several challenges for walking and bicycling to school, including a lack of sidewalks, volume of pick up/drop off traffic, double parking, speeds on 3rd and 4th Streets, and concerns about the safety of walking on Southview Boulevard and 12th Avenue S. The plan included the following recommendations to increase walking and bicycling to school:

- Construct a sidewalk on 3rd St between 12th and 13th Avenues
- Investigate the feasibility of crossing improvements at Southview Boulevard and 12th Street and traffic calming around the school
- Pursue opportunities to construct new sidewalks in the neighborhoods surrounding the school
- Post signs identifying school patrolled intersections
- Sign and enforce no parking zones around intersections to provide better sight lines
- Create a Safe Routes to School committee
- Hold monthly walk to school events
- Organize a walking school bus or bike train
- Require remote drop off sites for students being driven to school
- Install more bike racks and develop an incentive bike program with helmets/locks as rewards
- Create a pedestrian safety education program
- Develop a Safe Routes to School website

Dakota County Transportation Plan

The Dakota County Transportation Plan, completed in 2012, identified several strategies and infrastructure gaps related to bicycling and walking. Strategies in the plan included the following:

- Provide for continuity, barrier removal, and safety for all users
- Create a countywide greenway system to support non-motorized transportation modes
- Improve the pedestrian network in and near county right of way
- Ensure adequate resources are planned for and allocated to trail maintenance
- Ensure safety of pedestrian facilities, including improving ADA-accessibility
- Include bicycle and trail facilities in the Dakota County Capital Improvement Program (CIP)

The plan also identifies and prioritizes trail and sidewalk gaps along several county roadways in South St. Paul. The following roadways have medium to high-priority trail and sidewalk gaps: Butler Avenue (CSAH 4), Thompson Avenue (CSAH 6), Wentworth Avenue (CSAH 8), and Southview Boulevard (CSAH 14).

Metropolitan Council Regional Bicycle System Study

The Metropolitan Council completed the Regional Bicycle System Study in 2014. The study identified key regional destinations, developed a set of guiding principles for identifying regional bicycle corridors, and proposed a regional bicycle transportation network including priority regional bicycle transportation corridors. Two priority regional bicycle transportation corridors were identified in South St. Paul; however, these corridors have undefined alignments at this time. The first is a north-south corridor roughly following the Mississippi River and Concord Street. The second is an east-west corridor roughly following Southview Boulevard/Marie Avenue.

Southview-Hill Area Study

In 2014, the city completed the Southview-Hill Area Study to address land use and transportation needs in the core of the city roughly between 2nd Street N, 2nd Avenue S, 3rd Street S, and 14th Avenue S. The study was intended to create a framework for revitalizing Southview Boulevard and Marie Avenue, and to provide recommendations for the planned 2016-2017 reconstruction of Southview Boulevard. Many of the study's recommendations related to pedestrian and bicycle infrastructure, including:

- Placemaking to attract people
- Pedestrian scale street lighting
- Street furnishings: benches, bike racks, trash cans
- Pedestrian and bicycle wayfinding
- Intersection crossing improvements: alternative paving materials, improved signalization, pedestrian countdown timers, curb extensions, and traffic calming
- Improve connections at edges of study area, particularly for bike connections
- Bicycle racks, lockers, and other amenities

South St. Paul's current role in pedestrian- and bicycle-related infrastructure and encouragement

Below is a summary of South St. Paul's role in pedestrian- and bicycle-related infrastructure, education, encouragement, and enforcement.

Pedestrian Infrastructure

Sidewalks within public right of way are owned by the City of South St. Paul. The city constructs five- to six-foot sidewalks; however there are some existing sidewalks that are only four feet wide. Boulevards are typically narrow due to limited right of way.

The city is responsible for repair of sidewalk and curb ramps. The city generally inspects sidewalk condition on a rotating five-year basis; however, staffing limitations have sometimes resulted in longer gaps between inspections. If problems are identified during the inspection, the city makes needed repairs and the full cost of the repair is assessed to the property owner. When a street or sidewalk project is completed, curb ramps are brought into compliance with current Americans with Disabilities Act (ADA) guidelines. Property owners are not assessed for upgrading or constructing curb ramps. In addition to its inspection and repair program, the city repaints crosswalk markings on an annual basis. The city's policy is to repaint crosswalks by June 30.

The City of South St. Paul does not perform winter maintenance on sidewalks; it is the responsibility of the property owner. City code requires property owners to remove snow and ice within 12 hours of a snow event. Enforcement is done on a complaint basis. Following a complaint, the first step in the process is for the city to send the property owner a notice to clear the sidewalk. If the sidewalk is not cleared, the city will remove the snow and bill the property owner.



Bicycle Infrastructure

The city constructs eight- and ten-foot wide multiuse trails in city parks. The MRRT and R2RG are owned and operated by Dakota County. There are currently no bike lanes or shoulders that are designated as bike routes in the city.

The city removes snow from trails within city parks. Trails are plowed after streets are cleared – usually within 48-72 hours unless there is another snow event. Dakota County plows the Mississippi River Regional Trail within 48 hours of a snow event.

There is limited bike parking at some parks, city hall, and the library. The city does not actively install bike parking nor does it have an ordinance requiring bike parking with new development.





Education, Encouragement, and Enforcement

Safe Routes to School: The city has participated in Safe Routes to School activities at Lincoln Center Elementary School. The school has organized walk/bike to school events in the past and has completed a Safe Routes to School plan. The South St. Paul School District provides bus transportation for students who live more than one mile from their elementary school, or more than two miles from their secondary school. Students who live within one mile of their elementary school or two miles of their secondary school are considered within the school walking boundary.

Education and encouragement campaigns: The city promotes the Simple Steps program led by Dakota County. The Simple Steps program encourages residents to log their time spent walking to be eligible for prize drawings. The wayfinding signs mentioned below were installed to make residents aware of walkable destinations in the city. The city also posts trail and park maps on its website. Bike rodeos and bike safety events have been held in the past and police officers have participated.

Wayfinding: Several years ago, the city installed 51 wayfinding signs for pedestrians and bicyclists that list distances to destinations and pictograms of activities available at those sites. The purpose of the signs was to make people aware of destinations and encourage walking and bicycling by showing the short distance between destinations in the city.

Enforcement: The city currently does not have any enforcement campaigns. In general, enforcement is complaint-driven. School zones are patrolled heavily during drop off and pick up to ensure compliance with existing laws.

7. Community Engagement

Input from residents was a major component in the development of this plan. A number of community engagement techniques were used to gather input and feedback. A summary of those activities and the input they garnered are described in this chapter.

Strategies Employed	
<p>Mobile Display Materials June – August 15</p>	<p>The mobile display materials were developed as part of a traveling booth that was set up at key community locations to advertise the study and to encourage residents to participate in the planning process. These materials were used to advertise the online survey, to provide background information on the study and to highlight upcoming events associated with the study. The display materials included flyers, bookmarks and a community survey. The mobile display was set up at the library, city hall and at the community engagement events.</p>
<p>Website and Social Media Updates May - December</p>	<p>The city has regularly posted information about the study on its website and on other social media outlets. It will continue to provide updates throughout the course of the study so that residents can easily obtain current information about the study process.</p>
<p>Survey June 1 - August 15</p>	<p>A survey was developed to collect information on existing bicycling and walking habits, barriers to walking and bicycling, and desires for a pedestrian and bicycle network within the community. This survey was posted online and hard copies were made available as part of the mobile display materials that were used at community events and were stationed at the library and at city hall.</p>
<p>Project Press Release June/November</p>	<p>In an attempt to provide broad coverage about the bicycle and pedestrian plan and its associated community engagement activities, a press release was prepared and distributed to contacts at the St. Paul Pioneer Press, Star Tribune, South St. Paul Voice, and television and web-based media. The first news release was distributed on June 9, 2014. The press release generated an article about the plan which was published in the St. Paul Pioneer Press on June 14, 2014. An article was also published in the June/July edition of the South St. Paul city newsletter.</p> <p>A second press release was distributed in November when the draft plan was ready for public review and comment.</p>
<p>City Council Meetings June/November</p>	<p>Information about the study was presented at the June 2, 2014 City Council meeting. At this meeting, the general scope of the plan was presented to the council.</p>

The council also provided information about their interests regarding the plan and some of their priorities.

A second meeting with the City Council was held in November to present a draft of the Bicycle and Pedestrian Plan and to incorporate any council comments.

Community Outreach Events

<p>Kaposia Days June 29</p>	<p>The mobile display was set up at the Kaposia Days event to gather input on the needs and priorities for bicycling and walking within the city. Input was received by 15 people. Staff was available at the event to answer questions and to encourage residents to provide feedback.</p>
<p>Fare for All July 8</p>	<p>The mobile display was set up at the Fare for All event at Central Square to solicit input from the public. 20 participants provided input. Staff was available at the event to answer questions and to encourage residents to provide feedback.</p>
<p>Senior Outreach July 14</p>	<p>The city and its consultant led a discussion at the John Carrol Senior high rise building to engage input from seniors living within the community. They were asked to provide their input on the existing networks, barriers that limit their use of the networks and new opportunities they would like to have incorporated into the plan. This was a great way to make certain the senior and disabled populations were heard during this process. Approximately 10 residents and staff members participated in this event.</p>
<p>Mayor's Youth Task Force July 30</p>	<p>The city and its consultant attended a meeting of the Mayor's Youth Task Force to conduct a visioning and information gathering session on the needs and priorities for bicycling and walking. 20 students provided their feedback.</p>
<p>Swimming Under the Stars July 30</p>	<p>The mobile display was set up at the Swimming Under the Stars event party at Northview Pool. Surveys were available to fill out and a drawing for a prize was held for those that successfully completed the survey. 15 children participated at this event. Staff was available at the event to answer questions and to encourage children to participate in the survey.</p>
<p>Southview Boulevard/3rd Avenue Open House August 7</p>	<p>The mobile display was set up at one of the open houses being held for the Southview Boulevard/3rd Avenue project. Staff was available at the event to answer questions and to encourage attendees to participate in the survey. Approximately 7 people provided their input at this meeting.</p>

Findings

Below is a summary of the findings from the community engagement activities. This information will be used to aid in the development of the Bicycle and Pedestrian Plan.

In-Person Community Outreach

The project team collected in-person feedback from approximately 87 residents at six events. The following is a summary of the general themes provided by community members. Detailed summaries of each event are included as an appendix to this memo.

Community assets for walking and bicycling:

- Overall, people commented that they enjoy walking and biking in South St. Paul and are very pleased with the winter and summer maintenance provided by the city for trails.
- The Mississippi River Regional Trail is an asset to the community and is used regularly by residents.

General comments:

- Lighting along trails is desired to improve conditions during the fall and winter months.
- The bluffs and ravines are a barrier to walking and bicycling in the city, particularly for people trying to access the Mississippi River Regional Trail.
- A trail or shoulder is needed on the Bryant Ave to Kaposia Park to provide access to Kaposia Landing.
- Several residents mentioned the need for education about walking and bicycling in the city. Seniors suggested the city distribute flags for wheelchairs/scooters to improve visibility of these users. Younger members of the community mentioned that drivers need to be educated about stopping for pedestrians in crosswalks.



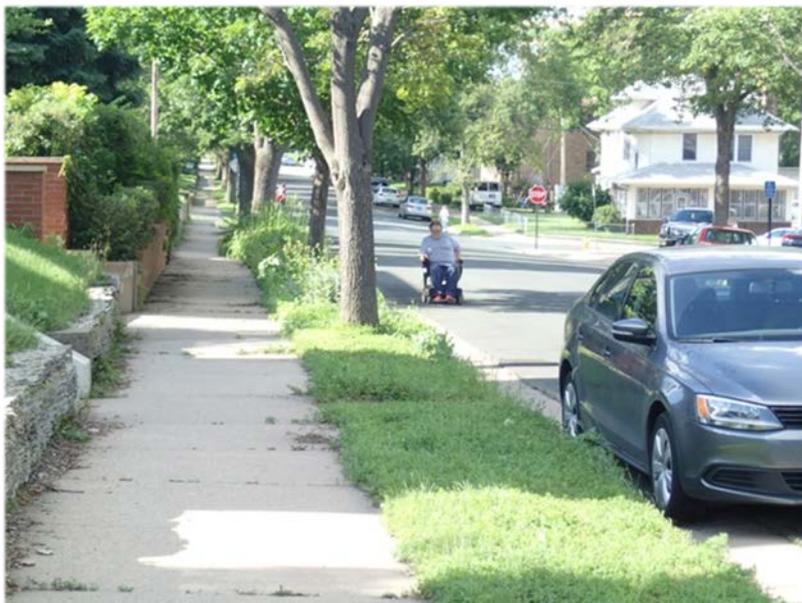
Meeting with Mayor's Youth Task Force

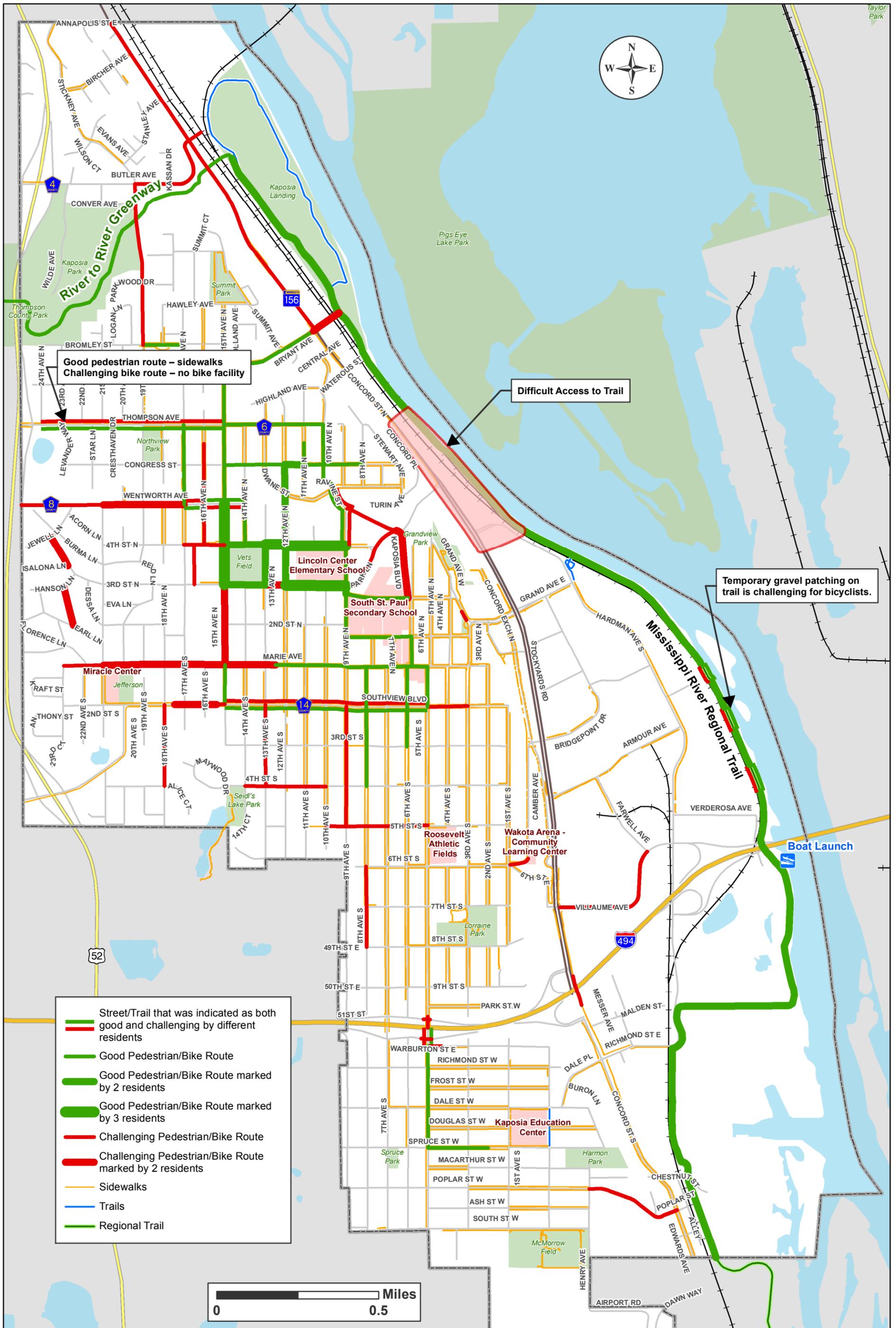
Pedestrian-specific concerns:

- Residents identified gaps in the sidewalk network that they want eliminated. These gaps are detailed on **Figure 8**.
- Residents are concerned about the safety people who use wheelchairs and motorized scooters in the streets. Wheelchair/scooter use in streets is common in areas where sidewalks are obstructed, in poor condition, or are not cleared of snow and ice in the winter.
- Many seniors are concerned about uneven sidewalks and rough sidewalk surfaces (pavers or scored patterns in sidewalks). These conditions can be challenging for pedestrians using walkers, wheelchairs, or motorized scooters.
- Winter maintenance of sidewalks is a concern for seniors, especially when sidewalks are inconsistently cleared by property owners.
- Crossing Concord to get to the Mississippi River Regional Trail or the businesses on the east side of the roadway is a major challenge due to the street width and short pedestrian crossing cycles.
- At signalized intersections, countdown timers and accessible pedestrian signals (APS) would be helpful for seniors.
- Trees and bushes can create sight line problems for pedestrians and vehicles.
- More benches are needed to provide places for seniors to rest.

Bicycle-specific concerns:

- Additional on-street bicycle routes need to be identified in the core of South St. Paul as many of the sidewalks are narrow and people do not want bicycles on the sidewalks.
- Traffic signals do not detect bicycles.
- Younger members of the community mentioned the need to provide off-street facilities (sidewalks and trail) for younger children and places on the road for teenagers who can ride their bicycles faster than is safe on a sidewalk.
- Several residents mentioned the need for a parallel bike route to Southview Boulevard.





South St. Paul Bicycle & Pedestrian Plan

Figure 8: Results of Community Mapping Exercise



Community Destinations and Mapping Exercises

At each community outreach event participants were asked to identify places they currently walk and bicycle and places they would like to walk and bicycle. Several of the most common walking and bicycling destinations are listed below:

- South St. Paul Secondary School
- Lincoln Center Elementary School
- Mississippi River Regional Trail
- Kaposia Landing
- Veterans Field
- T&T Galley
- Knowlan's Market
- Pro Pharmacy
- Dairy Queen
- Friend/family's house

Participants were provided with a map and were asked to identify routes that were good or challenging for walking and bicycling. **Figure 8** shows the routes identified. Below is a summary of the primary routes considered good and challenging for walking and bicycling. Some of the same routes were identified as good by one resident and challenging by another resident.



Good walking and bicycling routes:

- Mississippi River Regional Trail
- River to River Greenway
- 5th Avenue S between I-494 and Spruce Street E
- Spruce Street E between 1st and 5th Avenues S
- Southview Boulevard between 5th and 15th Avenues S
- 8th Avenue S between 4th Street S and Marie Avenue
- 6th Avenue S between Southview Boulevard and Marie Avenue
- 2nd Street N between 6th and 9th Avenues N
- 3rd Street N between 9th and 12th Avenues N and 13th and 15th Avenues N
- 4th Street N between 9th and 15th Avenues N
- 12th Avenue N between 3rd Street N and Congress Street
- Thompson Avenue between 10th and 24th Avenues N is good for walking
- 15th Avenue N between 3rd Street N and Bryant Ave
- Bryant Ave between 17th Avenue N and Concord Street N

Challenging walking and bicycling routes:

- Poplar Street E between Henry Ave and Concord Street S
- Crossing 5th Avenue S near I-494 can be challenging due to heavy traffic
- Villaume Avenue between Concord Street and Farwell Avenue
- 5th Street S between 5th and 10th Avenues S
- 9th Avenue N between 5th Street S and Southview Boulevard
- 4th Street S between 10th and 14th Avenues S
- Southview Boulevard between 3rd Avenue S and 18th Avenue S
- Marie Avenue between 13th and 23rd Avenues N
- Streets within the Tangletown neighborhood as they do not have sidewalks
- 15th Avenue S between Marie Avenue and 3rd Street N
- Wentworth Avenue between 14th Avenue and western city limits
- 16th Avenue N between 4th Street N and Thompson Avenue
- Thompson Avenue between 15th and 24th Avenue is challenging for bicyclists
- 19th Avenue N between Bromley Street and Butler Avenue
- Bryant Avenue between Concord Street N and the Mississippi River Regional Trail
- Concord Street N between Bryant Ave N and the northern city limits
- Butler Avenue between 19th Avenue and Concord Street N.
- Temporary gravel segments along the Mississippi River Regional Trail are challenging for bicycling.

Survey

A survey was developed to collect input from residents about walking and bicycling in South St. Paul. This survey was available online and in paper format at community events and in the mobile display unit. A total of 50 online surveys were partially or fully completed. Eight paper surveys were submitted. The surveys asked residents about walking and bicycling habits, destinations, barriers, and ideas for making walking and bicycling easier and safer. The following sections summarize input from the survey.

Walking in South St. Paul

During the summer months approximately 44 percent of survey respondents walk more than twice a week. A majority of walkers (84 percent) walk mainly to get exercise, while 26 percent walk to have fun and 14 percent walk to go places instead of driving a car.

Residents were asked to identify destinations they walk to in South St. Paul. **Chart I** shows the top 10 responses to this question. The most popular destinations include Southview Hill and Marie Avenue Area (47 percent), Grand Avenue/Mississippi River Regional Trail (40 percent), and Kaposia Landing (37 percent). Residents also noted that they walk to friend/family's homes and the grocery store (35 percent).

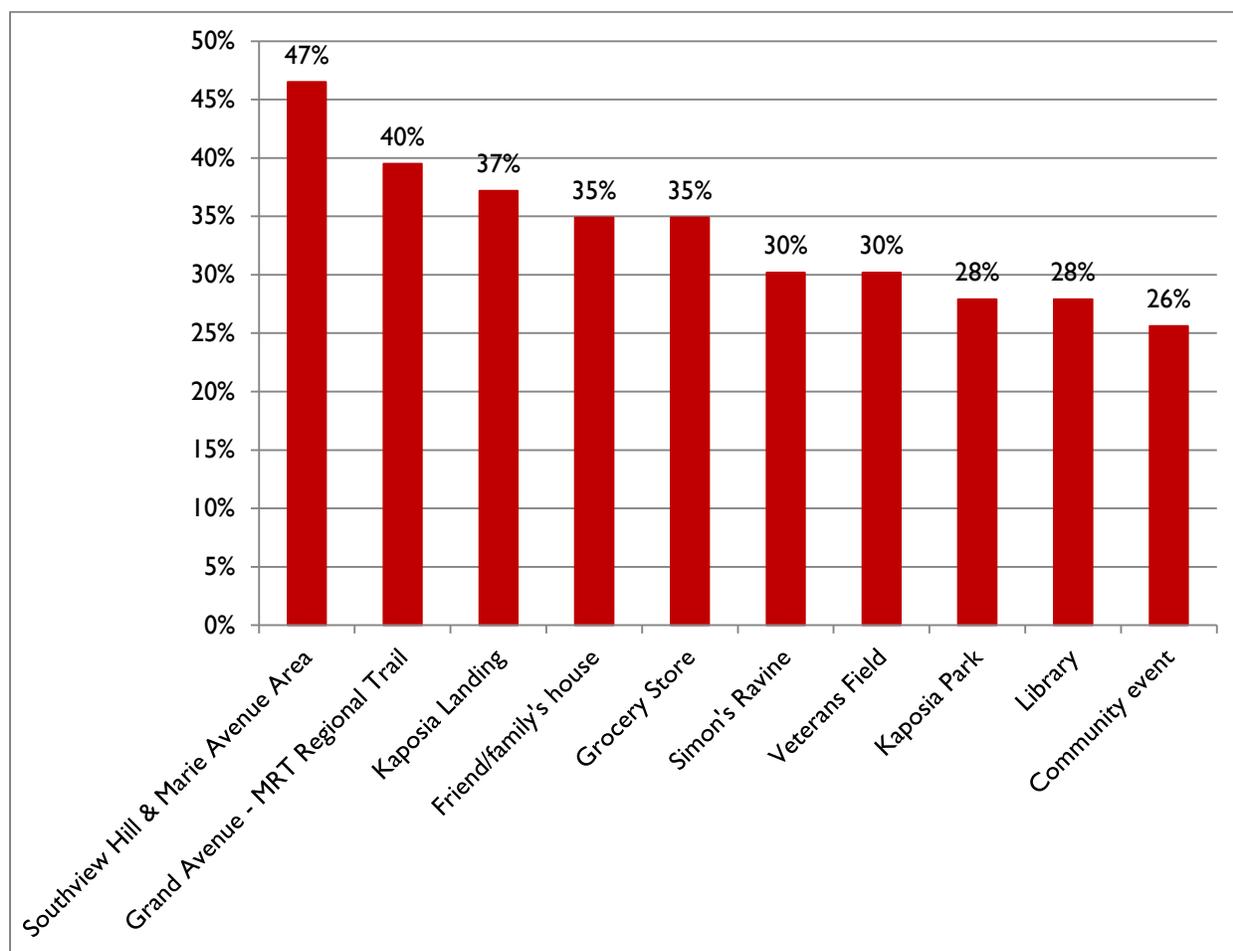


Chart I: What places do you walk to in or around South St. Paul?

Survey participants were also asked which destinations they would like to be able to walk to more easily. Kaposia Landing was the most common response (23 percent), followed by Grand Avenue/Mississippi River Regional Trail (21 percent) and Southview Hill and Marie Avenue Area (19 percent). **Chart 2** shows the top 10 places respondents would like to be able to walk to more easily.

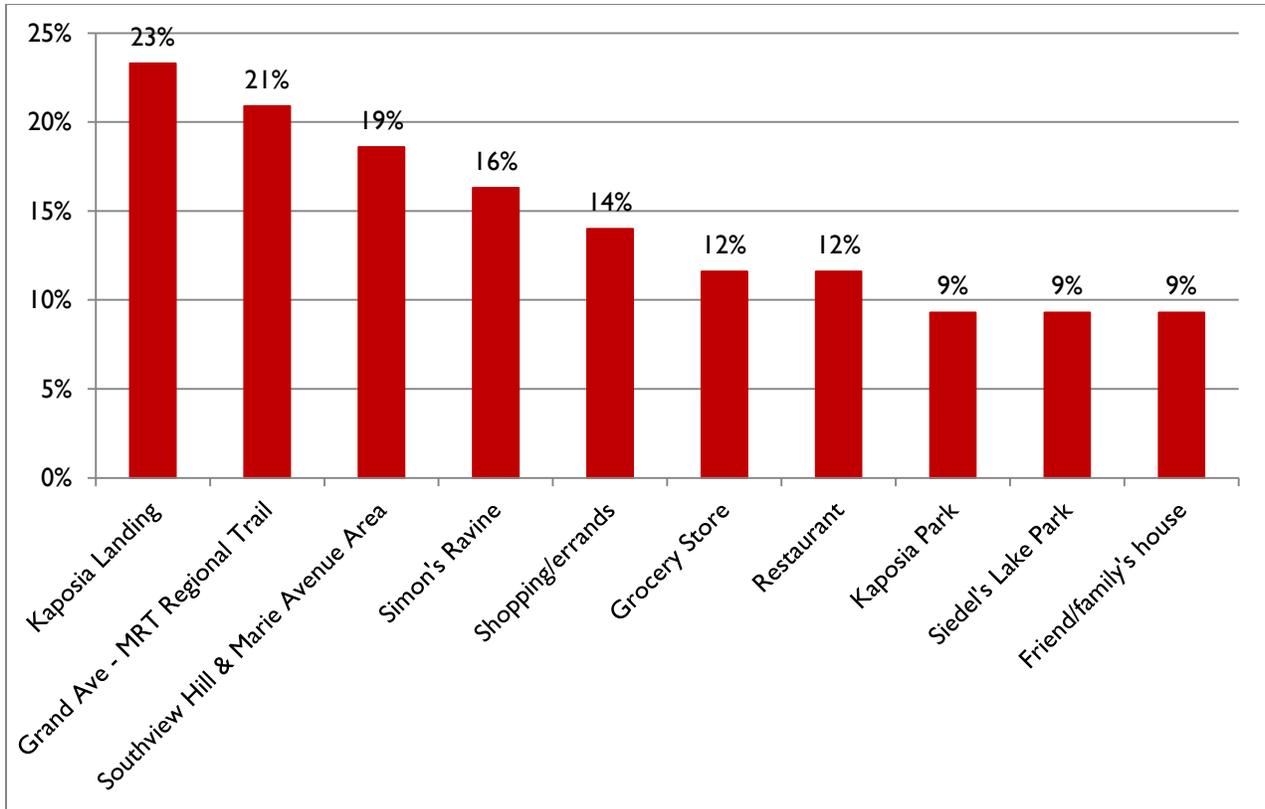


Chart 2: Which places in or around South St. Paul do you wish you could walk to more easily?

During the winter approximately 30 percent of survey respondents walk more than twice a week. 23 percent of respondents never walk in the winter.

Respondents were asked to identify the top two things that keep them from walking during the winter months. The biggest concerns are: fear of falling/injury because of snow and ice (54 percent), cold temperatures (40 percent), and short days/preference not to walk after dark (37 percent).

Respondents were asked an open-ended question about what would help them walk to places in or around South St. Paul more often. Common themes included the following:

- Clear sidewalks in the winter, particularly on hills.
- Fill sidewalk gaps.
- Provide drinking fountains with water bottle refilling features.
- Encourage more development in the city (shopping and restaurants) so that there are destinations within walking distance.
- Improve surface condition and width and remove barriers (trees and utilities) in sidewalks. Southview Boulevard was commonly mentioned as a problem.

- Provide wider sidewalks.
- Install and maintain better marked crosswalks.
- Provide benches for walkers to rest.
- Install sidewalks in neighborhoods without sidewalks.
- Use different paint to mark crosswalks. The paint currently used is slippery under wet conditions.
- Improve connections to St. Paul and West St. Paul.
- Remove litter and provide trash cans to prevent littering.
- Improve streetscapes and provide more greenery.
- Orient businesses towards the sidewalk, not towards a parking lot.

Respondents were also asked what would help them get to their destination (additional signs, wayfinding information, maps, etc). Most respondents did not see a need for additional resources to help them find their way in South St. Paul, but a few respondents noted that it would be helpful to have signs and maps to help identify destinations.

Bicycling in South St. Paul

Bicycling was less common than walking among survey respondents. Approximately 35 percent of respondents bike once or twice a week during the summer. 26 percent never bike. Exercise is the most common reason for biking (51 percent), followed by to have fun (28 percent) and go places instead of driving a car (23 percent).

Respondents were asked an open-ended question to identify the top three places they bike. The Mississippi River Regional Trail (14 responses) and various parks (13 responses) were the most common places people bike. The library (6 responses), grocery store (4 responses) and various restaurant/shopping destinations were also mentioned. When asked which destinations they wish they could bike to more easily, the most common responses were parks (10 responses), Southview Hill/Marie Avenue (5 responses), and various businesses.

Very few respondents indicated that they bike during the winter. Only 2 percent of respondents indicated that they bike once or twice a week during the winter, and 7 percent bike less than once a week. Fear of falling/injury because of snow and ice (47 percent), cold temperatures (47 percent), and fear of biking next to cars in slippery/snowy conditions (40 percent) were the most common reasons indicated.

Chart 3 on the next page shows the most common factors that deter residents from bicycling within the community. The most common response was that there is too much traffic or too high of speeds on a respondent's route (31 percent). Hills (26 percent) and poor riding conditions (26 percent) were also identified as a common deterrent from bicycling. Lack of bicycle parking (21 percent) and no connections to destinations (21 percent) were also noted as deterrents to bicycling.

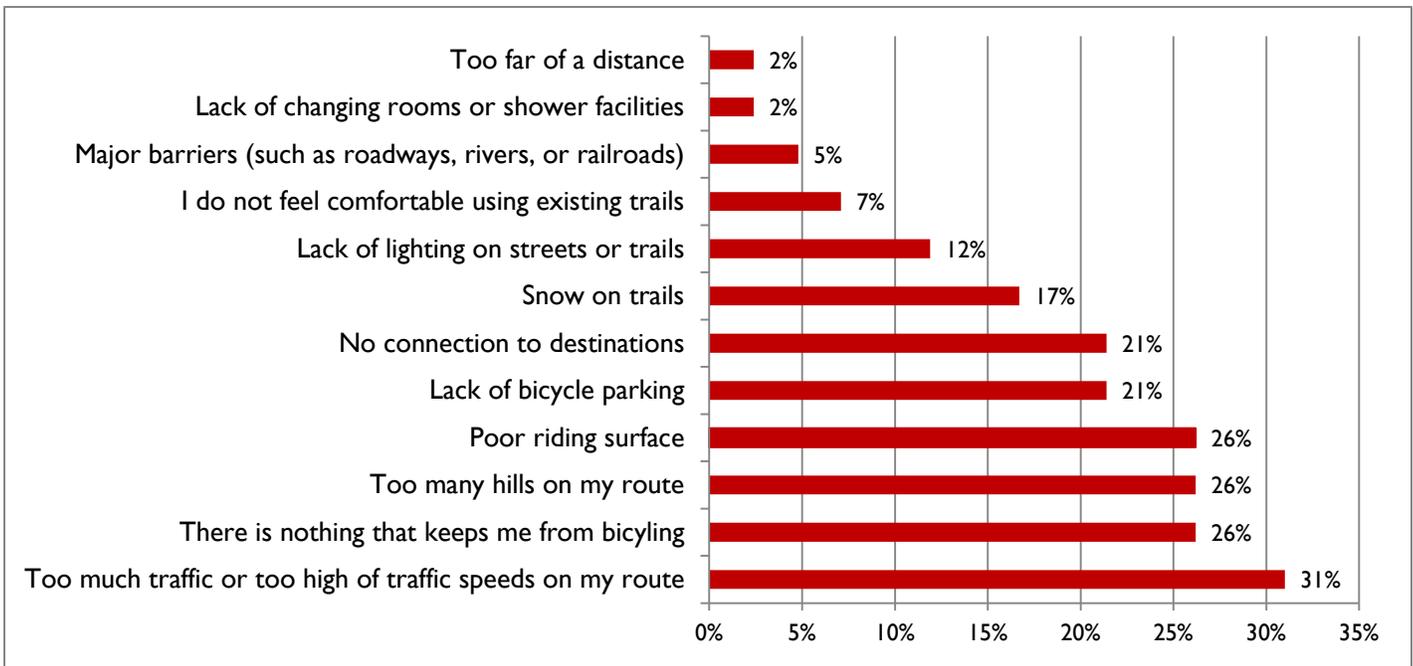


Chart 3: How does the physical environment or other factors deter you from bicycling?

Respondents were asked an open-ended question about what would help them bike to places in or around South St. Paul more often. Common themes included the following:

- Bike lanes, particularly on Concord Street
- Trails
- Winter street maintenance
- Improve crossings of Southview Boulevard
- Encourage bicyclists to use low-traffic streets
- Improve connections to St. Paul and West St. Paul

Respondents were also asked what would help them get to their destinations on a bike. As with walking, wayfinding signage and maps were mentioned as being useful. However, several residents did not like the existing wayfinding signage. Better bike parking was also mentioned.

Demographics

Slightly more women (54 percent) responded to the survey. The majority of survey responses were from those that identified themselves as Caucasian/White (85 percent). Caucasian/White respondents were slightly overrepresented, as 80 percent of the city’s population identifies itself as Caucasian/White. While 12 percent of residents identify as Latino/Hispanic, only 1 survey (2 percent) was completed by a Latino/Hispanic resident.

8. Proposed pedestrian and bicycle network and infrastructure improvements

Pedestrian and bicycle infrastructure is critical to reaching the goals of this plan. This chapter presents the proposed pedestrian and bicycle network and identifies key infrastructure improvements. This section also includes general design guidance for pedestrian and bicycle facilities.

Pedestrian network

South St. Paul currently has a robust sidewalk network in the center of the city. However, there are fewer sidewalks in neighborhoods in the northern, western, and southern portions of the city. As it is not feasible to construct sidewalks on all streets, the city proposes to prioritize its sidewalk construction and preservation efforts on an arterial sidewalk network that connects to key destinations within South St. Paul. The city has also identified several planned sidewalk connections that are not part of the arterial sidewalk network, but should be constructed for safety and neighborhood connectivity reasons.

Arterial sidewalk network

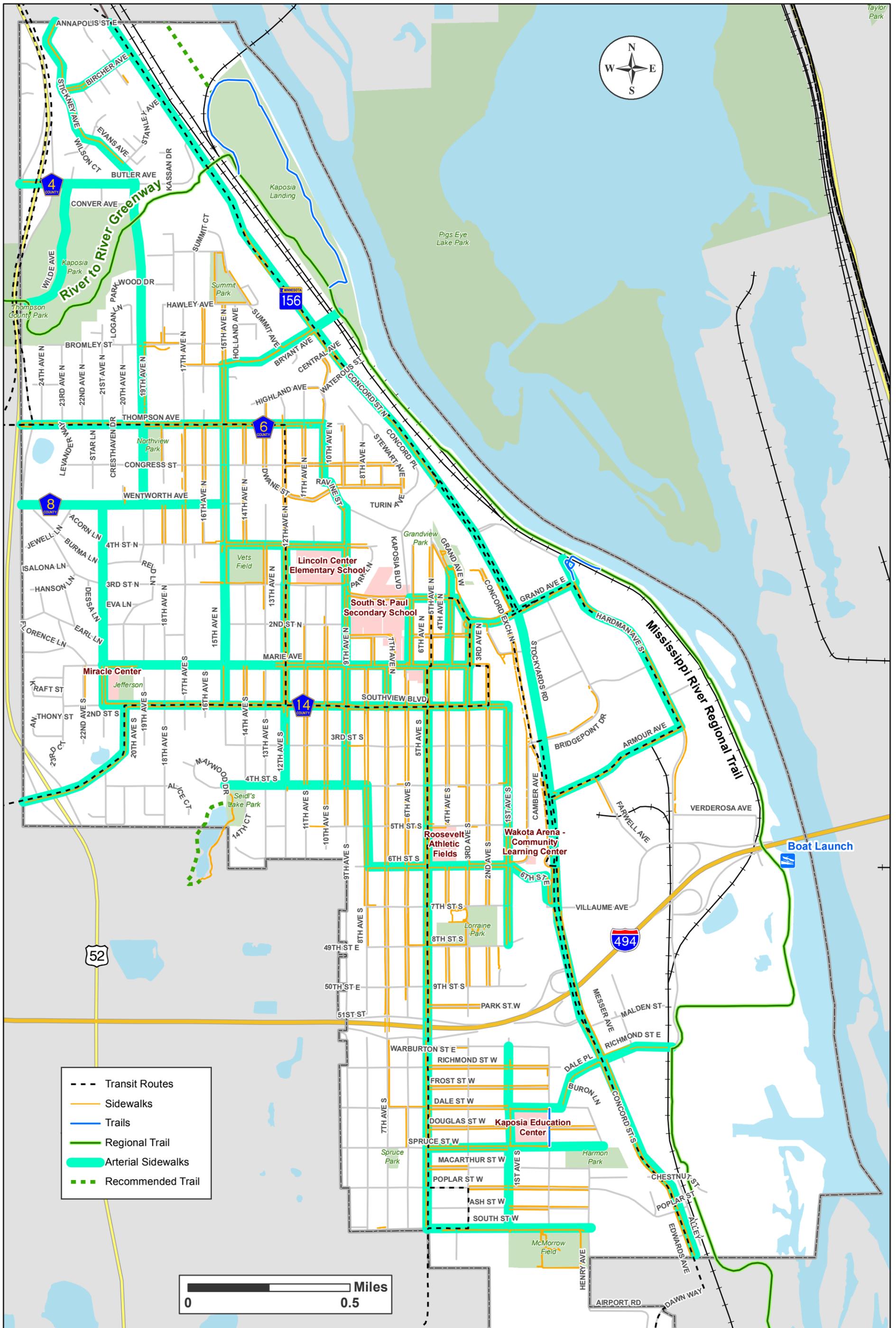
The arterial sidewalk network is the city's priority for sidewalk construction, preservation, and pedestrian infrastructure improvements. The city will focus new sidewalk construction, curb ramp upgrades, intersection improvements, and new pedestrian-scale lighting on the arterial network.

Figure 9 shows the South St. Paul arterial sidewalk network. The arterial sidewalk network connects important pedestrian destinations within the city. The following criteria were used to establish the arterial sidewalk network:

- Commercial corridor: Important commercial corridors should be accessible via the arterial sidewalk network
- Transit route: Streets with transit stops are included in the arterial sidewalk network
- Schools: All schools are connected to the arterial sidewalk network
- Parks: Parks noted in **Chapter 7** as key community destinations are accessible via the arterial sidewalk network
- Mississippi River Regional Trail (MRRT): Connections to the MRRT are included in the arterial sidewalk network
- Geographic equity: The arterial sidewalk network includes connections in all neighborhoods so that all residents will have access to the arterial sidewalk network
- Existing sidewalks: Where possible, the arterial sidewalk network follows existing sidewalks

Table I includes a full listing of the streets included in the Arterial Sidewalk Network.





South St. Paul Bicycle & Pedestrian Plan

Figure 9: Arterial Sidewalk Network



Table 1: Proposed Arterial Sidewalk Network

Arterial Sidewalk Network Segment Location	Length in feet	Existing Sidewalk?	Key Connections
1st Avenue S from Southview Boulevard to 8th Street S	3,930	Existing sidewalk	Southview-Hill district, Lorraine Park
1st Avenue S from Warburton Street to South Street	2,962	Existing sidewalk in some locations	Kaposia Education Center
3rd Avenue from Grand Avenue to Southview Boulevard	1,432	Existing sidewalk	City Hall, library, Southview-Hill district
3rd Street N/Grand Avenue W from 3rd to 6th Avenues N	1,209	Existing sidewalk	Senior housing, South St. Paul High School
4th Avenue N from Grandview Park to Marie Avenue	1,566	Existing sidewalk	Southview-Hill district, senior housing
4th Street N from 15th Avenue N to 9th Avenue N	1,976	Existing sidewalk	Vets Field, Lincoln Center Elementary School, transit stop
4th Street S from Seidl's Lake Park to 8th Avenue S	2,324	No existing sidewalk	Seidl's Lake Park, neighborhood connection to arterial sidewalk network
5th Avenue S from Marie Avenue to southern city limits	9,199 feet (1.74 miles)	Existing sidewalk	Southview-Hill district, transit route, Roosevelt Athletic Fields, connection to Inver Grove Heights
6th Avenue N from 3rd Street N to Marie Avenue	1,050	Existing sidewalk	South St. Paul Secondary School, Central Square Community Center, Southview-Hill district
6th Street S from 8th Avenue S to Concord Street	3,446	Existing sidewalk	Roosevelt Athletic Fields, transit stops
7th Avenue S from Marie Avenue S to Southview Boulevard	686	Existing sidewalk	Southview-Hill district
8th Avenue S from 4th to 6th Streets S	1,320	Existing sidewalk	Neighborhood connection to arterial sidewalk network

Arterial Sidewalk Network Segment Location	Length in feet	Existing Sidewalk?	Key Connections
9th Avenue N/Ravine Street from Wentworth Avenue to Marie Avenue	4,523	Existing sidewalk	Lincoln Center Elementary School, South St. Paul Secondary School, Southview-Hill district
10th Avenue N from Thompson Avenue to Wentworth Avenue	1,571	Existing sidewalk	Route to Lincoln Center Elementary and South St. Paul Secondary School
12th Avenue N from 4th Street N to 4th Street S	3,892	Existing sidewalk except between 3rd and 4th Streets S	Transit route, Lincoln Center Elementary School, Southview-Hill district
15th Avenue N from Bryant Avenue N to Southview Boulevard	5,551 feet (1.05 miles)	Existing sidewalk in some locations	Vets Field, transit stop
21st Avenue N from Wentworth Avenue to Southview Boulevard	3,270	No existing sidewalk except for between Marie Avenue and Southview Boulevard	Miracle Center, Jefferson Park, neighborhood connection to Marie Avenue and Southview Boulevard
Armour Avenue from Concord Street S to Hardman Avenue S	2,431	Existing sidewalk	Transit route, industrial district
Bircher Avenue from Stickney Avenue to Concord Street N	1,270	Existing sidewalk	Connection to Concord Street N
Bryant Avenue from 15th Avenue N to Kaposia Landing/MRRT	2,124	Existing sidewalk (aside from bridge over railroad tracks)	Kaposia Landing, MRRT
Butler Avenue (CSAH 4) from western city limits to 19th Avenue	1,877	Existing sidewalk between US 52 entrance ramps, no sidewalk between eastern US 52 ramp and 19th Avenue	Connection to West St. Paul, Kaposia Park
Concord Street (TH 156) from northern city limits to southern city limits	22,799 feet (4.32 miles)	Existing sidewalk in some segments	Transit route, commercial, industrial, connection to St. Paul and Inver Grove Heights
Dale Place/Richmond Street E from Dale Street E to MRRT	2,298	Existing sidewalk	Kaposia Education Center, transit stop, industrial district, MRRT
Dale Street E from 1st Avenue S to Dale Place	838	Existing sidewalk except for between Syndicate Avenue and Dale Place	Kaposia Education Center

Arterial Sidewalk Network Segment Location	Length in feet	Existing Sidewalk?	Key Connections
Grand Avenue from 3rd Avenue to Hardman Avenue	1,801	Existing sidewalk except for between Concord Street and Hardman Avenue	Commercial district, transit route, MRRT access
Hardman Avenue from MRRT to Verderosa Avenue	4,943	Existing sidewalk	Transit route, connection to MRRT, industrial district
Marie Avenue from 21st Avenue to 3rd Avenue	5,966 feet (1.13 miles)	Existing sidewalk except between 19th and 12th Avenues	Southview-Hill district, Jefferson Park, Miracle Center, Central Square Community Center, transit
South Street from 5th Avenue to Henry Avenue	2,636	Existing sidewalk except for partway between Elrose Court and 5th Avenue S	Transit stop, McMorrow Field
Southview Boulevard from western city limits to 1st Avenue S	8,851 feet (1.67 miles)	Existing sidewalk	Southview-Hill district, transit route
Spruce Street from 5th Avenue S to Eldridge Avenue	2,872	Existing sidewalk except for between Syndicate Avenue and Eldridge Avenue	Kaposia Education Center, Harmon Park, transit stop
Stickney Avenue/19th Avenue N from northern city limits to Wentworth Avenue (CSAH 8)	8,538 feet (1.62 miles)	Existing sidewalk in some segments	Kaposia Park, River to River Greenway, transit stop
Thompson Avenue (CSAH 6) from western city limits to 10th Avenue N	4,917	Existing sidewalk	Transit route, Northview Park, connection to West St. Paul
Wentworth Avenue (CSAH 8) from western city limits to 15th Avenue N	3,313	No existing sidewalk (planned sidewalk construction in 2017)	Connection to West St. Paul
Wilde Avenue from Butler Avenue (CSAH 4) to River to River Greenway	2,280	No existing sidewalk	River to River Greenway

Proposed design/maintenance recommendations for the arterial sidewalk network

As noted above, the arterial sidewalk network is the city's priority for investments in pedestrian infrastructure. To reinforce the importance of the arterial sidewalk network, the city has established the following pedestrian infrastructure design and maintenance practices.

Sidewalk design

- Sidewalk width: five-foot or wider sidewalks desired for new construction.
- Boulevard width: four- to six-foot boulevard desired for new sidewalk segments.
- Sidewalk obstructions: Focus on removing/relocating obstructions (lighting, utility poles, etc.).
- Intersections: The city will consider curb extensions as part of new projects and will consider intersection upgrades to improve pedestrian crossing conditions.

Sidewalk repair

- Ensure that the arterial sidewalk network is inspected once every five years and sidewalks are repaired as determined by inspections.

Snow removal

- Consider occasional proactive sidewalk snow/ice inspection to ensure that sidewalks are cleared by property owners.
- Consider removing snow on key segments of the arterial sidewalk system (such as the town center).
- Explore ways to tighten the timeframe between a snow removal complaint and clearing of sidewalk after complaint.
- Clear corners of snow regularly to improve pedestrian crossing conditions during the winter.
- Explore creation of a business improvement district to remove snow in the Southview-Hill district.

Crosswalk markings

- Consider zebra-style crosswalks and durable markings (epoxy or poly-preform) at pedestrian crossings.

Lighting

- Ensure that the arterial sidewalk network is illuminated at night. New lighting designs should minimize glare and direct light only to the sidewalk (and street if necessary), not to the sky or adjacent structures.

Wayfinding signage

- Maintain and install pedestrian-scale wayfinding to direct pedestrians to community destinations via the arterial sidewalk network. Lettering on wayfinding signs should be sized to be approximately four inches tall.

Pedestrian mobility emphasis routes

The City of South St. Paul strives to design and maintain a sidewalk network that is accessible for all pedestrians, including those who use walkers, wheelchairs, and scooters. The city understands that obstructions in sidewalks, poor sidewalk/curb ramp surface conditions, and lack of snow/ice removal leads some residents to use wheelchairs or scooters in the street. The city's guidelines for the arterial sidewalk network address these barriers for pedestrians with mobility challenges.

Two routes on the arterial sidewalk system are considered pedestrian mobility emphasis routes due to their importance for seniors and pedestrians with mobility challenges:

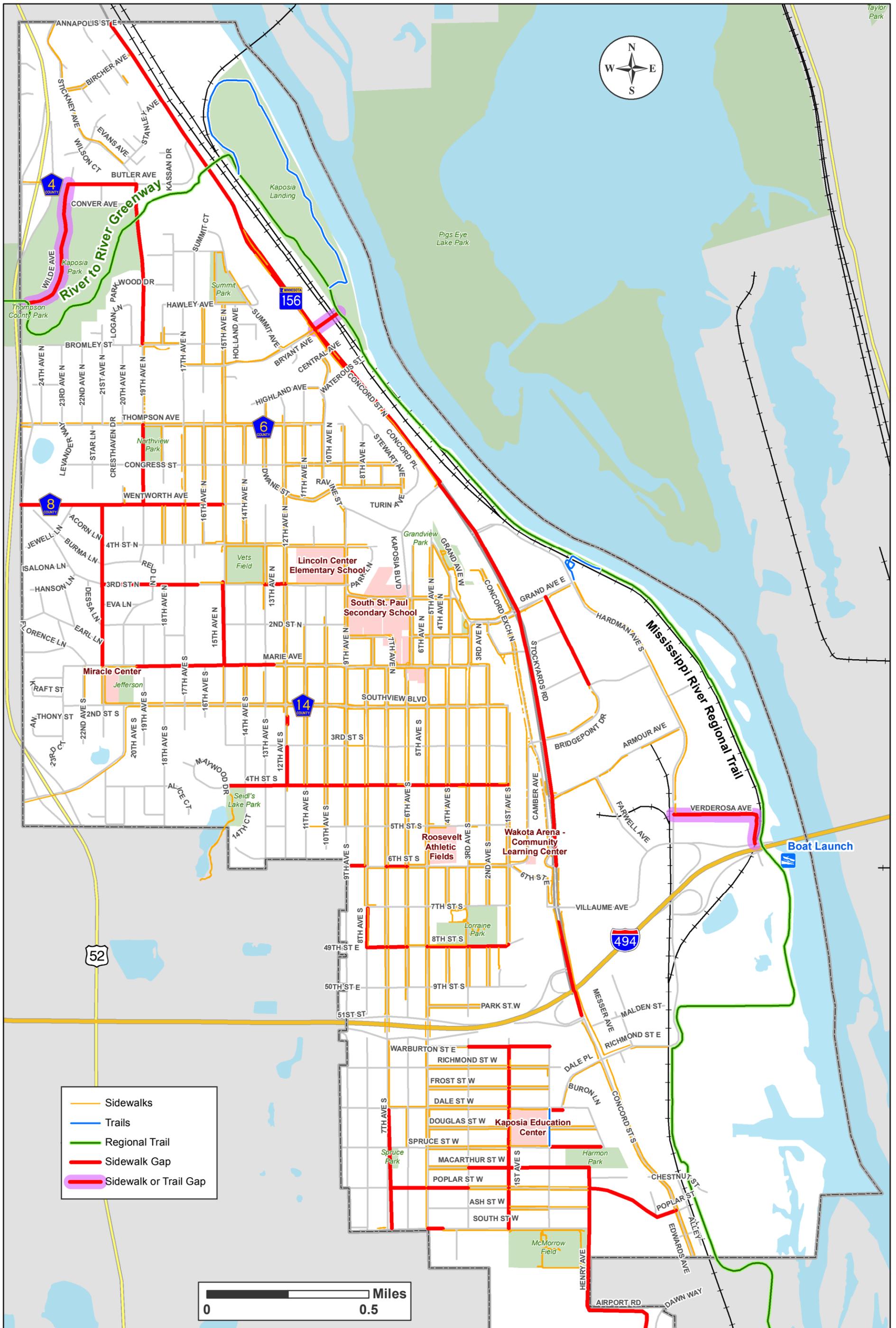
- 4th Avenue S from Grandview Park to Marie Avenue
- Marie Avenue from 3rd to 12th Avenues S

The city will place special emphasis on sidewalk maintenance and removal of obstructions on these sidewalk segments.

Gaps in the sidewalk network

As shown in **Figure 10**, the city has identified several key sidewalk gaps. These gaps are based on an analysis of existing sidewalks and trails and the barriers described above. **Table 2** lists key gaps shown on **Figure 10**. The city intends to focus on closing these gaps within the next 10 to 15 years. It is important to note that this list does not include all streets without sidewalks. The list includes the highest priority gaps for the city. Generally, the city aims to construct continuous sidewalk or trail on at least one side of the streets listed below. Concord Street is an exception to this rule. The city would like to construct sidewalk on the west side of Concord Street and a multi-use trail on the east side.





South St. Paul Bicycle & Pedestrian Plan

Figure 10: Sidewalk Gaps



Table 2: Sidewalk Gaps

Sidewalk Gap	Description	Length in feet	On Arterial Sidewalk Network?
1st Avenue S from Warburton Street to South Street W	Sidewalk gap	2,962	Yes
3rd Street N from 21st Avenue to 16th Avenue S, 14th Avenue to 13th Avenue N	Sidewalk gap	1,870	No
4th Street S from Seidl's Lake Park to 1st Avenue S	Sidewalk gap	4,607	Yes
6th Street S from alley to 8th Avenue, 7th to 6th Avenue	Sidewalk gap	490	No
7th Avenue S from Dale to South Streets W	Sidewalk gap	1,931	No
8th Avenue S from 7th to 8th Street	Sidewalk gap	646	No
8th Street S from 8th to 6th Avenues S, 5th to 1st Avenues S	Sidewalk gap	1,994	No
12th Avenue S from Southview Boulevard to 4th Street S	Sidewalk gap	717	Yes
15th Avenue N from 3rd Street N to Marie Avenue	Sidewalk gap	1,354	No
19th Avenue from Butler Avenue (CSAH 6) to Bromley Street, Thompson (CSAH 6) to Wentworth (CSAH 8) Avenues	Sidewalk gap	3,906	Yes
21st Avenue N from Wentworth (CSAH 8) to Marie Avenues	Sidewalk gap	2,621	Yes
Airport Road from Henry Avenue to city boundary with Inver Grove Heights	Sidewalk gap	1,433	No

Sidewalk Gap	Description	Length	On Arterial Sidewalk Network?
Bridge Point Drive from Grand Avenue to Bridge Point Drive at Bridge Point way	Sidewalk gap	1,591	No
Bryant Avenue from Concord Street N to MRRT	Sidewalk or trail gap	475	Yes
Butler Avenue (CSAH 4) from eastern US 52 entrance ramp to 19th Avenue	Sidewalk gap	1,091	Yes
Concord Street from St. Paul to eastbound I-494 entrance ramps	Existing sidewalk in some areas of Concord Street. The city's long-term goal is to construct continuous sidewalk on the west side of the street and continuous multi-use trail on the east side of the street.	22,770 feet (4.31 miles)	Yes
Dale Street W from Syndicate Avenue to Dale Place	Sidewalk gap	172	Yes
Henry Avenue from MacArthur Street E to Airport Road	Sidewalk gap	2,335	No
MacArthur Street from 3rd Avenue S to Henry Avenue	Sidewalk gap	1,967	No
Marie Avenue from 19th to 12th Avenues N	Sidewalk gap	2,227	Yes
Poplar Street from 7 th Avenue S to 3 rd Avenue S, Henry Avenue to Concord Street S	Sidewalk gap	2,802	No

Sidewalk Gap	Description	Length	On Arterial Sidewalk Network?
South Street W from 5 th Ave S to west of Elrose Court	Sidewalk gap	242	Yes
Spruce Street E from Syndicate to Eldridge Avenues	Sidewalk gap	803	Yes
Verderosa Avenue from Hardman Avenue to boat launch	Sidewalk gap	1,750	Yes
Warburton Street W from 3rd Avenue S to Syndicate Avenue	Sidewalk gap	1,319	No
Wentworth Avenue (CSAH 8) from city border to 15th Avenue N	Sidewalk gap (planned sidewalk construction in 2017)	3,278	Yes
Wilde Avenue from Butler Avenue (CSAH 4) to River to River Greenway	Sidewalk or trail gap	2,280	Yes

Bicycle network

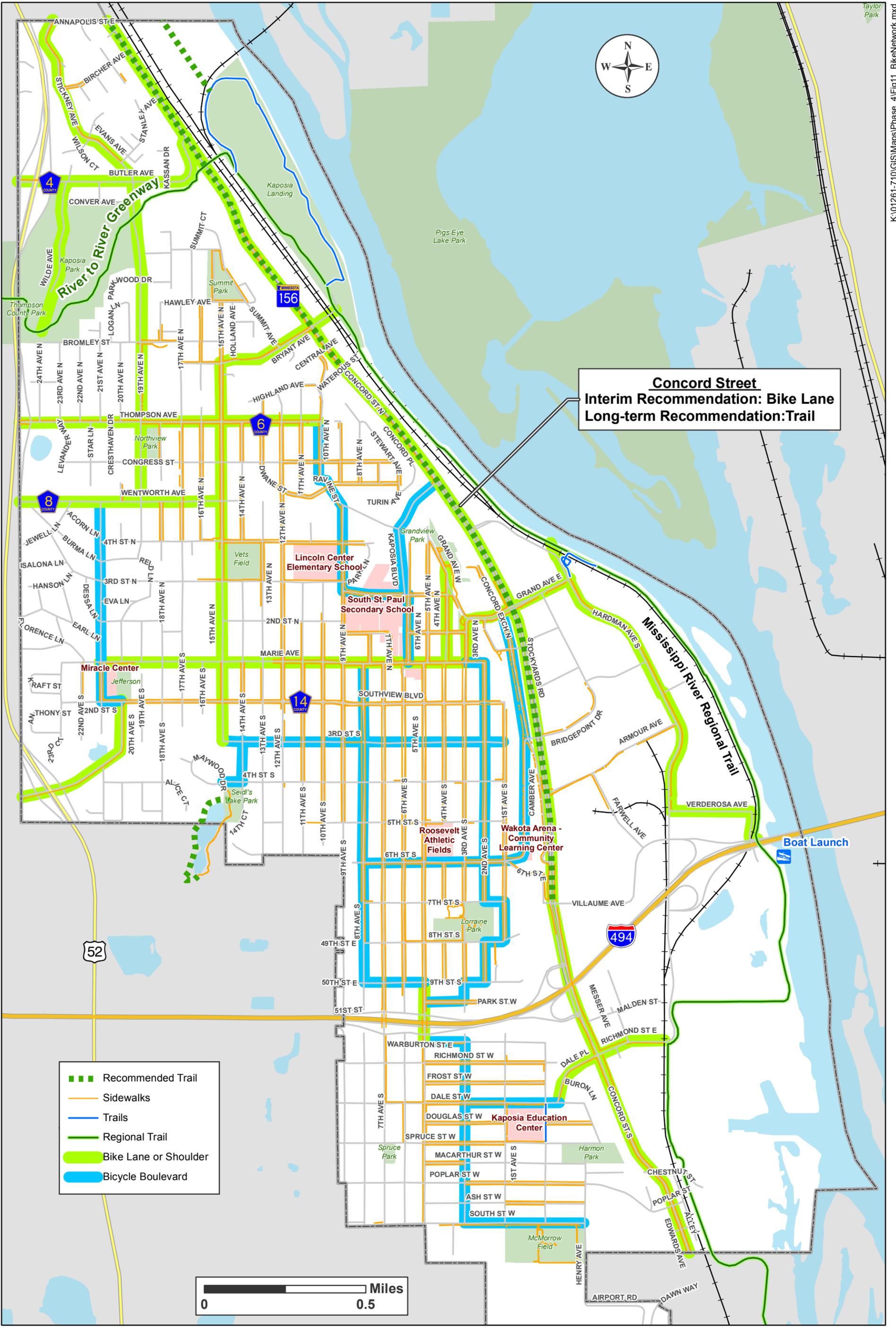
The bicycle network within South St. Paul is limited to the MRRT, R2RG, and trails within Kaposia Landing Park. To further the city's goals of improving bicycle safety and increasing bicycle use, the city has proposed a network of trails, bicycle lanes, shoulders, bicycle boulevards, and bicycle routes. **Figure 11** shows the proposed bicycle network for South St. Paul. It should be noted that bicycles are permitted on all streets (aside from I-494) within South St. Paul. The purpose of the proposed bicycle network is to establish a network of bicycle-friendly streets in the city; however, bicyclists are welcome to ride on any street in the city.

Proposed multi-use trails

Multi-use trails provide physically separated facilities that appeal to most bicyclists, including less experienced bicyclists and children. While trails are a popular bicycle facility type for many bicyclists, the city's development patterns and constrained right of way limit the feasibility of widespread trail construction. South St. Paul plans to construct multi-use trails in three locations as indicated in **Table 3** and shown in **Figure 11**.

Table 3: Proposed Multi-Use Trails

Location	Length
Concord Street (east side) from northern city limits to Villaume Avenue (long-term)	16,622 feet (3.15 miles)
MRRT from Kaposia Landing to northern city limits	1,394 feet
Seidl's Lake: connection to existing trail to create loop	1,962 feet



Concord Street
 Interim Recommendation: Bike Lane
 Long-term Recommendation: Trail

- - - Recommended Trail
- Sidewalks
- Trails
- Regional Trail
- Bike Lane or Shoulder
- Bicycle Boulevard

0 0.5
 Miles



South St. Paul Bicycle & Pedestrian Plan

Figure 11: Bicycle Network



Proposed on-street bicycle facilities

South St. Paul has identified several streets for future on-street bicycle facilities. It is anticipated that most of these facilities will be traditional bike lanes or shoulders; however, the city may consider buffered bike lanes, cycle tracks, or advisory bike lanes in certain situations. These recommendations are intentionally flexible to allow for incremental implementation of the plan. Bikeable shoulders may be installed as an interim solution in order to build out the city’s bicycle network. As bicycle usage grows, the city may consider upgrading shoulders to bike lanes or other dedicated bicycle facilities. On-street bike lanes or shoulders identified for South Saint Paul are shown on **Figure 11** and listed in **Table 4**.

Table 4: Proposed Bike Lanes or Shoulders

Proposed Bike Lane/Shoulder Location	Length in feet
3rd Avenue N from Marie to Grand Avenues	657
5th Avenue S from 9th Street S to Warburton Street W	963
4th Avenue N from Grand Ave W to Marie Avenue	1,475
15th Avenue N from Bryant Avenue to 3rd Street S	6,200 (1.17 miles)
Bryant Avenue from 15th Avenue N to Kaposia Landing Park/MRRT	3,240
Butler Avenue (CSAH 4) from western city limits to Concord Street	1,839
Concord Street from northern to southern city limits (interim)	22,814 (4.32 miles)
Dale Place/Richmond Street E from Dale Street W to MRRT	2,197
Grand Avenue from 3rd to Hardman Avenues S	1,865
Hardman Avenue S from MRRT to Verderosa Avenue	5,275 feet (1 mile)
Marie Avenue from 21st to 3rd Avenues N	6,024 feet (1.14 miles)
Southview Boulevard from turn at 20th Avenue to western city limits	2,632
Stickney Avenue/19th Avenue N from northern city limits to Wentworth Avenue (CSAH 8)	8,515 feet (1.61 miles)
Thompson Avenue from western city limits to 10th Avenue	4,878

Proposed Bike Lane/Shoulder Location	Length in feet
Wentworth Avenue (CSAH 8) from western city limits to 15th Avenue	3,294
Wilde Avenue from Butler Avenue (CSAH 4) to River to River Greenway	2,528
Verderosa Avenue from Hardman Avenue to boat launch	1,887

Proposed bicycle boulevards

The grid street system in South St. Paul is conducive to developing a network of bicycle boulevards. Bicycle boulevards can be marked on local streets parallel to busier streets, providing an alternative to bicycling on streets with high traffic volumes. South St. Paul has identified several streets as future bicycle boulevards, as shown in **Figure 11** and listed in **Table 5**.

Table 5: Proposed Bicycle Boulevards

Proposed Bicycle Boulevard Location	Length in feet
2nd Avenue S/1st Avenue S from Marie Avenue to Park Street W	6,177 (1.2 miles)
3rd Avenue S from Warburton to South Streets W	2,971
3rd Street N from 9th to 6th Avenues N	1,084
3rd Street S from 15th Avenue N to 1st Avenue S	4,588
4th Street S from Seidl's Lake Park to 14th Avenue S	323
6th Avenue N from 3rd Street N to Marie Avenue	1,110
6th Street S from 8th Avenue S to Camber Avenue	2,291
8th Avenue S from Marie Avenue to 9th Street S	5,228
9th Avenue N/Ravine Street from Dwane Street to 3rd Street N	1,399
9th Street S from 8th to 5th Avenues	981

Proposed Bicycle Boulevard Location	Length in feet
10th Avenue N from Thompson Avenue to Dwane Street	1,574
14th Avenue S from 3rd to 4th Streets S	639
21st Avenue from Wentworth Avenue (CSAH 8) to Southview Boulevard	3,259
Camber Avenue from Grand Avenue to 6th Street S	4,230
Dale Street from 3rd Avenue S to Dale Place	1,550
Kaposia Boulevard from Concord to 3rd Streets	2,104
Park Street W from 5th to 3rd Avenues	603
South Street W from 3rd Avenue to Henry Avenue	1,950
Southview Boulevard from 21st Avenue to 20th Avenue/Southview Boulevard curve	324
Warburton Street W from 5th to 3rd Avenues S	683



Proposed design/maintenance recommendations for the bicycle network

The sections below summarize design considerations for proposed bicycle facilities. The MnDOT Bikeway Facility Manual should be consulted for detailed guidance for the design and construction of bicycle facilities identified in this plan.

Multi-use trails

As noted above, multi-use trails are physically separated facilities that are appropriate for a wide variety of bicyclists. However, the city's development patterns and constrained right of way limit the feasibility of widespread trail construction. The city's grid street system is not conducive to trail construction, as the frequency of street intersections, alleys, and driveways would result in many potential conflict points between bicyclists and motor vehicles. The frequency of intersections would also require bicyclists to slow to cross intersections and frequently go up/down curb cuts at intersections. Trails require a minimum of 12 feet of right of way behind the curb. City streets do not generally have adequate right of way to allow for trail construction. The following general design guidelines apply to multi-use trails.

- Application: Higher speed or traffic volume roadways, roadways with few intersections, within parks or on an independent right of way
- Trail width:
 - One-way trail: Minimum eight feet wide
 - Two-way trail: Minimum 10 feet wide
- Trail clear zones: two-foot wide clear zones are required on either side of a trail
- Consider trail centerline striping on heavily used trails
- Consider pedestrian-scale lighting for safety and security



Bike lanes

Bike lanes provide designated on-road space for bicyclists through striping, signage, and pavement markings. Bike lanes are intended to be continuous facilities that carry through intersections and connect bicyclists with community destinations and other bicycle facilities. Bike lanes are typically preferred by experienced bicyclists. Inexperienced bicyclists, children, and families may not feel comfortable riding in bike lanes due to the proximity to moving traffic and lack of physical separation from motor vehicles. The following general design guidance applies to bike lanes:

- Application: Streets with traffic volumes greater than 3,000 vehicles per day.
- Width: five-foot minimum width if bike lane is next to parking, six-foot minimum width if bike lane is next to the curb or is on a Municipal State Aid Roadway or County State Aid Highway.
- Bike lanes should continue through intersections. At intersections with right turn lanes, the bike lane should be located to the left of the right turn lane to reduce potential for conflicts between bicyclists and turning vehicles.



Buffered bike lanes

Buffered bike lanes are bike lanes that are enhanced by the addition of a painted buffer between the bike lane and travel lanes and/or parking lane. Buffered bike lanes are comfortable for a wider range of bicyclists as the facility provides greater separation between bicyclists and moving traffic and/or parked vehicles. Bicyclists tend to feel more comfortable in a buffered bike lane than a traditional bike lane, especially on streets with higher traffic speeds or volumes. However, buffered bike lanes require at least an additional two feet of right of way to accommodate the buffer zone. The following general design guidance applies to buffered bike lanes:

- Application: Streets with traffic volumes greater than 10,000 vehicles per day.
- Width: Bike lane width should be five to six feet and buffer should be a minimum of two feet. The buffer zone is typically placed between the bike lane and travel lane. However, in areas with high on-street parking turnover, a buffer may be desired between the bike lane and parking lane.
- Buffered bike lanes should continue through intersections. Additional enhancements to intersections may be desired, as buffered bike lanes tend to attract less-experienced bicyclists who would benefit from bicycle-specific intersection treatments (described on pages 70-73).



Protected bike lanes/cycle tracks

Protected bike lanes or cycle tracks provide an additional level of comfort to bicyclists by providing physical separation between the bicycle facility and travel lanes. There are several different designs for cycle tracks; bollards, planters, or a curb may separate the bike facility from the travel lanes. Cycle tracks may also be raised to sidewalk level and separated from travel lanes by a curb and boulevard (similar to a multi-use trail). Cycle tracks can be designed for one-way or two-way use. These facilities provide a middle ground between bike lanes and multi-use trails as they provide a similar level of comfort to bicyclists while being designed for urban streets. Cycle tracks are comfortable for a wide range of bicyclists due to the physical separation between the bicycle facility and moving traffic. The following general design guidance applies to cycle tracks. The current version of the MnDOT Bikeway Facility Design Guide does not include guidance on cycle tracks. The NACTO Urban Bikeway Design Guide may be consulted for detailed design guidance.

- Application: Streets with traffic volumes greater than 10,000 vehicles per day
- Width:
 - One-way cycle tracks should be a minimum of 6.5 feet wide.
 - Two-way cycle tracks should be a minimum of 10 feet wide
- Bollards, curb, planters, or other physical barriers should separate the cycle track from travel lanes.
- Cycle tracks should continue through intersections. Additional intersection enhancements (pages 70-73) are recommended to improve bicyclist safety and comfort, as cycle tracks will attract less-experienced bicyclists who might not be comfortable navigating busy intersections without additional design treatments.



Shoulders

Shoulders (five feet or wider) can be used by bicyclists, but are not designated for exclusive bicycle use and often do not continue through signalized intersections. Shoulders can be used for multiple purposes such as walking, bicycling, parking, and maintenance activities. Shoulders are a comfortable bicycle facility for some experienced bicyclists; however, most bicyclists prefer other bicycle facility types that are designated only for bicycle use and continue through intersections. Shoulders may be an appropriate bicycle facility in areas where there is not consistent roadway width to allow for designated bicycle lanes. The following general design guidance applies to shoulders:

- Application: Streets with traffic volumes greater than 10,000 vehicles per day
- Width: five to eight feet to allow for bicycle use
- Shoulders do not necessarily need to be continuous through intersections.

Advisory bike lanes

Advisory bike lanes are another option to provide bicycle facilities on lower-volume streets with inadequate width for designated bike lanes. Advisory bike lanes are marked with a solid white line on the right side of the lane and a dashed line on the left, to indicate that motorists can use the bike lane space if needed to pass oncoming traffic. Advisory bike lanes must be installed on roadways without a marked centerline. If advisory bike lanes are considered for streets with parking lanes, advisory bike lanes should only be installed if parking is well-used. If parking is not well used, bicyclists may choose to ride in the parking lane and the advisory bike lane markings will cause confusion for motorists. The following general design guidance applies to advisory bike lanes:

- Application: Streets with traffic volumes between 3,000-6,000 vehicles per day
- Width: Five feet wide
- Advisory bike lanes must be installed on roadways without a centerline
- Advisory bike lanes are marked with a solid white line on the right and a dashed line on the left to indicate that motorists can use the space if needed to pass oncoming traffic.



Bicycle boulevards

Bicycle boulevards are local/neighborhood streets that are promoted for bicycle use and include strategic traffic calming to reduce vehicle speeds and create a street that is comfortable for motorists and bicyclists to share. Pavement markings and signs are used to indicate that the street is a bicycle route and vehicles should expect bicyclists. Bicycle boulevards do not include separately designated space for bicyclists. However, because bicycle boulevards are located on low traffic volume streets, many bicyclists (including less-experienced bicyclists and families) are comfortable on them. The following design guidance applies to bicycle boulevards. The current version of the MnDOT Bikeway Facility Design Guide does not include guidance on bicycle boulevard design. The NACTO Urban Bikeway Design Guide may be consulted for detailed design guidance.

- Application: Streets with traffic volumes lower than 3,000 vehicles per day
- Pavement markings and signs are used to indicate that the street is a bicycle route and vehicles should expect to share the roadway with bicyclists.
- Diverters, speed humps, neckdowns, traffic circles, and other treatments may be used to reduce vehicle speeds and discourage through-traffic on a bicycle boulevard.
- Crossing treatments such as curb extensions and median refuge islands may be needed to assist bicyclists in crossing major roadways.



Intersection treatments for pedestrians and bicyclists

Intersection treatments are important for pedestrian and bicyclist comfort and safety at intersections. The sections below describe different intersection treatments for pedestrian crossings and bicycle facilities. The city has identified 12 intersections for further study to determine whether additional pedestrian and/or bicycle crossing treatments may be necessary. These intersections were selected because there have been at least two pedestrian- or bicycle-vehicle crashes over the last 10 years, they include a high-volume or high-speed roadway, or they were identified as challenging during the community engagement process. The city should consider infrastructure, education, and enforcement strategies to improve safety and comfort at these intersections. **Figure 12** shows these intersections, as listed below:

- Concord Street: mid-block pedestrian crossings between Bryant Avenue and Simon's Ravine Trailhead
- Concord Street and Grand Avenue
- Concord Street and Villaume Avenue
- Concord Street and Dale Place/Richmond Street E
- Concord Street and Poplar Street E
- 3rd Avenue between 2nd Street N and Marie Avenue (in front of City Hall)
- Marie Avenue and 6th Avenue S
- Marie Avenue and 7th Avenue S
- Southview Boulevard and 13th Avenue S
- Southview Boulevard and 9th Avenue S
- 5th Avenue and I-494 entrance/exit ramps
- 7th Avenue and I-494 entrance/exit ramps



Curb extensions

Pedestrian crossing treatments

The following pedestrian crossing treatments may be considered at the intersections listed above and at key locations on the arterial sidewalk network. Further study is needed to determine which treatments are appropriate at each location.

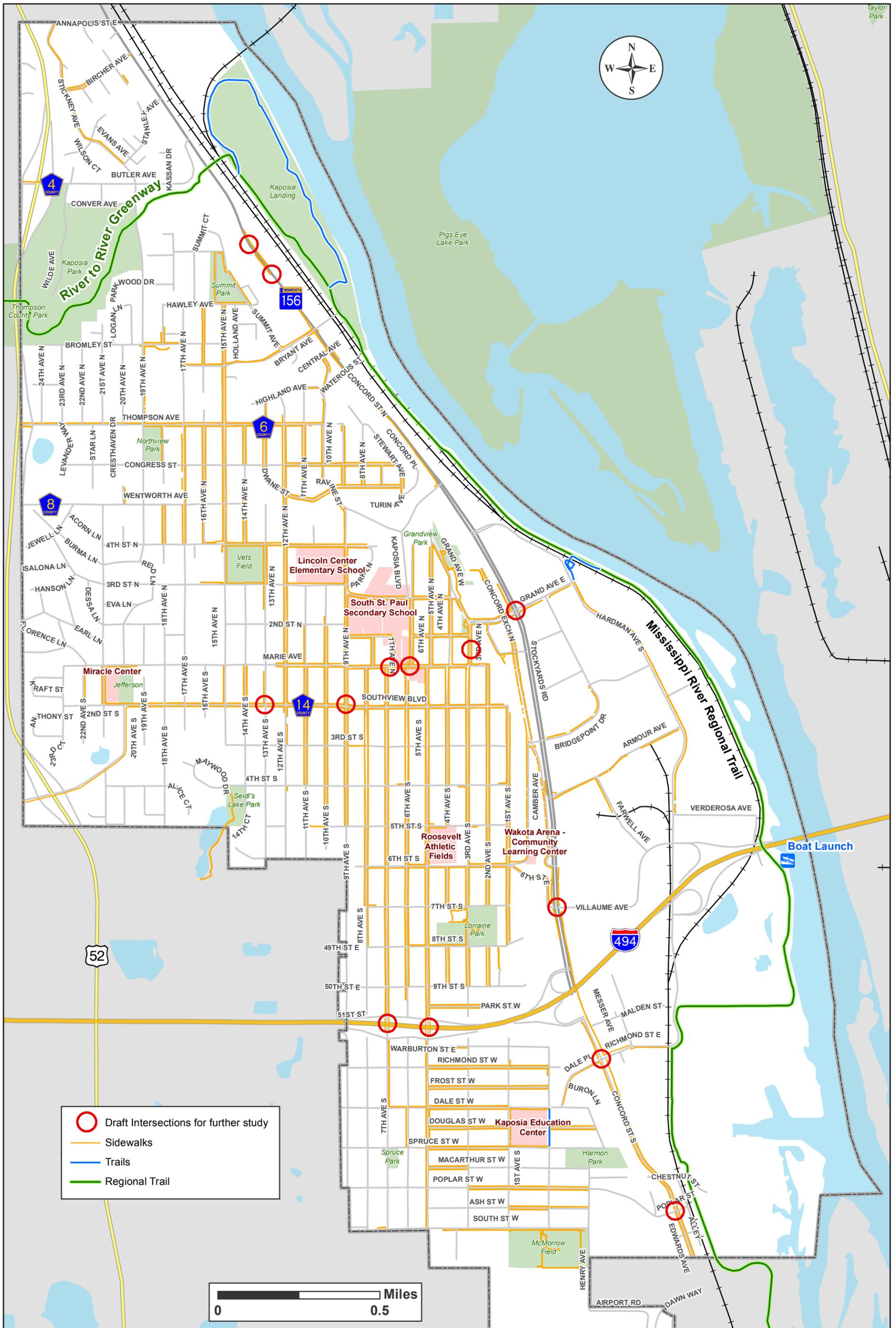
Curb Extensions

Curb extensions extend the sidewalk and shorten crossing distance. They decrease the amount of time needed to cross at intersections and can help to lower traffic speeds by narrowing the street. Curb extensions are most beneficial at intersections with wide crossings.

Curb extensions can be done as standalone projects or as part of a roadway reconstruction project. Generally, they are constructed to assist pedestrians and bicyclists in crossing higher-volume roadways such as county and state facilities.

Design Standards and Guidelines for Curb Extensions

- Should not extend into traffic lanes or interfere with bike lanes.
- Intended for streets with on-street parking or wide shoulders.
- Should be visible to oncoming traffic.



South St. Paul Bicycle & Pedestrian Plan

Figure 12: Intersections for Further Study



Median Refuge Islands

Median refuge islands provide bicyclists and pedestrians a safe zone halfway through an intersection. By providing a safe midpoint while crossing a street, pedestrians and bicyclists are only required to focus on one direction of oncoming traffic at a time. This is especially beneficial when crossing wide roads with high traffic volumes and speeds. Median refuge islands allow pedestrians and bicyclists to take advantage of gaps in one direction of traffic which decreases the amount of time waiting to cross. Placing a median refuge island within a roadway can also calm traffic.

Like curb extensions, refuge medians can be constructed as a standalone project or as part of a roadway reconstruction project. They are generally constructed on busier state or county roadways.

Design Standards and Guidelines for Median Refuge Islands

- Can be applied at signalized or unsignalized intersections.
- Minimum width is six feet
- Medians should be raised at least six inches.
- Shape of the island should conform to natural vehicle paths.
- Must be clearly visible for oncoming vehicles.
- Should only occupy the minimum area necessary while providing enough space to serve its purpose.
- Reflective markers around the median are recommended.

If median refuge islands are placed in locations where bicyclists will likely use them, the city may wish to have a minimum width of 10 feet in order to accommodate bicyclists that have trailers or connect to a second bicycle.



Median refuge island with zebra-style crosswalk

Marked Pedestrian Crosswalks

Crosswalks are a marked portion of the roadway indicating use for pedestrians to cross. Striping the roadway at the location of a crosswalk alerts drivers that this is a location where pedestrians may be present and have the right to enter the roadway. Mid-block crossings should be avoided if there is an intersection alternative that is close and likely to be used by pedestrians. If mid-block crossings are truly the appropriate location for a crossing, active notification (Rectangular Rapid Flashing Beacon (RRFB), High-Intensity Activated Crosswalk Beacon (HAWK), or in-pavement LED) should be considered as part of the design.

Design Standards and Guidelines for Crosswalks

- May be used at intersections or uncontrolled/mid-block locations.
- Marked crossings are especially beneficial for intersections on high speed roadways with heavy traffic.

- Crosswalks at midblock locations may be accompanied by active warning systems (options discussed on the following pages) to increase awareness. These should be evaluated on a case-by-case basis¹⁰.
- Should be at least six feet in width.
- Continental markings or zebra-style are recommended (perpendicular to crosswalk direction). Lines should be 24 inches wide and be spaced 36 inches apart.
- Marked crossings should extend the full width of the crossing.
- Appropriate signage warning drivers of crossings may be considered.
- Durable materials should be used when feasible. Epoxy or poly-preform can last up to 10 years versus the one to two year life of latex markings.

Leading Pedestrian Interval

The leading pedestrian interval feature (LPI) activates the walk sign a few seconds prior to the vehicle light changing to green, giving the pedestrian a chance to get out into the intersection where they are more visible to right-turning vehicles. Studies have found that the LPI method reduces conflicts for pedestrians.

Standards and Guidelines for LPI

- The FHWA recommends the LPI method be used where older pedestrians may frequently use an intersection.
- The leading pedestrian interval should be at least three seconds in duration.
- During the LPI, consideration should be given to prohibiting turns across the crosswalk.

¹⁰Two resources can be helpful in determining crossing treatments at midblock locations:

“Safety Effects of Marked versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines”, August 2005, UNC Highway Safety Research Center and Federal Highway Administration Office of Research & Development.

<http://www.fhwa.dot.gov/publications/research/safety/04100/04100.pdf>

“Pedestrian Crossings: Uncontrolled Locations”, Minnesota Department of Transportation, June 2014.

http://www.mnltap.umn.edu/publications/handbooks/documents/ped_guidebook.pdf

Rectangular Rapid Flashing Beacon

The Rectangular Rapid Flashing Beacon (RRFB) is a traffic control device that has received interim approval from FHWA and is becoming more commonly used in Minnesota. RRFBs are pedestrian or bicyclist-activated amber LED lights that supplement crossing warning signs at unsignalized intersections or mid-block crosswalks. RRFBs use an irregular flash pattern that is similar to flashers on emergency vehicles. The system is typically activated by pedestrians and bicyclists pushing a button but may also be designed to automatically detect users. By requiring pedestrians to activate the system or incorporating detection as part of the design, the system reduces the likelihood of drivers overlooking the beacon. If the beacon is always on, motorists have a tendency to begin to ignore it and not pay attention to see if there are any pedestrians or bicyclists present.

Standards and Guidelines for RRFBs

- RRFBs should be installed on the sides of roadways.
- Beacons should not be lit unless being used by pedestrians and bicyclists to cross the intersection.
- RRFBs should not be used at signalized intersections or intersections with a yield or stop sign.



If RRFBs are used in locations where bicyclists can or will likely use them, then the city should consider placing them in locations where bicyclists can activate them without having to dismount from their bicycle.

High-Intensity Activated Crosswalk

High-intensity activated crosswalk (HAWK) or hybrid beacons can be used when a street with lower traffic volumes intersects with a major street and a traffic signal is not desired. The hybrid beacon helps pedestrians and bicyclists when crossing major streets. Hybrid beacons consist of an overhead signal over the major street and have two horizontal red lights on top of one yellow light to alert drivers of people using the crosswalk. The HAWK or hybrid beacon is only lit when pedestrians or bicyclists activate the system. This reduces the likelihood of drivers overlooking the signal. Drivers tend to ignore traditional pedestrian signals because they are always on and are usually green for the motorists.

Standards and Guidelines for HAWKs

- Typically used when a major street intersects a minor road with low traffic volumes and does not warrant a traffic signal.
- The Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) permits the use of hybrid beacons depending on vehicle speed, traffic volume, intersection length, and pedestrian volume.
- The MN MUTCD provides standards for hybrid beacons including location and height, as well as length of signal phases.
- Sight obstructions such as on-street parking should not be permitted within 100 feet in front of a hybrid beacon or 20 feet beyond the marked crossing.
- The signal should not be lit unless being used by pedestrians to cross the intersection.
- Installation of a HAWK system should be based on meeting one of the signal warrants of Chapter 4C of the MN MUTCD and justification through an engineering study. The engineering study should consider major-street volumes, speeds, widths and gaps in conjunction with pedestrian volumes, walking speeds and delay if no warrants are met. Systems should be installed based upon the provisions of Chapters 4D and 4E.



LED Signage and In-Roadway Warning Systems

Flashing LED stop signs or in-pavement LED markers can be an effective means of alerting vehicles that a pedestrian is using the crosswalk. Systems may use sensors or be activated by the user pushing a button to activate the flashing of the lights. Utilizing LEDs can be an effective way to catch a driver's attention and can be used to provide advance notice of a crossing ahead. They are also beneficial when visibility conditions are poor (e.g., nighttime, poor weather). Flashing in-roadway lights are currently limited to marked uncontrolled crosswalks.

Standards and Guidelines for LED Signage and In-Roadway Systems

- The MMUTCD regulates design, color, spacing and usage of light sources used for traffic crossings.
- Flashing in-roadway lights are currently limited to marked uncontrolled crosswalks.



Orange Flag Crossing Programs

Orange flag programs have been used successfully in some cities to increase awareness of pedestrian crossings and improve motorist compliance with crosswalk laws. Removable orange flags are installed in holders at key crosswalks. Instructional signs are installed on the flag holder. Pedestrians are directed to use the flags to indicate their intention to cross, and improve visibility during the crossing. Pedestrians then return the orange flags to the holder on the other side of the crosswalk.



Bicycle facility intersection treatments

There are a variety of intersection treatments that can be used at intersections that include an on-street bicycle facility. These treatments help bicyclists and motorists understand where to position themselves, improve visibility of bicyclists, and in some cases give bicyclists priority at intersections. Bicycle facility intersection treatments become more important to consider on facilities that are intended to provide greater comfort to bicyclists, such as buffered bike lanes and cycle tracks.

Combined through Bike Lane and Right-Turn Lane (vehicle)

Striping a combination of an advisory bike through lane within a right-turn lane is used to delineate the space for bicyclists within a right turn lane. This allows bicyclists going through an intersection to better position themselves and conflicts with right-turning vehicles. This treatment is used when there is not enough space on the roadway to continue a designated bike lane through an intersection. The following general guidance applies to combined through bike lane and right-turn lanes:

- Application: Bike lanes and buffered bike lanes at intersections with right turn lanes.
- Width of bicycle area: Four feet minimum
- Width of combined lane: Nine feet minimum, 13 feet maximum
- A bicycle marking should be used to clarify bicyclist position within the lane.
- A dashed line and bicycle marking should be used to clarify bicycle position without excluding motor vehicles from the advisory bike lane.
- Signage should be used to indicate the combined lane.



Bike Boxes

Bike boxes are a safety feature being installed at intersections that help make bicyclists more visible to vehicles stopped at an intersection. Bike boxes are green boxes painted at an intersection that require drivers to stop short of the crosswalk, giving space for bicyclists to position themselves ahead of vehicles. Bike boxes are especially helpful at reducing crashes where drivers are making right turns and bicyclists are going straight. By grouping bicyclists together at the front of an intersection, they tend to move through the intersection more quickly than if they went through one by one. Because bicyclists are positioned ahead of vehicles, they also avoid breathing in vehicle fumes while waiting for the signal change. The following general guidance applies to bike boxes:

- Application: Bike lanes, buffered bike lanes, and cycle tracks at signalized intersections with high left- and right-turn crash rates.
- Most applicable on roads with high volumes of bicyclists.
- Bike boxes should be 10-16 feet deep.
- At intersections with bike boxes, vehicles must be prohibited from making right turns on red.



Forward Stop Bar

A forward stop bar is a stop bar just for bicyclists in the bicycle lane. Forward stop bars are located closer to the intersection (and often in front of a marked crosswalk) than the stop bar for motorized traffic. By providing a space separate and ahead of motorists, bicyclists are afforded better visibility of cross traffic and traffic can better see bicyclists. It also provides bicyclists with a few extra feet head start over motorized traffic when the traffic signal turns green. Forward stop bars can be used in place of bike boxes; however, they have less capacity than a bike box. The following general guidance applies to forward stop bars:

- Application: Bike lanes, buffered bike lanes, and cycle tracks at signalized intersections with high left- and right-turn crash rates.
- Most applicable on roads with lower volumes of bicyclists than those selected for bike boxes.
- Should be a minimum of 10 feet deep.

Intersection Crossing Markings

By marking the presence of a bike lane through an intersection, intersection crossing markings keep bicyclists in a distinct path and are a visual cue to drivers to watch for bicyclists. A marked bike lane through an intersection indicates that bicyclists going through an intersection have priority over turning vehicles. It should also increase predictability for drivers for where bicyclists will be. The following general guidance applies to intersection crossing markings:

- Application: Bike lanes, buffered bike lanes, and cycle tracks at signalized intersections
- Most beneficial at complex intersections where paths for bicyclists are not well defined.
- Markings should remain consistent among all intersections.
- Green colored pavement may be used to highlight conflict zones where motor vehicle traffic crosses a bike lane and/or through an intersection.
- A dotted line is typically used to mark a bike lane through an intersection and should be at least four inches in width.



Bicycle Signals

Signals specific to bicyclists can increase safety by reducing times where conflicting movements may be present between bicyclists and motorists. Signals can also be used to give priority to bicyclists. For example, a bicycle signal may turn green before a traffic signal to allow bicyclists to go through an intersection before permitting right or left turning vehicles. Bicycle signals are used most frequently in conjunction with cycle tracks or at complex intersections involving multi-use trails. The following general guidance applies to bicycle signals:

- Application: Cycle tracks or multi-use trails at complex signalized intersections.
- The clearance interval should be sufficiently long to allow bicyclists to complete their movement before conflicting movements are permitted by vehicles.
- Signal heads should be located so as to be visible by all approaching bicyclists.
- Include bike signal detection systems such as marked loop detectors, video detection, or push button detections. If using a push button system, ensure that it is placed easily for bicyclists to activate the signal from their bicycles.
- Restrictions on certain vehicle movements may also be necessary, such as a red right turn arrow while bicyclists move straight through the intersection.
- A “Bicycle Signal” sign below the signal head is recommended to alert bicyclists, pedestrians, and motorists that the signal controls bicycle movements only.
- Should only be considered in areas with heavy bicycle traffic.



Curb Extensions, Median Refuge Islands, RRFB, and HAWK signals

See Pedestrian Crossing Treatments section (pages 63-69) for specific details. Curb extensions, median refuge islands, RRFB, and HAWK signals can be used to improve bicycle boulevard and multi-use trail crossings of high-volume or high-speed roadways.

9. Policy and Practice Recommendations

This chapter includes recommended policies and practices to support the city's goals for walking and bicycling. An effective bicycle and pedestrian plan addresses each of the 5 Es: Engineering, Education, Encouragement, Enforcement, and Evaluation. The bicycle and pedestrian infrastructure recommended in **Chapter 8** established a strong base of engineering recommendations for the plan. The recommendations included in this chapter complement the proposed infrastructure improvements through recommended maintenance practices, urban design and land use recommendations, as well as education, encouragement, and enforcement programs. **Chapter 10** addresses evaluation to track the city's progress towards the plan's goals.

Maintenance

The sections below summarize recommended maintenance policies and practices for bicycle and pedestrian infrastructure.

Sidewalk and curb ramp condition

- *Inspect sidewalks on a rotating five year basis:* South St. Paul should continue to inspect and repair sidewalks on a rotating five year basis in order to ensure that sidewalks are in good condition for residents of all abilities.
- *Formalize policy on cost sharing for sidewalk repair:* The city does not have a formal policy for cost sharing on sidewalk repair. The city should establish a formal policy to ensure consistency in how sidewalk repairs are paid for.
- *Continue replacing curb ramps to comply with ADA requirements:* The city is currently working with Dakota County to replace curb ramps to bring them into compliance with ADA design requirements. The city should continue this practice to improve accessibility for all users.

Crosswalks

- *Continue to repaint crosswalks annually by June 30:* Crosswalk markings must be in good condition to be effective. Latex painted crosswalks are often faded by springtime, as salt, sand, and snowplowing operations wear away markings. The city should continue to repaint crosswalks annual by June 30 so that crosswalks are in good condition throughout the summer and fall.
- *Consider using zebra-style crosswalks in school zones and/or on the arterial sidewalk network:* Zebra-style crosswalks are more visible to motorists; however, they are more costly and labor intensive to install and maintain. The city should consider installing zebra-style crosswalks in key locations in school zones and along the arterial sidewalk network.
- *Consider using more durable marking materials (epoxy or thermoplastic/poly preform) at crosswalks in school zones and/or on the arterial sidewalk network:* As mentioned above, latex painted crosswalk markings are generally faded by springtime due to wear during winter conditions. Epoxy and thermoplastic/poly perform crosswalk marking are more costly to install, but tend to last three to 10 years depending on material and installation. Durable marking materials are visible year-round and require less frequent maintenance.

Bike lane/shoulder striping

- *Re-stripe bike lanes and shoulders on an annual basis:* Bicycle lane and shoulder striping fades over the winter, similar to crosswalk markings and travel lane striping. As the city installs bike lanes and shoulders for bicycle use, the city should maintain bicycle facility striping on an annual basis along with regular street re-striping operations.
- *Consider using more durable marking materials for bike lane striping and symbols:* The city should consider marking bike lanes with durable marking materials (epoxy or thermoplastic/poly perform) so that bike lanes are visible year-round and markings require less ongoing maintenance.

Snow removal

- *Consider occasional sidewalk snow/ice inspection on a proactive basis:* As mentioned in **Chapter 8**, the city should consider proactive sidewalk snow/ice inspection, especially on the arterial sidewalk network. By inspecting sidewalks on a proactive basis, the city can more quickly effectively enforce the sidewalk snow removal ordinance.
- *Consider having city staff/contractors remove snow on the arterial sidewalk network:* The city should consider using city staff or contractors to remove snow on the arterial sidewalk network so that pedestrians can have consistent expectations of clear sidewalks during the winter.
- *Explore creation of a business improvement district to remove snow in the Southview-Hill district:* The city should work with property owners in the Southview-Hill commercial district to consider creating a business improvement district to cover the cost of hiring a contractor to remove snow on sidewalks.
- *Clear corners of snow regularly to ensure sidewalk access for people in wheelchairs/scooters:* After a heavy snowfall, street snowplowing operations tend to create piles of snow at street corners, preventing people in wheelchairs/scooters from accessing curb ramps to sidewalks. On the arterial sidewalk network, the city should regularly clear corners of snow so that pedestrians can easily access sidewalks at curb ramps.
- *Continue to plow trails within 48-72 hours of a snow event:* The city and Dakota County should continue their current practice of plowing trails within 48-72 hours of a snow event.
- *Remove snow from bike lanes/shoulders with regular street plowing operations:* Bicycling during the winter is becoming more common in the Twin Cities region. As the city installs bike lanes and shoulders for bicycle use, the city should plow bike lanes and shoulders along with regular street plowing operations.
- *Educate residents about snow removal requirements:* City communications should emphasize property owner responsibility to clear sidewalks within 12 hours of a snow event. Communications materials should highlight the importance of clear sidewalks for pedestrian mobility.

Street Design

- *Consider pedestrian and bicycle improvements as part of street improvement projects:* Street maintenance and reconstruction projects are great opportunities to implement the recommendations of this plan. City staff should consult this plan during the early stages of street improvement projects so that pedestrian and bicycle infrastructure can be included during at the beginning of a project.



Land use

- *Consider requiring parking behind or aside new buildings within the Southview-Hill district:* Land use and urban design can positively influence walkability. Streets with buildings facing the sidewalk (rather than parking) are more accessible, pleasant, and attractive for walking. To promote a walkable commercial district, the city should consider requiring parking to be sited behind or to the sides of new buildings in the Southview-Hill district.
- *Consider requiring pedestrian access (sidewalks and crosswalks) through new parking lots in the Southview-Hill district:* Parking lots can be uncomfortable places for pedestrians to walk when there is not a designated pedestrian route to the entrance of a building. To promote pedestrian safety and comfort, the city should consider requiring sidewalks and crosswalks to be included in any new parking lots constructed in the Southview-Hill district.
- *Encourage business owners to install bicycle parking:* The city should encourage businesses to install bike parking, especially in the Southview-Hill district. The city could consider establishing a cost-sharing program for bike racks and/or updating city zoning codes/ordinances to require bike parking to be installed as part of new commercial and multifamily residential development.

Education and Encouragement

Education and encouragement strategies are often paired because they are complementary efforts. When people have more information about how and where to walk and bike safely, they often feel encouraged to walk and bike more often. The following sections address ways to educate and encourage residents to walk and bike.

Community outreach/communications

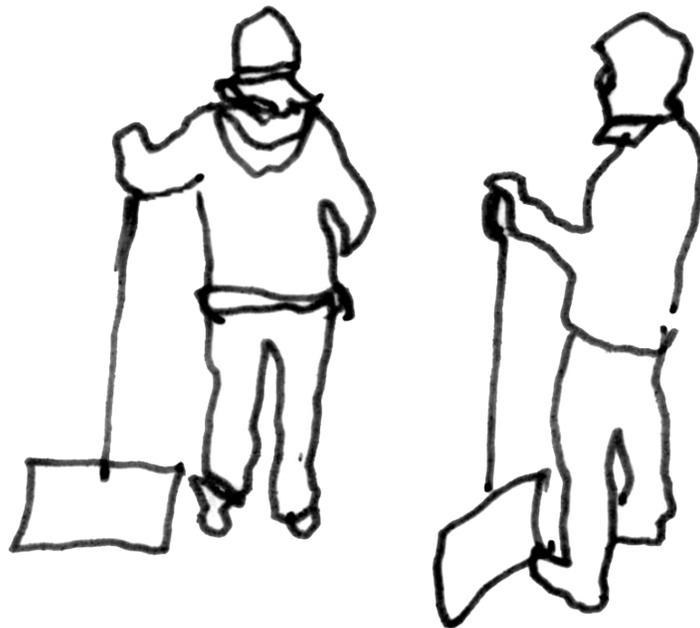
- *Promote walking and bicycling for health and transportation in city communications:* The city website and newsletter are great opportunities to promote walking and bicycling. The city should include quarterly features on walking and bicycling in its communications. Topics should include safe walking and bicycling behaviors, information about the health benefits of walking and bicycling, and information on local walking and bicycling routes.
- *Highlight great walking/biking routes in city communications:* During the community engagement process, many residents commented that they enjoy walking and bicycling in the city. Several people also mentioned that they were not aware of all of the opportunities to walk and bike in the city. The city should ask community members to suggest their favorite walking and biking routes as a way to highlight the city's pedestrian and bicycle infrastructure and make residents aware of places to walk and bike.
- *Provide walking and bicycling maps online and at city buildings:* The city should create walking and bicycling maps that highlight the arterial sidewalk network, trails, bicycle facilities, and show connections to community destinations. Maps should be posted online and available at city buildings.
- *Promote the Arterial Sidewalk Network:* The city should highlight the arterial sidewalk network on city maps. The city should make residents aware that the arterial sidewalk network is the city's priority network and that motorists should expect to see more pedestrians on these routes.
- *Continue to promote the Dakota County Simple Steps program in city communications:* Dakota County's Simple Steps program is an annual program to encourage residents to walk for exercise and transportation. South St. Paul should continue to promote this program to residents.

Safe Routes to School

- *Participate in school-led Safe Routes to School Programs:* Lincoln Center Elementary School has an active Safe Routes to School program and recently completed a Safe Routes to School Plan. City staff should continue to participate in school-led Safe Routes to School programs to support school district efforts to promote walking and bicycling to school.
- *Use city communications to support Safe Routes to School programs:* The city should use its newsletter and website to support school-led Safe Routes to School Programs. The city should publish features promoting walking and bicycling to school, as well as educating residents about safe driving in school zones.
- *Participate in bike rodeos:* Lincoln Center and Kaposia Elementary schools have held bike rodeos to build students' safe bicycling skills. City staff, including police representatives, should continue to participate in bike rodeos to support school efforts to educate students on safe bicycling behaviors.

Enforcement

- *Educate community members on safe walking, bicycling, and driving around pedestrians/bicyclists:* The South St. Paul Police Department should seek opportunities to educate community members on safe walking, bicycling, and driving in interactions with the public and at community events such as Night to Unite.
- *Conduct targeted enforcement around pedestrian and bicycle-related traffic laws:* Targeted enforcement of pedestrian and bicycle-related traffic laws have proven successful in increasing compliance. Police and Public Works staff should collaborate to conduct targeted enforcement in key locations around the city.
- *Consider establishing an orange flag program at key pedestrian crosswalks:* Orange flag programs have been used successfully in some cities to increase awareness of pedestrian crossings and improve motorist compliance with crosswalk laws. The city should consider providing orange flags for pedestrians to carry at crosswalks in key locations around the city.



10. Evaluation

Performance measures

The following performance measures should be tracked on an annual basis to ensure progress towards the goals of this plan. Monitoring these performance measures will help determine whether the strategies in this plan are effective or need to be adjusted to reach the plan's goals. Performance measures should be reported to the South St. Paul City Council for their review.

Measure	Data source
Number and severity of pedestrian-vehicle crashes	Police Department, MnDOT
Number and severity of bicycle-vehicle crashes	Police Department, MnDOT
Feet of sidewalk constructed	Public Works/Engineering
Feet of sidewalk repaired	Public Works/Engineering
Percent of Arterial Sidewalk Network in place	Public Works/Engineering
Percent of curb ramps compliant with ADA requirements	Public Works/Engineering
Percent of trail network in place	Public Works/Engineering
Percent of on-street bicycle network in place	Public Works
Percent of bicycle boulevard network in place	Public Works
Percent of residents who walk or bike to work	US Census
Annual pedestrian and bicycle counts	Public Works, Dakota County
Time from snowfall to sidewalk clearance in the Southview-Hill District	Public Works/Engineering
Number of city communications encouraging walking/bicycling and/or promoting pedestrian/bicycle safety	Communications Department
Number of targeted enforcement campaigns for pedestrian/bicycle safety	Police Department

Impacts on priority populations

This plan was prepared with funding through the Statewide Health Improvement Program (SHIP). SHIP is focused on improving health outcomes for Minnesotans through strategies such as improving opportunities for regular physical activity such as walking and bicycling. SHIP is particularly focused on improving the health of four priority populations: children, people over 55, people with low incomes, and people with mobility challenges. The sections below summarize the ways that this plan will benefit these priority populations:

Children

During the planning process, staff gathered feedback from young residents through a meeting with the Mayor's Youth Task Force and attendance at the Swimming Under the Stars event at Northview Pool. This feedback informed the recommendations of this plan, particularly related to pedestrian and bicycle network recommendations. The arterial sidewalk network connects to all schools and major parks. In addition, this plan supports the school district's Safe Routes to School efforts to increase walking and bicycling to school. As this plan is implemented, children will benefit by increased opportunities to walk and bike to parks, schools, and other community destinations.

People over age 55

Staff conducted targeted outreach to people over 55 through a meeting with residents of the Senior High Rises. These residents were particularly concerned about sidewalk condition, street crossings, and snow removal, as well as preserving and improving routes to key community destinations such as Central Square Community Center and businesses in the Southview-Hill district. The sidewalk maintenance section of this plan addresses the concerns highlighted by residents over 55. The arterial sidewalk network and mobility emphasis routes include connections to common destinations for residents over 55. Implementation of this plan will benefit residents over the age of 55 as sidewalk maintenance improves and seniors have greater opportunities to walk to key destinations in the city year round.

People with low incomes

Staff collected feedback at a Fare For All event that targets low-income populations by selling discount food to residents. Feedback collected at this event was similar to feedback gathered at other events. While residents with low incomes did not express different needs than others, this plan will benefit low-income residents by improving opportunities to walk, bicycle and take transit instead of driving. As South St. Paul becomes more walkable and bikeable, this will help reduce the burden of transportation costs on residents by making it easier to meet some of their transportation needs through walking, bicycling, and transit use.

People with mobility challenges

Targeted outreach at the Senior High Rises also reached residents with mobility challenges. Residents and staff noted that it is common for people to use wheelchairs/scooters in streets due to poor sidewalk surface condition, impediments (poles, trees, etc.) within the sidewalk and lack of snow removal. Sidewalk maintenance is a major concern for pedestrians with mobility challenges, as heaving sidewalk panels, curb ramps in poor condition, and poor snow/ice removal can have significant negative impacts on their mobility. As the maintenance recommendations of this plan are implemented, sidewalk conditions will improve for people with mobility challenges.



Pedestrian and bicycle counts

In order to gauge whether walking and bicycling are increasing, the city should partner with Dakota County to conduct annual pedestrian and bicycle counts. Dakota County counted pedestrians at Southview Boulevard and 6th Avenue in September 2012 and September 2014. The county conducted two-hour counts following the bicycle and pedestrian counting protocol established by MnDOT and the University of Minnesota. Counts were conducted by city staff and volunteers.

Beginning in September 2015, the city should work with Dakota County to initiate an expanded count program in South St. Paul. Counts should be conducted at four locations:

- Southview Boulevard and 6th Avenue
- 5th Avenue S at I-494
- MRRT at Grand Avenue
- R2RG at 19th Avenue N

Counts should be conducted once at each of these locations. Counts should occur from 5-7 PM on Tuesday, Wednesday, or Thursday evenings during the second or third week in September. City staff or trained volunteers should conduct bicycle and pedestrian counts. The city should consult with Dakota County and MnDOT resources¹¹ for count forms and training materials.



¹¹ MnDOT Bicycle and Pedestrian Traffic Counts resources:
<http://www.dot.state.mn.us/bike/research/research.html>

II. Implementation

Plan implementation will occur over many years. To reach the goals of this plan, the city will need to focus on plan recommendations and strategically construct and maintain pedestrian and bicycle infrastructure. This chapter presents recommendations that provide ongoing opportunities to provide successful implementation. This chapter also identifies high priority sidewalks, trails, and bikeways for near- to medium-term implementation.

Recommended implementation practices

The following practices should guide the city as staff implements this plan and works to achieve plan goals:

- *Coordinate internally with other departments:* Successful implementation of this plan requires coordination between planning, engineering, public works, parks, community affairs, and city administration. Planning staff should coordinate regularly with other departments to ensure continued implementation of this plan through the budgeting and planning processes. The city could consider forming an internal bicycle and pedestrian task force that would meet regularly to further plan recommendations.
- *Coordinate with Dakota County, St. Paul, West St. Paul, and Inver Grove Heights:* City staff should coordinate regularly with Dakota County and the neighboring communities of St. Paul, West St. Paul, and Inver Grove Heights to discuss sidewalk, trail, and bikeway concerns and opportunities.
- *Coordinate with South St. Paul Public Schools:* City staff should meet annually with South St. Paul Public Schools staff to discuss pedestrian and bicycle issues in school zones and collaborate on Safe Routes to Schools initiatives.
- *Review the proposed sidewalk and bikeway network annually:* Sidewalk, trail, and bikeway needs may change in the future. City staff should review the existing and proposed sidewalk and bikeway network on an annual basis to ensure that the infrastructure recommendations of this plan continue to meet resident needs. The review should include an assessment of existing bicycle facilities. If the city sees major increases in bicycling on a particular facility, the city should include improvements or enhancements to the facility. For example, a shoulder may be considered for conversion to a bike lane, or a bicycle boulevard may be considered for additional traffic calming or intersection crossing treatments.
- *Incorporate study, construction, maintenance, and design activities in the city budget:* Implementation of recommended infrastructure will require additional study and design. The city will also need to identify funding for construction and continued maintenance of the sidewalk and bikeway system. The city should identify funds for these activities in the annual city budget.
- *Annually identify grants for potential projects:* City staff should annually review the proposed sidewalk and bikeway network from this plan to identify potential grant funding sources that fit these projects. The section below identifies a number of funding sources for sidewalk and bikeway construction and intersection crossing improvements.
- *Review the city and county Capital Improvement Program (CIP) annually for opportunities to implement this plan:* While some recommended infrastructure will take many years to fund and construct, there will be opportunities for the city to extend the pedestrian and bicycle network through

other transportation projects. City staff should annually review the city and county CIPs to identify opportunities to integrate sidewalk and bikeway projects into upcoming capital improvement projects. In the city's annual CIP meeting with Dakota County staff, the city should discuss possible sidewalk and bikeway projects along county roads for inclusion in the Dakota County CIP.

- *Include sidewalk and bikeway construction as part of street reconstruction projects:* As the city designs street reconstruction projects, staff should consult this plan and incorporate sidewalks and bikeways identified in this plan.
- *Include on-street bikeways in street repaving projects:* City staff should consult this plan when planning street repaving projects. Street repaving projects can be good opportunities to implement on-street bikeways, as the city has the opportunity to install bike lane markings on fresh pavement.
- *Consider alternative funding strategies for construction and maintenance of sidewalks and bikeways:* City staff and elected officials should consider alternative funding strategies for implementation of this plan, such as utility franchise fees or maintenance assessments. The City of Edina has recently instituted a franchise fee on utilities to raise funds for sidewalk and bikeway construction. As a result, Edina no longer requires property owners to pay for construction of new sidewalks. The city could also consider following the City of St. Paul's model of a Right of Way Maintenance Assessment on all properties to pay for sidewalk maintenance. This funding source pays for all maintenance costs for sidewalks and St. Paul property owners are not assessed the cost of sidewalk repair.
- *Update zoning codes/ordinances:* The land use recommendations above require changes to city zoning codes/ordinances. City staff should review existing zoning codes and ordinances with regard to pedestrian-friendly building and parking design, sidewalk construction, and bike parking.
- *Track performance measures on an annual basis:* To ensure progress towards the goals of this plan, city staff should annually track the performance measures outlined in **Chapter 8**. City staff should present this information in a brief report to City Council to make city leaders aware of the efforts and results of the city's focus on walking and bicycling.



Funding sources for implementation

To accelerate the implementation of this plan, local funding resources can be supplemented by funding from county sources and regional, state and federal grants. The city should budget for local funds to construct short sidewalk segments and low-cost bikeways and focus on grant funding sources for larger sidewalk, trail and bikeway projects. Smaller projects, such as construction of very short sidewalk segments, may not be appropriate for grant funding programs because of the time and costs associated with compliance with grant funder requirements.

The city should consult with Dakota County as it develops sidewalk and bikeway projects. Dakota County has a trail and sidewalk set-aside fund to support projects along county roadways. The county can also provide grant writing assistance under the current round of SHIP funding.

Potential funding sources to consider include:

Dakota County Trail and Sidewalk Set-Aside Fund

Dakota County has a trail and sidewalk set-aside fund with an annual budget of \$400,000. This funding source can be applied towards the construction of new sidewalks and trails along county roadways. The county will pay up to 45 percent of sidewalk or trail construction. City staff can request project funding during the annual city-county CIP meeting. This funding source should be considered to fill gaps on Wentworth Avenue (CSAH 8) and Butler Avenue (CSAH 4).

Transportation Alternatives and Safe Routes to School Programs

The 2012 federal surface transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21) made provisions for alternative transportation programs, replacing the former Transportation Enhancements programs that existed previously. In the Twin Cities, the Metropolitan Council oversees a competitive grant process known as the Regional Solicitation that funds Transportation Alternatives Program (which includes trail facilities, bike lanes, pedestrian facilities and Safe Routes to School infrastructure) projects. These programs can fund up to 80 percent of project costs. South St. Paul should consider applying for Transportation Alternatives funding for larger sidewalk and bikeway projects that serve a transportation purpose, especially those that connect with transit routes. The city should also consider applying for Safe Routes to School funding for sidewalk and bikeway projects identified in future Safe Routes to School plans. While the Lincoln Center Elementary School Safe Routes to School Plan identifies the need to construct a sidewalk along 3rd Street from 12th to 13th Avenues N, the city should not pursue grant funding for this project due to its short length.

Surface Transportation Program (administered by Met Council)

MAP-21 will continue to support the surface transportation program, although it will be at lower funding levels than in the past. This program is primarily used for roadway reconstruction, but does allow for construction of trails and sidewalks as part of a larger overall project.

Highway Safety Improvement Program

The Highway Safety Improvement Program provides funding to smaller projects that address a targeted safety issue. The funding is administered by MnDOT. Depending upon the year, the program can be used to address safety problems in a proactive or reactive manner. Reactive projects generally include improvements at intersections. Proactive improvements can include countdown timers, median

construction, signing and striping, sidewalks, and other smaller-scale improvements designed to improve safety. Funding can provide 90 percent of project costs.

Minnesota DNR Local Trail Connections Program and Federal Recreational Trail Program

The Local Trail Connections Program is used to promote relatively short trail connections between residential areas and desirable locations. The Federal Recreational Trail Program promotes similar trail projects, with funding categories prioritized annually prior to the solicitation process. These funding sources could be used to complete the Seidl's Lake trail or supplement the federal grant funding secured for the connection between Kaposia Landing and St. Paul. Up to 75 percent of the total eligible costs up to a maximum of \$150,000 are provided by these grants.

Statewide Health Improvement Program

The Statewide Health Improvement Program (SHIP) is part of the Minnesota Department of Health initiatives to improve the overall health of Minnesotans and to decrease obesity rates. Funding for this program has recently been renewed. However, funding goes through Dakota County, so the city will need to partner with the county in order to be eligible for funding. Funding can be used for the education, encouragement and enforcement strategies in this plan, as well as planning studies.

Blue Cross and Blue Shield Center for Prevention

The Blue Cross and Blue Shield Center for Prevention regularly funds bicycle and pedestrian planning, education, encouragement, and enforcement in Minnesota. South St. Paul staff should contact the Center for Prevention to discuss funding opportunities to support the implementation of this plan.

Livable Communities Demonstration Account

The Livable Communities Demonstration Account funds innovative development/redevelopment projects that efficiently link housing, jobs, services and transit in an effort to create inspiring and lasting communities. Grants are available to fund basic public infrastructure and site assembly. Projects can vary significantly from one community to the next, but they all provide linkages between multiple uses. Infrastructure, such as sidewalks, trails, benches, bicycle racks, etc. could be incorporated and paid for as part of this grant. However, the projects are generally large-scale in effort and are focused on redevelopment efforts.

There may be opportunities for the city to work with developers and the Metropolitan Council to explore options for using funding from this program to support overall redevelopment as well as pedestrian and bicycle infrastructure.

Planning-Level Cost Estimates

To assist the city in budgeting for future sidewalk and bikeway infrastructure, this section includes planning-level cost estimates for the infrastructure proposed in this plan. It should be noted that costs for sidewalk and bikeway construction can vary greatly depending on factors such as topography and right of way acquisition. Grant funder requirements can also influence the cost of sidewalk bikeway construction. Federally funded projects tend to have higher costs due to design standards and environmental review requirements.

The estimates for each project are based upon average costs of recently constructed sidewalks and bikeways in the Twin Cities metropolitan area (see **Tables 6 and 7** for average costs). As the city begins to plan and seek funding for individual projects, staff should seek project-specific cost estimates to ensure that the city budgets adequately for construction of pedestrian and bicycle infrastructure. **Table 8** summarizes the total estimated construction cost for the proposed sidewalk and bikeway system. **Tables 9-12** include the estimated costs for each proposed pedestrian and bicycle route.

Table 6: Average Costs for Sidewalk and Bikeway Construction

Facility Type	Average Cost per Linear Foot	Average Cost Per Mile
5-foot wide sidewalk	\$75	\$396,000
10-foot wide multi-use trail	\$100	\$528,000
Bike lanes	\$3.80	\$20,000
Bicycle boulevard	\$2.84	\$15,000 for basic signs/markings, additional costs for intersection crossing treatments

Table 7: Average Costs for Crossing Treatments

Crossing Treatment Type	Average Cost
Curb extension	\$15,000 per corner (may cost more if requires significant modifications to storm sewer system)
Median refuge island	\$15,000
Marked crosswalk: Latex	\$900
Marked crosswalk: Epoxy	\$1,300
Marked crosswalk: Poly Preform/Thermoplastic	\$2,500
Pedestrian Countdown Timers	\$500
Rectangular Rapid Flashing Beacon	\$15,000
High Intensity Activated Crosswalk (HAWK)	\$75,000
LED signage and in-roadway warning systems	\$50,000

Table 8: Total Estimated Construction Cost for Proposed Sidewalk and Bikeway System

Facility Type	Total Estimated Construction Cost for all Segments
Sidewalk	\$5,222,475
Multi-use trail	\$1,997,800
Bike lanes	\$288,068
Bicycle boulevards	\$122,144
Total	\$7,630,487

Planning-level cost estimates for proposed sidewalks and bikeways

Asterisk indicates projects that may cost more due to topography or other constraints.

Table 9: Planning-level Estimates for Proposed Sidewalks

Sidewalk Gap	Description	Length in feet	Cost
1st Avenue S from Warburton Street to South Street W	Sidewalk gap	2,962	\$222,150
3rd Street N from 21st Avenue to 16th Avenue S, 14th Avenue to 13th Avenue N	Sidewalk gap	1,870	\$140,250
4th Street S from Seidl's Lake Park to 1st Avenue S	Sidewalk gap	4,607	\$345,525
6th Street S from alley to 8th Avenue, 7th to 6th Avenue	Sidewalk gap	490	\$36,750
7th Avenue S from Dale to South Streets W	Sidewalk gap	1,931	\$144,825
8th Avenue S from 7th to 8th Street	Sidewalk gap	646	\$48,450
8th Street S from 8th to 6th Avenues S, 5th to 1st Avenues S	Sidewalk gap	1,994	\$149,550
12th Avenue S from Southview Boulevard to 4th Street S	Sidewalk gap	717	\$53,775
15th Avenue N from 3rd Street N to Marie Avenue	Sidewalk gap	1,354	\$101,550

Sidewalk Gap	Description	Length	Cost
19th Avenue from Butler Avenue (CSAH 6) to Bromley Street, Thompson (CSAH 6) to Wentworth (CSAH 8) Avenues	Sidewalk gap	3,906	\$292,950
21st Avenue N from Wentworth (CSAH 8) to Marie Avenues	Sidewalk gap	2,621	\$196,575
Airport Road from Henry Avenue to city boundary with Inver Grove Heights	Sidewalk gap	1,433	\$107,475
Bridge Point Drive from Grand Avenue to Bridge Point Drive at Bridge Point way	Sidewalk gap	1,591	\$119,325
Bryant Avenue from Concord Street N to MRRT	Sidewalk or trail gap	475	\$35,625
Butler Avenue (CSAH 4) from eastern US 52 entrance ramp to 19th Avenue	Sidewalk gap	1,091	\$81,825
Concord Street from St. Paul to eastbound I-494 entrance ramps	Existing sidewalk in some areas of Concord Street. The city's long-term goal is to construct continuous sidewalk on the west side of the street and continuous multi-use trail on the east side of the street.	22,770 feet (4.31 miles)	\$1,707,750
Dale Street W from Syndicate Avenue to Dale Place	Sidewalk gap	172	\$12,900

Sidewalk Gap	Description	Length	Cost
Henry Avenue from MacArthur Street E to Airport Road	Sidewalk gap	2,335	\$175,125
MacArthur Street from 3rd Avenue S to Henry Avenue	Sidewalk gap	1,967	\$147,525
Marie Avenue from 19th to 12th Avenues N	Sidewalk gap	2,227	\$167,025
Poplar Street from 7 th Avenue S to 3 rd Avenue S, Henry Avenue to Concord Street S	Sidewalk gap	2,802	\$210,150
South Street W from 5 th Ave S to west of Elrose Court	Sidewalk gap	242	\$18,150
Spruce Street E from Syndicate to Eldridge Avenues	Sidewalk gap	803	\$60,225
Verderosa Avenue from Hardman Avenue to boat launch	Sidewalk gap	1,750	\$131,250
Warburton Street W from 3rd Avenue S to Syndicate Avenue	Sidewalk gap	1,319	\$98,925
Wentworth Avenue (CSAH 8) from city border to 15th Avenue N	Sidewalk gap (planned sidewalk construction in 2017)	3,278	\$245,850

Wilde Avenue from Butler Avenue (CSAH 4) to River to River Greenway	Sidewalk or trail gap	2,280	\$171,000
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Table 10: Planning-level Cost Estimates for Proposed Multi-Use Trails

Location	Length in feet	Estimated Cost
Concord Street (west side) from northern city limits to Villaume Avenue	16,622	\$1,662,200
MRRT from Kaposia Landing to northern city limits*	1,394	\$139,400
Seidl's Lake: connection to existing trail to create loop*	1,962	\$196,200

Table 11: Planning-level Cost Estimates for Proposed Bike Lanes/Shoulders

Proposed Bike Lane/Shoulder Location	Length in feet	Estimated cost
3rd Avenue N from Marie to Grand Avenues	657	\$2,497
5th Avenue S from 9th Street S to Warburton Street W	963	\$3,659
4th Avenue N from Grand Ave W to Marie Avenue	1,475	\$5,605
15th Avenue N from Bryant Avenue to 3rd Street S	6,200 (1.17 miles)	\$23,560
Bryant Avenue from 15th Avenue N to Kaposia Landing Park/MRRT	3,240	\$12,312
Butler Avenue (CSAH 4) from western city limits to Concord Street	1,839	\$6,988
Concord Street from northern to southern city limits (interim)	22,814 (4.32 miles)	\$86,693
Dale Place/Richmond Street E from Dale Street W to MRRT	2,197	\$8,349
Grand Avenue from 3rd to Hardman Avenues S	1,865	\$7,087
Hardman Avenue S from MRRT to Verderosa Avenue	5,275 feet (1 mile)	\$20,045
Marie Avenue from 21st to 3rd Avenues N	6,024 feet (1.14 miles)	\$21,084
Southview Boulevard from turn at 20th Avenue to western city limits	2,632	\$10,002
Stickney Avenue/19th Avenue N from northern city limits to Wentworth Avenue (CSAH 8)	8,515 feet (1.61 miles)	\$32,357
Thompson Avenue from western city limits to 10th Avenue	4,878	\$18,536
Wentworth Avenue (CSAH 8) from western city limits to 15th Avenue	3,294	\$12,517
Wilde Avenue from Butler Avenue (CSAH 4) to River to River Greenway	2,528	\$9,606
Verderosa Avenue from Hardman Avenue to boat launch	1,887	\$7,171

Table 12: Planning-level Cost Estimates for Proposed Bicycle Boulevards

Location	Length	Estimated Cost
2nd/1st Avenue S from Marie Avenue to Park Street W	6,117	\$17,372
3rd Avenue S from Warburton to South Streets W	2,971	\$8,437
3rd Street N from 9th to 6th Avenues N	1,084	\$3,080
3rd Street S from 15th Avenue N to 1st Avenue S	4,588	\$13,030
4th Street S from Seidl's Lake Park to 14th Avenue S	323	\$917
6th Avenue N from 3rd Street N to Marie Avenue	1,110	\$3,152
6th Street S from 8th Avenue S to Camber Avenue	2,291	\$6,506
8th Avenue S from Marie Avenue to 9th Street S	5,228	\$14,848
9th Avenue N from Wentworth Avenue to 3rd Street N	1,399	\$3,974
9th Street S from 8th to 5th Avenues S	981	\$2,785
10th Avenue N from Thompson to Wentworth Avenues	1,574	\$4,471
14th Avenue S from 3rd to 4th Streets S	639	\$1,816
21st Avenue N from Wentworth Avenue (CSAH 8) to Southview Boulevard	3,259	\$9,256
Camber Avenue from Grand Avenue to 6th Street S	4,230	\$12,013
Dale Street E from 3rd Avenue S to Dale Place	1,550	\$4,402
Kaposia Boulevard from Concord to 3rd Streets N	2,104	\$5,974

Location	Length	Estimated Cost
Park Street W from 5th to 3rd Avenues S	603	\$1,713
South Street W from 3rd Avenue S to Henry Avenue	1,950	\$5,539
Southview Boulevard from 21st Avenue to 20th Avenue/Southview Boulevard curve	324	\$919
Warburton Street W from 5th to 3rd Avenues S	683	\$1,940



Priorities for Infrastructure Implementation

The city has identified the following sidewalks and bikeways as the highest priority for near- to medium-term implementation of this plan. These projects have been prioritized based on community input, potential to improve safety, connections to key destinations, and the ability to coordinate with currently funded projects.

Highest priority sidewalks on the arterial sidewalk system:

- *Southview Boulevard/3rd Avenue N (CSAH 14)*: As part of a 2016/2017 street reconstruction project led by Dakota County, the city has the opportunity to bring sidewalks into compliance with ADA, widen sidewalks, and improve pedestrian crossings.
- *Wentworth Avenue (CSAH 8)*: As part of a planned pedestrian and bicycle improvement project, the city is coordinating with Dakota County to construct sidewalk or multi-use trail along this segment.
- *21st Avenue N*: The western portion of the city has few sidewalks. A sidewalk along 21st Avenue N will help connect residents with the Southview-Hill district.
- *19th Avenue N*: This street is a key connection to Northview Park, Kaposia Park, the R2RG, and the northern part of South St. Paul

Highest priority sidewalk gaps

- *1st Avenue S south of I-494*: This sidewalk would provide a north-south connection to Kaposia Education Center in an area with few north-south sidewalk connections.
- *3rd Street N between 12th and 13th Avenues N*: This segment is a short sidewalk connection that was identified in the Lincoln Center Elementary School Comprehensive Safe Routes to School Plan. It will connect existing sidewalk segments to provide access to and between Lincoln Center Elementary School.

Highest priority multi-use trails

- *MRRT extension to St. Paul*: This trail segment is a critical connection that has received regional funding. Dakota County and the cities of South St. Paul and St. Paul are collaborating to complete this project in 2017.

Highest priority bike lanes/shoulders

- *Marie Avenue, 3rd Avenue N, and Grand Avenue*: A bike lane or shoulder on this route would provide bicycle access through the Southview-Hill district on a parallel route to Southview Boulevard, as well as providing access to the MRRT.
- *19th Avenue N*: This street is an important connection to the northern part of South St. Paul as well as the R2RG, Kaposia Park, and Northview Park.
- *5th Avenue S between 9th Street S and Warburton Street*: This short segment would provide a bicycle connection across I-494 to connect the high priority bicycle boulevard on 3rd Avenue S.
- *Wentworth Avenue (CSAH 8)*: A bike lane, shoulder, or possible multi-use trail could be integrated into the planned 2017 bicycle and pedestrian improvements on Wentworth Avenue.
- *15th Avenue N*: A bike lane or shoulder on 15th Avenue would provide access to Vets Field as well as a western north-south connection between the proposed high priority bikeways on 3rd Street S, Marie Avenue, and Wentworth Avenue.

Highest priority bicycle boulevards

- *3rd Avenue S/Park Street W/Warburton Street E:* This bicycle boulevard would provide an eastern north-south connection between the southern neighborhoods of South St. Paul and the Southview-Hill district and would connect to the high-priority bike lane/shoulder route on Marie Avenue/3rd Avenue N/Grand Avenue.
- *Dale Street W:* This street would provide a bicycle connection to Kaposia Education Center and would connect to the proposed north-south bicycle boulevard on 3rd Avenue S.
- *3rd Street S:* This street would provide another parallel bicycle route to Southview Boulevard in the Southview-Hill district.

Highest Priority Bicycle Parking

- *Southview Boulevard:* City staff should work with Dakota County and business owners to install bicycle parking as part of the Southview Boulevard street reconstruction project.



Appendix: Bicycle and Pedestrian Design Resources

“Guide for the Development of Bicycle Facilities”, American Association of State Highway and Transportation Officials, 2012.

“Best Practices Synthesis and Guidance in At-Grade Trail Crossing Treatments”, Minnesota Department of Transportation, September 2013.

<http://www.dot.state.mn.us/research/TS/2013/201323.pdf>

“Minnesota Manual on Uniform Traffic Control Devices”, Minnesota Department of Transportation, 2014.

<http://www.dot.state.mn.us/trafficeng/publ/mutcd/>

“MnDOT Bikeway Facility Design Manual”, Minnesota Department of Transportation, March 2007.

<http://www.dot.state.mn.us/bike/pdfs/manual/manual.pdf>

“Pedestrian Crossings: Uncontrolled Locations”, Minnesota Department of Transportation, June 2014.

http://www.mnltap.umn.edu/publications/handbooks/documents/ped_guidebook.pdf

“Urban Bikeway Design Guide”, National Association of City Transportation Officials, April 2011.

<http://nacto.org/cities-for-cycling/design-guide/>

“Safety Effects of Marked versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines”, August 2005, UNC Highway Safety Research Center and Federal Highway Administration Office of Research & Development.

<http://www.fhwa.dot.gov/publications/research/safety/04100/04100.pdf>