Bicycle Plan

CITY OF SAINT PAUL, MINNESOTA

AN ADDENDUM TO THE SAINT PAUL COMPREHENSIVE PLAN

ADOPTED BY CITY COUNCIL APRIL 24, 2024

SAINT PAUL
MINNESOTA

ACKNOWLEDGMENTS

The City of Saint Paul would like to thank all of the residents and visitors to the city who invested time and effort to attend meetings, review documents, send comments, participate in discussions and other activities to improve this plan. A special thanks to the district councils, their staff, and their many volunteers who helped gather information and helped communication efforts with residents. Thanks to the various business groups,advocacy groups, and other organizations that have provided input to this plan.

MAYOR & CITY COUNCIL

Melvin Carter III, Mayor
Anika Bowie, Ward 1 Councilmember
Rebecca Noecker, Ward 2 Councilmember
Saura Jost, Ward 3 Councilmember
Mitra Jalali, Council President, Ward 4 Councilmember
Hwa Jeong Kim, Council Vice President, Ward 5 Councilmember
Nelsie Yang, Ward 6 Councilmember
Cheniqua Johnson, Ward 7 Councilmember

Amy Brendmoen, former Council President, Ward 5 Councilmember
Russel Balenger, former Ward 1 Councilmember
Chris Tolbert, former Ward 3 Councilmember
Jane Prince, former Ward 7 Councilmember

Executive Summary

VISION

Riding a bicycle bike in Saint Paul is comfortable, safe, fun, and accessible for all residents and visitors. No matter a person's age, income, ability, race, gender identity or sexual orientation, anyone can connect to destinations in Saint Paul by bike.

Biking in Saint Paul means grandchildren can take their grandparents biking. It means getting to work or an event in downtown by bike is an efficient and fun way to start and end your day. Visitors to Saint Paul will be excited to bike on the network of on-street and off- street bikeways, and will be able to reach local businesses directly and intuitively. Biking in Saint Paul will be a chance to wave to your neighbor on the way to your place of worship, the grocery store, and to school.

"I appreciate all the strides that have been made in the last 5-10 years! There are lots of great things happening with biking in Saint Paul and plenty of ideas and potential for more of that same growth in the next 5-10 years, too"

— Feedback from 2021 public engagement

WHAT ARE WE UPDATING?

This plan builds on the momentum of the 2015 Bicycle Plan, but acknowledges the need for updating to remain consistent with best practices, local planning efforts, and the desires of the community.

Separated bikeways should be expanded across the city.

People want safe bikeways separated from drivers. The recommendations in the 2015 Bicycle Plan do not plan for separated bikeways on streets where they should be. Separated bikeways align with adopted city policies, and constructing streets with separated bikeways allows the street to be narrower. Narrower streets calm traffic and shorten crossings for people walking.

New bikeways should be reflected in the plan, and new opportunities should be established.

The city has added 65 miles of bikeways since 2015. These include major network additions to the Saint Paul Grand Round, Capital City Bikeway (CCB), and the Highland Bridge development. The plan should look to the future and identify where our resources should be focused and prioritized.

Additional policy guidance on operation & maintenance is needed to ensure a high level of service of the bike network.

The community wants smooth and clean streets and paths to bike on. They want to bike in the winter months without having to contend with snow and ice.

WHAT ARE THE PRIORITIES?

The priorities discussed in this plan will help make biking more comfortable, more accessible, and more connected. Priorities fall into two categories: bike network capital investments (where the city builds bikeways in the near term), and policies and processes (things the city does to make biking easier and more convenient).

Policies & Processes

Consult the planned bike network when choosing projects

The city uses criteria to determine where resources are invested in streets. In the past, the streets for investment were largely chosen based on street condition (need) and the amount of traffic they carried (demand). A street that was in bad shape but carried a lot of cars was prioritized for investment. In the future, the Department of Public Works will consider the needs of people walking, biking, rolling, and taking transit, in addition to the condition of and traffic on a street. This document and the planned bike network is the document to consult when choosing projects for capital funding.

Plan for and fund maintenance and operation of the bike network

To encourage and increase biking, funding for construction of bikeways is only one piece of the puzzle. Maintenance and operation of the bike network includes snow and ice management, surface condition and repairs, vegetation management and trimming, and signing, striping, and delineator replacement along the bike network. Staffing and operating budgets for maintenance of the bike network should be established appropriately, and as the network is expanded with capital dollars, maintenance and operation funding should increase commensurately.

Conduct preliminary analyses of bikeway corridors to be more competitive for external funding sources

Implementation Opportunities on page 88 describe how Saint Paul builds out the bike network. However, there are limited funds dedicated to the bike network, so the City often relies on external funding. These grants are highly competitive; the city is best positioned for success by performing preliminary analyses of any planned bike corridor in advance of an application.

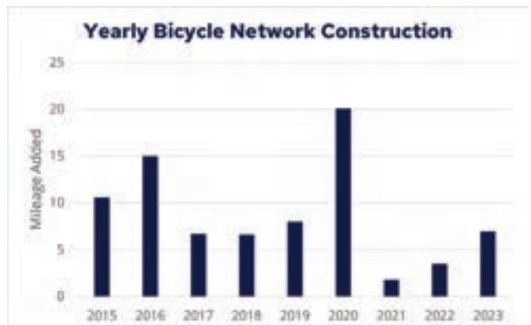
Bike Network Capital Priorities

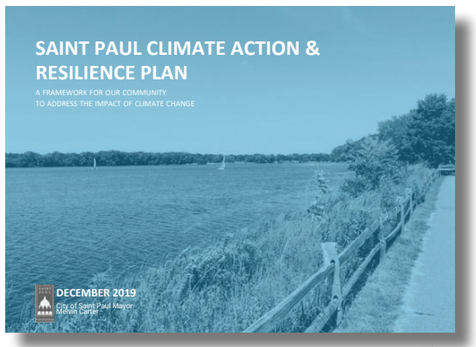
Figure 1 on page 9 shows the planned bicycle network. This network will be built over time as the City and partners make changes to streets and parks. Chapter 6 discusses different priorities and opportunities to build this network:

- Complete the Capital City Bikeway and Grand Round networks
- Build bikeways with Common Cent revenue
- Work with railroad companies to build bikeways in or alongside rail corridors
- Pursue external funding to construct bikeways separate from ongoing street reconstructions

WHAT'S BEEN DONE AND WHERE ARE WE GOING?

This document is the second version of the Saint Paul Bicycle Plan. The first version was developed over several years and resulted in the City Council adopting it in 2015. Since then, city staff and their partners have used the Bicycle Plan to guide investment with the goal of increasing the number of people biking in Saint Paul.

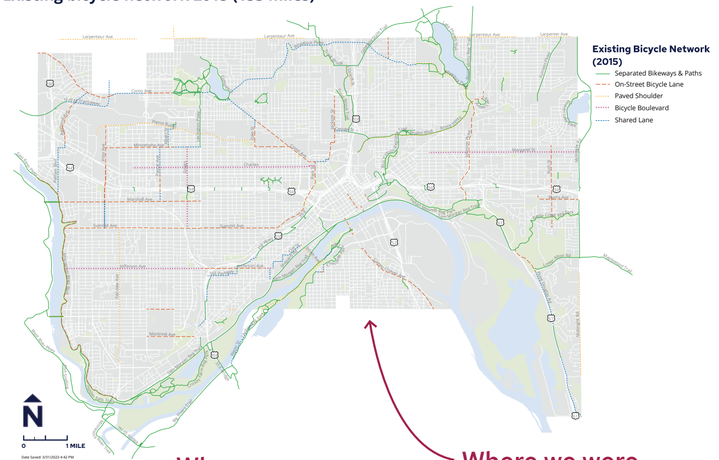




160+ miles by 2040

The Saint Paul Climate Action and Resilience Plan – adopted by the City Council in 2019 – sets a goal of 163 miles of new bikeways by 2040

Existing bicycle network 2015 (153 miles)



Where we are

Where we were

Existing bicycle network 2024 (218 miles)

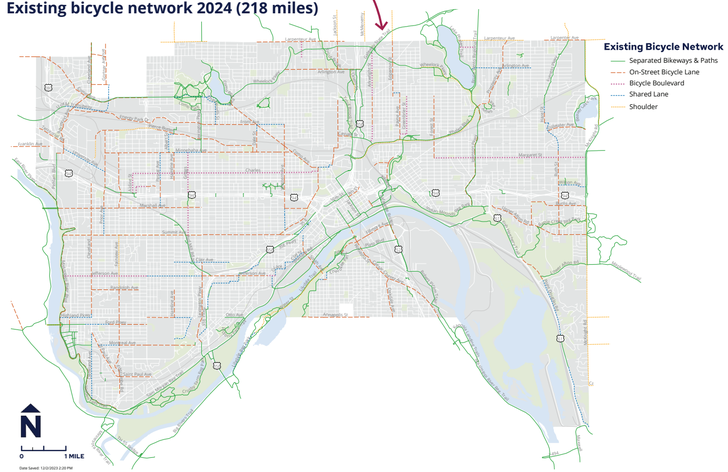
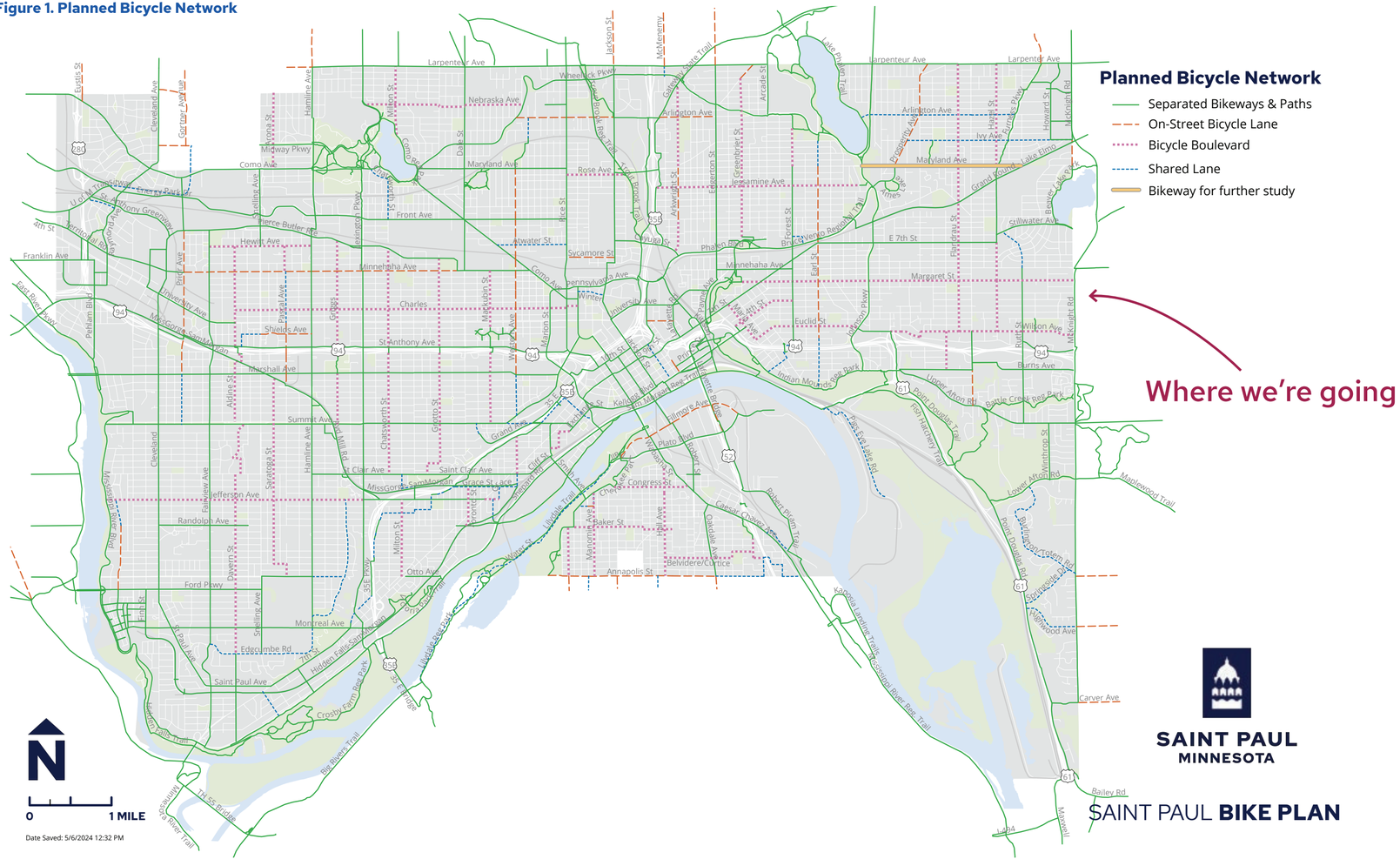


Figure 1. Planned Bicycle Network



Where we're going

SAINT PAUL
MINNESOTA

SAINT PAUL **BIKE PLAN**

Contents

6

Chapter 1

Introduction

The 2040 Saint Paul Comprehensive Plan adopted in 2020 establishes a strong vision to decrease vehicle miles traveled (VMT) by 40 percent by 2040 through improving options beyond driving alone. It creates a policy to design streets in Saint Paul that prioritizes the safety of people walking and biking. The 2019 Saint Paul Climate Action and Resilience Plan found that 30 percent of all Saint Paul emissions come from the transportation sector, and recommends the expansion of safe, comfortable, and attractive bikeways to combat climate change. This plan responds to those policy and community goals by promoting the development and maintenance of a complete and connected bikeway system that gives people of all ages and abilities an opportunity to ride a bicycle.

BIKING TERMINOLOGY

Throughout this plan, you will read the terms **bikeway** and **bike facility** and **bike infrastructure**. These terms mean similar things: they refer to any space built for people riding bikes. You'll learn more about the different types of bikeways, facilities, and infrastructure later in this document.

Purpose

The goal of this plan is to increase the number of people biking in Saint Paul, and the recommendations, policies, and programs are consistent with the 2040 Saint Paul Comprehensive Plan. This plan establishes a vision for how and why bicycles will play an important role in the future of the city.

The primary purpose of this plan is to develop a network of bicycle facilities that allows people in Saint Paul to safely and comfortably ride bicycles. To support this purpose, the plan will also provide recommendations for sustained maintenance of the network, plus policies and programs to give people biking what they need to enjoy biking in Saint Paul.

Vision

Riding a bike in Saint Paul is comfortable, safe, fun, and accessible to all residents and visitors. No matter a person's age, income, ability, race, gender identity or sexual orientation, anyone can easily connect to destinations in Saint Paul by bike.

Biking in Saint Paul means grandchildren can take their grandparents biking. It means getting to work or an event in downtown by bike is an efficient and fun way to start and end your day. Visitors to Saint Paul will be excited to bike on the network of on-street and off-street bikeways, and will be able to reach local businesses directly and intuitively. Biking in Saint Paul will be a chance to wave to your neighbor on the way to your place of worship, the grocery store, and to school.

Plan Scope & Use

This plan has been adopted by the City Council as an addendum to the Comprehensive Plan. The recommendations of this plan should be incorporated into the next update of the Comprehensive Plan, and should serve as the starting point for other planning efforts that reference biking.

This is a corridor-level planning document that identifies specific corridors for future investment in bike infrastructure. Each corridor recommended in this plan has been subjected to a basic feasibility analysis. However, the scope of this plan does not permit looking at each corridor with a level of detail sufficient to complete final design and construction. The details of each of the corridor recommendations in this plan will require further analysis and development before implementation.

This plan does not assess the current physical condition of existing bikeway facilities, though it does evaluate the appropriateness of each existing bikeway facility type within the larger bikeway network. It does not assess the need for small-scale improvements to existing bikeways (for example, a reconfiguration of an intersection to address a safety concern).

As a corridor-level planning document, this plan can not anticipate the many small-scale connections throughout the city that potentially provide great value to the community. For example, the construction of a short off-street bikeway connecting a bike lane to a regional trail would be valuable for people biking. Additionally, a short paved connection from the street to the front of a school would be a way to encourage students and families to try biking. Though these examples are consistent with the goal of making biking in Saint Paul easier and more comfortable, these connections will not be identified in this plan.

This plan should not be interpreted as a recommendation against providing bicycle facilities on any street or corridor. This plan does not identify any corridors where bicycle facilities would be inappropriate (beyond the corridors where bicycles are prohibited) or would not provide value and benefit to bicyclists.

Where streets are not recommended for bike facilities, it is because the streets are not a priority for the bike network – because of limited space, other higher priorities, or because they are not critical to the network.

Past and Future Versions of this Plan

The information and recommendations in this plan come largely from the previous version of the Saint Paul Bicycle Plan, a process that began in 2011 and ended with the City Council adopting the first ever Bicycle Plan in 2015. It brought together ideas from the public, stakeholders, and staff from a variety of agencies to set a vision and network for the future of biking in Saint Paul. In 2017, minor additions and updates were made to include recent planning efforts. The planned network contained in this plan is based on the framework and network developed in 2015, and updated in 2017.

As is the case with all planning documents, this plan will require future updates to remain useful, relevant, and meet the needs and desires of the community. Bicycle planning and facility design is always changing, and it is anticipated that innovations will continue. For that reason, it is recommended that this plan is updated at least once every ten years to take advantage of new opportunities, new innovations, and new trends. The primary reason to update this document is to ensure that it is responding to the needs and desires of the community. Future updates should respond to other planning efforts, and be sure the recommendations are relevant and consistent with best practices in bicycle planning and design.

WHY THIS UPDATE?

Following the development and adoption of the Bicycle Plan in 2015, Saint Paul has grown the bike network from 153 miles in 2014 to 218 miles in 2024.

The need to update the previous version of the plan is based on a number of factors:

- Separated bikeways should be expanded across the city:
  - Community members have asked for more separated bikeways
  - The 2019 Saint Paul Climate Action & Resilience Plan calls for the construction of more comfortable and separated bikeways
  - Separated bikeways allow the city to accomplish pedestrian goals, too. On-street bike lanes, while appropriate for some streets, result in a wider street and greater distance to cross for people walking, compared to separated bikeways
  - The recommendations in the past version of the Bicycle Plan no longer align with state and national best practices when selecting the best bikeway for each street
- To incorporate bike network additions and identify new priorities and opportunities
- Additional policy guidance on operation & maintenance is needed to ensure high level of service of the bike network

What's in the Plan?

The plan is organized into several chapters. After this introductory chapter, the following topics will be discussed:

Chapter 2: There are many benefits to biking. This chapter will discuss why the City of Saint Paul values biking and the benefits it brings to the community. Chapter 2 will also talk about who bikes, for what reason they might bike (or might not), and the approach the city will take to getting more people on bikes.

Chapter 3: This chapter will introduce the way bikeways can be categorized and described, their features, and how they interact with other modes and people who share the street.

Chapter 4: This chapter discusses the existing bike network and what the city plans for the future. It talks about the physical and geographical barriers to a connected network, and how to overcome them. It will also discuss the sub-networks within the planned network, and how the different agencies and partners should work together to create a seamless experience for people biking.

PUBLIC PARTICIPATION & ENGAGEMENT

Input from the community and stakeholders was critical in forming the recommendations in this plan. A summary of engagement can be found in the appendix section of this plan.

Chapter 5: Although a safe, comfortable, and connected network is most important to increasing the number of people biking, building one alone will not meet the goal of 40 percent reduction in VMT by 2040. Chapter 5 talks about how a network can be supported through other initiatives and programs to grow a culture of biking in Saint Paul.

Chapter 6: This chapter will discuss the opportunities and processes for getting the bike network implemented, including funding, planning, prioritization, delivery, and maintenance of projects.

Appendix: There is a lot of additional detail that informs this plan. The appendix will talk about policies, plans, and engagement.

Chapter 2

Bikeways for All

Besides being a fun way to explore Saint Paul, there are several other reasons why biking is important. Expanding the existing bicycle network can significantly impact access, convenience, health, and environmental footprint. A more connected and balanced network will encourage and promote bicycling as transportation and give people more choices.

TRANSPORTATION EQUITY

Equitable access to transportation means resources are allocated to fit the unique transportation needs of a community. In other words: giving people what they need. It means there might be more investment in areas of Saint Paul that have been historically underinvested. Every person in Saint Paul should be able to travel on a bike confidently, and it should be comfortable, safe, fun, and accessible.

Why Biking Matters

Biking is Practical & Competitive

Similar to the initial appearance of the bicycle in urban areas in the late 1800's, bicycling is once again a practical and efficient mode of transportation. Saint Paul's urban environment is conducive to biking, often providing competitive travel times on short-distance trips without the parking concerns and resource inefficiency associated with automobiles. While not immune to the realities of a northern climate, Saint Paul residents embrace the challenges of winter and can be seen biking in the colder months. As automobile-oriented uses become increasingly difficult to accommodate, the limited space requirements and high efficiency of bicycle facilities make a compelling case for further investment. Changing demographics, attitudes, and lifestyles encourage active transportation, while research continues to correlate bicycling with health, economic, safety, and environmental benefits.

Biking Addresses Saint Paul's Growth & Congestion

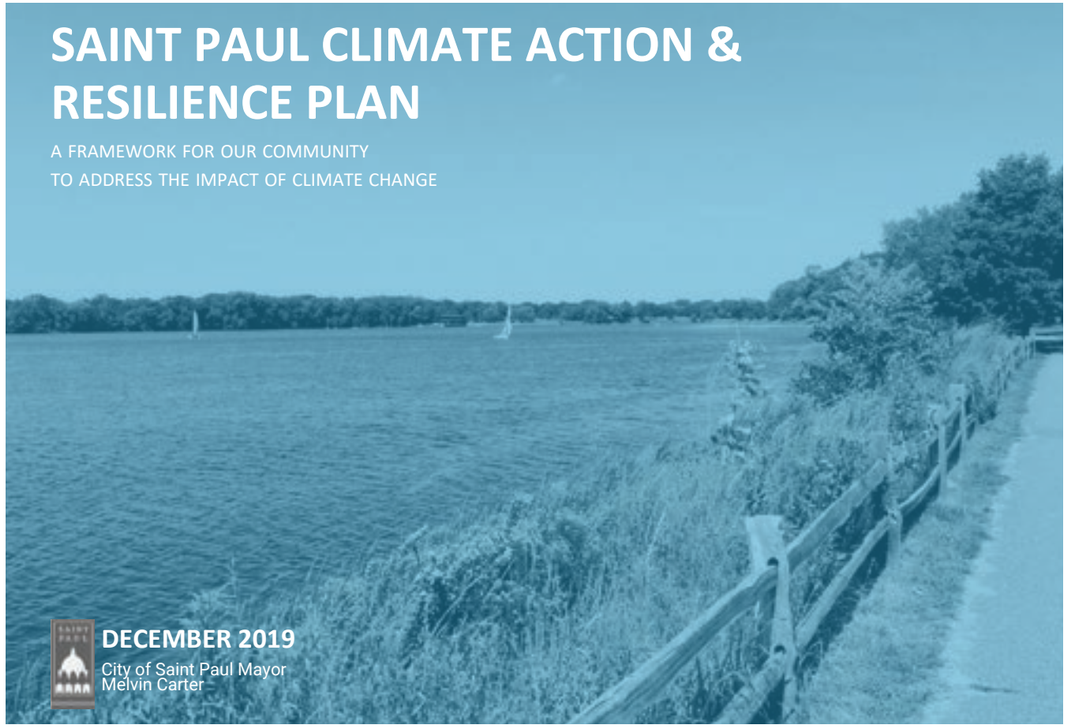
As Saint Paul continues to grow, population and redevelopment pressures will test our existing transportation infrastructure. According to the Metropolitan Council population forecasts, Saint Paul is projected to add an additional 30,000 residents by 2040. As developable land in Saint Paul becomes less and less available, this growth will result in an increasingly dense built environment and is likely to increase congestion on our streets and highways. Redevelopment pressures and increasing land values in the urban core will make land uses that support cars (parking lots and garages) increasingly difficult to accommodate, necessitating a flexible and multi-modal approach to transportation. To accommodate this growth, Saint Paul must provide safe and comfortable alternatives to driving.

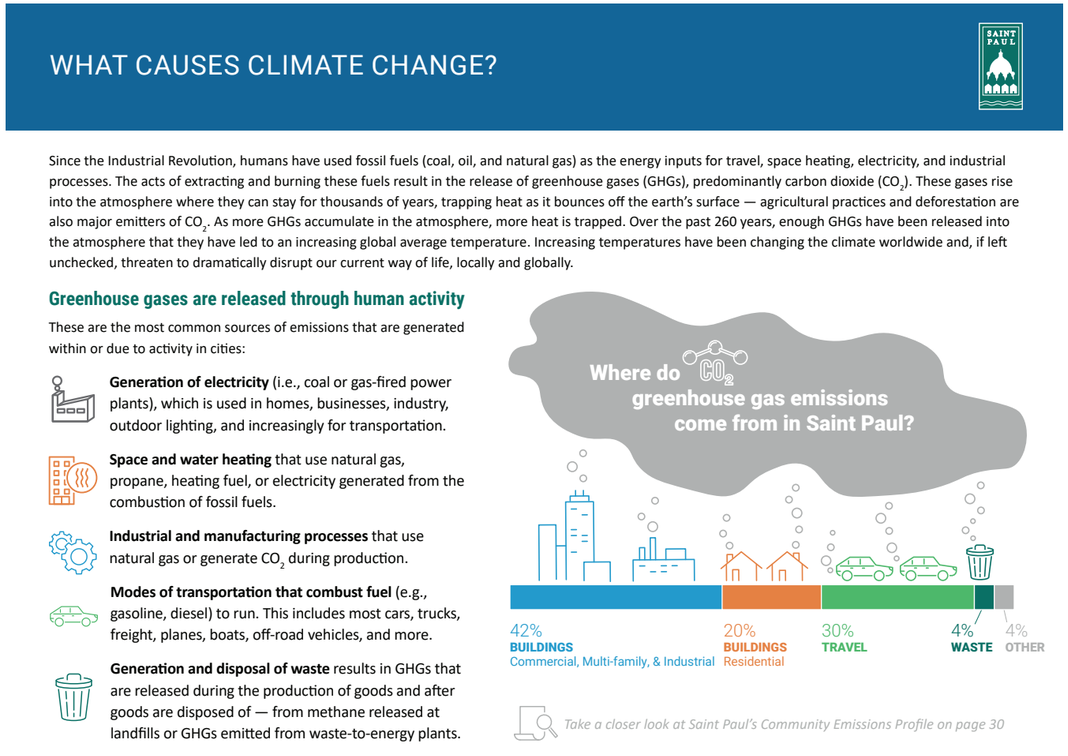
Biking Helps Fight Climate Change

Saint Paul is taking ambitious action to eliminate the contribution to global climate change by adopting a goal of carbon neutrality by 2050 and reducing emissions 50% by 2030 from business-as-usual. Transportation accounts for approximately 30% of all Saint Paul emissions. This is the largest single source, and more than the electricity generation sector. How people choose to travel in Saint Paul is a major factor in the effect on climate change. Providing safe and comfortable biking options is one way the city can move towards the goals included in the 2019 Saint Paul Climate Action and Resilience Plan.

Biking is Affordable

Thirteen percent of Saint Paul homes do not have access to a vehicle, and 40 percent have just one. Biking can provide enhanced mobility and access to those who rely on transit, shared rides, and walking for transportation. In 2022, the American Automobile Association (AAA) estimated the annual cost of new car ownership to be $10,728, up 11 percent from 2021, and 53 percent from 2013. As the costs of owning and maintaining a car continue to rise, bicycling can be a comparatively affordable transportation option. When paired with high quality transit, biking can increase trip distances and decrease travel time, better linking people with destinations.





Bicycling is Good for Your Physical and Mental Health

Bicycling is a fun and practical way of incorporating physical activity into your daily routine. Burning between 300 and 500 calories an hour, biking is an affordable and dependable mode of transportation that allows you to stay active. Furthermore, studies show that physical activity like biking reduces stress and anxiety, improves attention and memory, boosts your mood, and helps you get better sleep.

Biking Strengthens Saint Paul's Economy

Bicycling has an extensive and comprehensive impact on the local and regional economy. It supports local Saint Paul bike shops, manufacturers and distributors, rental outlets, wholesalers, and non-profit organizations. These impacts are wholly positive, and represent a bicycling-specific local economy. While more difficult to assess, indirect economic considerations, like reduced personal and societal health care have an impact on the local and regional economy, too.

Bicycling Improves Safety in Saint Paul

Designing streets with safe and comfortable bikeways improves safety for other road users, too. Striping bike lanes on a street visually narrows the street, which can reduce the speed of drivers. A street that is constructed with a separated bikeway or path means space for biking does not need to be accommodated in the street. Because of this, the street can be built narrower. A narrow street reduces driver speeds and decreases the distance people walking need to cross at intersections.

Designing streets for bicycle safety has a positive feedback effect. Several studies confirm there is a relationship between lower crash rates and the amount of bicycle traffic. It is suggested that where drivers see more people biking, they expect to see them and drive more attentively and cautiously.

Bikeways Accessible to Everyone

To become a truly world-class bicycling city, Saint Paul's bicycle network must accommodate people biking of all levels, abilities, and preferences, with a priority given to less confident and more vulnerable people. The network must also accommodate people in all seasons. Safety, both real and perceived, is essential to increasing the number of people who bike.

Who Bikes

Many characteristics have been used by various agencies or organizations to classify bicycle riders, including age, comfort level, physical ability, and trip purpose.

While each of these classifications is useful and instructive in some circumstances, each of these systems fails to fully capture the diverse population and preferences of people who choose to ride bicycles. People rarely fit into a single category, and the preferences of some one biking may change by time of day, trip purpose, traffic conditions, travel companions, weather, or other factors. For example, a person biking who is comfortable riding in a space shared with cars during daytime hours on a weekend may not be comfortable on the same street during rush hour traffic or during nighttime hours when visibility is reduced. Likewise, an individual's preferences while commuting may be different on days when they carry a young child with them for part or all of the commute.

Trip Purpose

Trips made by bicycle can be described as either **transportation** or **recreation**. Transportation trips could be described as necessary, or non-discretionary trips: to work, school, connecting to transit, or on errands. While some people might choose to ride a bike for these types of trips, other people might not have another choice but to travel by bike. Recreational trips are considered trips for physical activity or leisure.

While these two terms describe the purpose of the trip, they do not imply any other characteristics about the trip or the preferences of the person biking, including travel speed, experience, or the bikeway type best suited for the trip. Understanding trip purpose is an important part of planning for bikeways throughout Saint Paul. However, this plan intentionally avoids designating any existing or proposed routes for a particular trip purpose or a particular type of bicyclist. It is often difficult to differentiate between transportation and recreational trips because the same bikeway network can be used for both purposes.

Figure 2. Four Types of Bicyclists

Four Types of Bicyclists

In 2006, the Portland, Oregon Office of Transportation published a report that described four general categories of adults, based on their comfort or willingness to bike. Through surveys and research, they identified four categories of residents and their relationship to bicycle transportation. These categories have since been confirmed by academic researchers. See Figure 2.

"No way, no how" (33%): As the name implies, this category represents people who will not ride a bicycle for transportation, either out of disinterest or the inability to do so.

"Interested but Concerned" (60%): People in this category would like to ride more, but do not feel safe on busy streets with fast moving traffic nearby. Fewer and slower-moving cars, or a space separated from vehicles, would help them feel more comfortable. Constituting 54% of the demographic spectrum, this category represents the majority of people.

"Enthused and Confident" (7%): This group are those who have been attracted to biking as a result of previous investment in the bicycle network. They are sometimes comfortable sharing the street with drivers, but would prefer to ride on bike lanes or separated paths.

"Strong and Fearless" (<1%): This category, by far the smallest, will ride regardless of roadway conditions and regardless of investment in bicycle facilities.

The four types of people biking in the Portland study is generally accepted as accurate across the country. Public engagement as part of this Bicycle Plan has confirmed the Portland findings: many people are interested in biking more. The number one thing keeping them from doing so is a concern for safety.

Furthermore, engagement indicates the types of bike facilities people do feel comfortable riding on. To achieve a noticeable increase in people biking in Saint Paul, the city will plan for a connected network of bikeways separated from drivers.

This plan is meant to meet the needs of the largest cross section of the Saint Paul community: the "interested but concerned" who want to bike more, but do not currently feel comfortable or safe doing so.

Pursuing separated bikeways and paths will come with tradeoffs. In some situations, people biking on a separated bikeway will share the space with people walking, resulting in slower speeds for people biking. However, to prioritize safety, combining people walking and people biking on a separated and shared facility is better than combining people biking and people driving on-street. In other situations, on-street bike lanes might be replaced with off-street separated bike lanes. This means people biking of various abilities will need to share the separated bike lane resulting in slower speeds for stronger, more experienced riders. Again, this strategy for street design prioritizes safety by physically separating drivers and bikers, even if it means people biking must slow down on the separated bikeway.

Chapter 3

Bike Network Framework & Bikeway Types

Implementing a network of safe, comfortable, and connected bikeways throughout the city is the most basic way the city encourages and promotes biking. This chapter talks about the different bikeway types in Saint Paul, what they provide to someone riding, and where the different types should be used.

The Bicycle Base Map

Figure 3 presents a base map that identifies all roadways where bicycles are permitted and prohibited. The map also shows off-street separated bikeways and paths that permit biking. In general, bicycles are permitted to use all roadways and paths unless steps are taken specifically to prohibit bicycle use, such as on freeways, or on off-street paths that are marked for pedestrians only. The following roads in Saint Paul do not allow bicycle use:

- Interstate 94
- Interstate 35E
- Trunk Highway 280
- US Highway 52
- US Highway 61 (south of Lower Afton Road)
- Trunk Highway 5 (west of approximately Wheeler Street)
- Ayd Mill Road (excluding the adjacent path)

While bicycles are prohibited from operating in the roadway in these corridors, several of them provide off-street accommodations for people biking. For example, the TH-52 (Lafayette) bridge over the Mississippi River provides an off-street bikeway for use by people walking and biking. Similar accommodations are provided on the I-35E and TH-5 bridges over the Mississippi River, along Ayd Mill Road, and non-motorized bridges over I-94.

BIKEWAYS & THE BIKE NETWORK

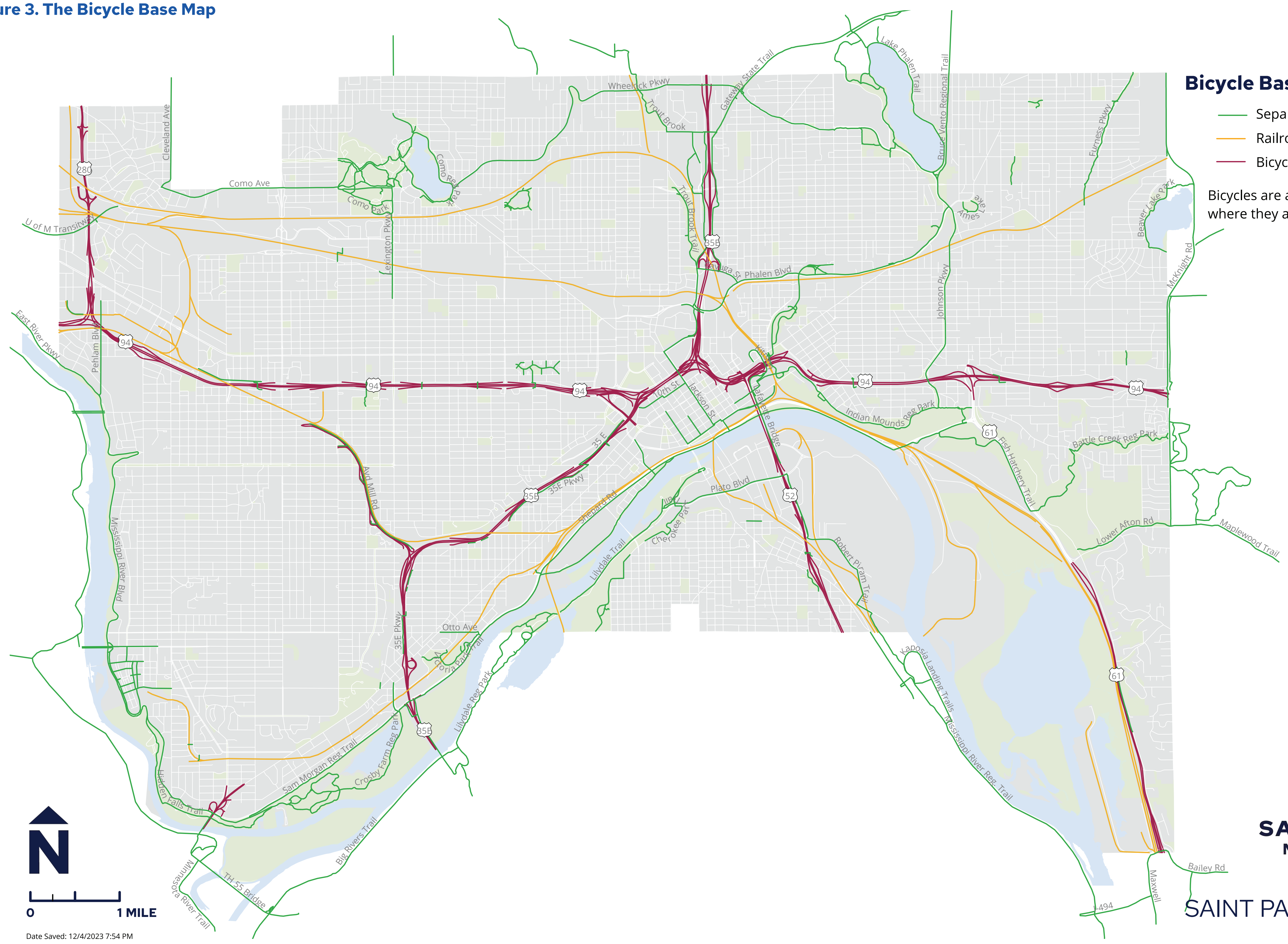
For the purposes of this plan, the terms **bikeway**, **bike facility**, and **bike infrastructure** refer to any space identified for people biking. Bikeways can be shared between other road users or can be exclusively for people biking. They can be a paved path separate from the roadway, and they can be marked with signage or road paint. As bikeways intersect each other and connect to destinations, they combine to create the bicycle network. It is the primary function of this plan to identify and designate the planned bicycle network.

Other Streets that Permit Bicycle Use

Except for the roads listed at the left and shown in Figure 3, people biking are legally allowed on any road in Saint Paul. Bicyclists are not expected to exclusively use streets identified as a bikeway. Furthermore, even where there are existing separated bikeways and paths, or dedicated bike facilities, people biking are allowed to bike in the vehicle travel lane.

The planned bike network provides improved spaces for people biking, but streets that are not on the bike network provide 'front door' access to every destination in the city. And although no signage, striping, or marking is planned for streets not on the planned bike network, most trips made by bicycle will use these streets for some portion of the trip. Drivers should anticipate people biking on every street where bicyclists are permitted, even those that carry high volumes of traffic. People biking are subject to all of the same applicable laws and expectations as drivers.

Figure 3. The Bicycle Base Map



Bicycle Base Map

- Separated Bikeways & Paths
- Railroad tracks
- Bicycles prohibited

Bicycles are allowed on every street where they are not explicitly prohibited.

SAINT PAUL
MINNESOTA

SAINT PAUL **BIKE PLAN**

Bicycle Network Functional Classification

This plan establishes a bicycle network functional classification system, which is primarily intended to describe the contribution of any one segment to a safe, comfortable, and connected bike network in Saint Paul. It helps answer the question "what are the most important bike corridors in Saint Paul?". Bicycle network classification, much like the roadway functional classification system, is primarily a planning tool designed to help guide city policies regarding development, maintenance, and design of bikeways rather than something that will be visible to people biking throughout the city. See Figure 4 for a map of planned bikeways and their functional classification.

Distinguishing features between the bicycle network functional classification system might include:

- The level of investment anticipated on each corridor
- The level of maintenance (snow and ice management, pavement surface quality, striping and signing, delineator maintenance, vegetation management)
- Connections to major attractions or trip generators
- The relative number of anticipated users
- Trip and facility length and connectivity to other bikeways or jurisdictions
- The amount of space, separation, and comfort for each mode sharing the road

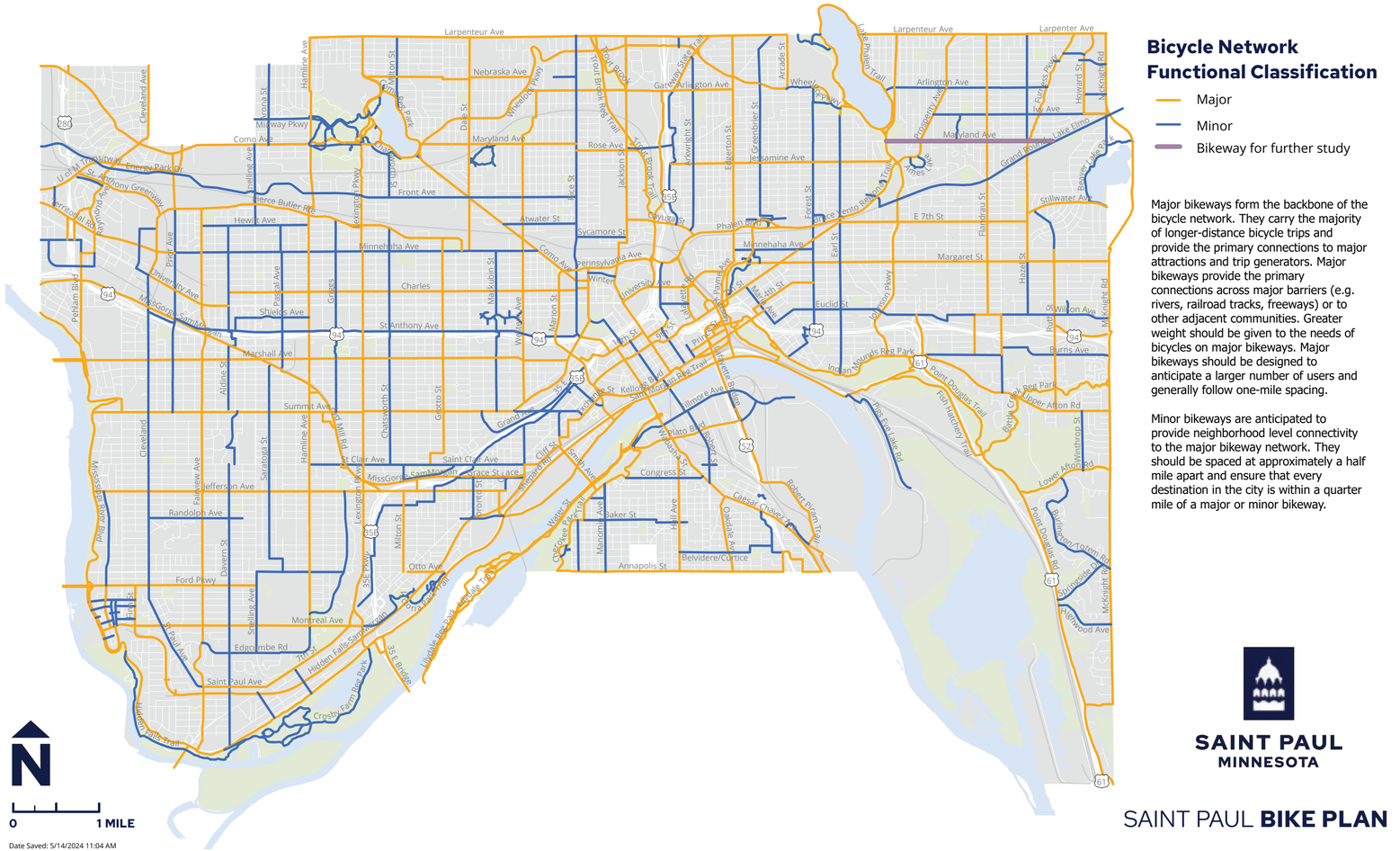
Major Bikeways

Major bikeways form the backbone of the bicycle network. They carry the majority of longer-distance bicycle trips and provide the primary connections to major attractions and trip generators. Major bikeways provide the primary connections across major barriers (e.g. rivers, railroad tracks, freeways) or to other adjacent communities. Greater weight should be given to the needs of bicycles on major bikeways. Major bikeways should be designed to anticipate a larger number of users and generally follow one-mile spacing.

Minor Bikeways

Minor bikeways are anticipated to provide neighborhood level connectivity to the major bikeway network. They should be spaced at approximately a half-mile apart and ensure that every destination in the city is within a quarter-mile of a major or minor bikeway.

Figure 4. Bikeway Network Functional Classification



Bikeway Facility Type Groups

There are many different types of bikeway facilities, and each are different in the way they interact and operate with other users of the street. Some of the most common facility types in Saint Paul include on-street **bike lanes** and off-street paths. The City of Saint Paul also uses a bike facility called a **bicycle boulevard**, which is typically runs on a residential street with low vehicle volumes. **Separated bikeways and paths**, often called simply paths or trails, provide space to bike that is physically separated from car traffic. In addition to the facilities discussed above, there is a wide array of signage and pavement markings that can be used to designate and improve streets to bring more visibility to people biking who are **sharing a lane** with drivers.

The range of bicycle facility types available to street designers is always evolving and expanding, and the task of determining how each bikeway will look and function requires a detailed examination of each corridor, as well as thoughtful engagement with the community living along each corridor. This detailed examination and engagement is beyond the scope of this plan; decisions about the design and tradeoffs will be made during later stages of any bikeway project. However, this plan uses national and state guidance to recommend the best facility group for a street or alignment. See page 44 for information about the criteria used to create the planned network.

For example, this plan may identify a corridor for the development of a separated bikeway or path. There are many variations that this facility could take – it could be a shared by people walking and biking, or it could be a path intended only for bicycles and separated from pedestrians. This plan does not indicate on which side of the street the separated bikeway should be located, how wide that facility should be, or if it's designed for one way traffic or two way. It will not identify which signage or pavement markings should be used along the bikeway. These questions will need to be answered through an engineering study at the time of design and implementation.

A second example – this plan may identify a corridor for the development of an on-street bike lane. The bike lane may include a painted buffer zone between moving traffic and the bicycle lane, or it might not. Each of these variations of bike lane may be appropriate in different locations depending on circumstances. This plan does not answer these questions.

For additional discussion of the operational characteristics or design considerations of various bicycle facility types, readers are referred to the Saint Paul Street Design Manual.

The four bikeway facility type groups discussed in this plan are as follows:

- Group 1: Shared Lane
- Group 2: Bicycle Boulevard
- Group 3: On- Street Bicycle Lane
- Group 4: Separated Bikeways and Paths

INTERIM/NEXT BEST BIKEWAY

The City will not always have the opportunity to implement a street's planned bikeway in the short term. Some facilities (especially separated bikeways and paths) often require full street reconstructions to appropriately allocate space for drivers, people walking, people biking, and other street elements like boulevards and trees. Full reconstructions are costly and happen infrequently. Because of that, the bikeway planned for a given street may not be achievable in the short term. Thus, the City should be prepared to implement interim or the "next best" bikeway until the opportunity for a full reconstruction or more substantial project arises. Because the planned facility is not within the scope of the project at hand should not preclude the City from pursuing the next best bikeway. The next best design will not be identified in this plan, and will instead depend on the context of a given street and the scope and budget of a project.

For example, imagine a street that is planned for a separated bikeway or path. However, the street isn't planned for a project that could construct a separated bikeway or path for another twenty years. Instead of waiting for the long term planned bikeway, the City could pursue a striped bike lane or flex-post- (delineator) separated bike lane in the interim. Providing a bike facility – even if it isn't the long term desired type – is better than providing nothing at all.

Group 1: Shared Lane

A shared lane uses pavement markings and/or signage to reinforce the rights and responsibilities of roadway users. These are corridors where bicyclists and motorists share the roadway and bicyclists are subject to all the same applicable laws and expectations as motorists. These corridors are identified using some form of signage or pavement markings intended to provide greater visibility of and attention to people biking. Additionally, shared lane signage and markings can help direct people biking (wayfinding) along a desired route – one that might follow turns on the street network to reach a barrier crossing or destination. Shared lanes are best suited to roadways with lower operational speeds and traffic volumes.

Specific treatments for these corridors will depend on context, however, common treatments may include:

- Shared Lane Markings (“Sharrows”)
- W11-1 or W15-1P Bicycle Warning or SHARE THE ROAD Signage
- R4-11 BIKES MAY USE FULL LANE signage
- D1 series wayfinding signage
- D11-1 series BIKE ROUTE signage
- M1 series identification signage

The type of treatments selected should follow state and federal best practice. In select cases where there is a desire to provide additional comfort and visibility for people biking, the use of innovative or experimental treatments should be considered, subject to FHWA guidance, including the use of colored pavements or other features.

Jefferson Ave

Jefferson Ave

Minnehaha Ave

Group 2: Bicycle Boulevard

Similar to shared lanes, a bicycle boulevard also relies on people biking and driving sharing space. However, a bicycle boulevard prioritizes biking over driving by discouraging both longer driving trips and higher driver speeds. Bike boulevards often run parallel to higher vehicle volume streets and provide a lower-speed, traffic-calmed environment where longer-distance trips by bicycle are more comfortable and attractive.

Specific treatments for these corridors will depend on context, but common designs may include:

- Traffic calming elements (bumpouts, speed humps, etc.)
- Limits to driver access
- Neighborhood traffic circles to calm traffic and replace stop signs at select locations
- Elements to facilitate more comfortable crossings of larger, high volume streets
- Shared lane markings (“sharrows”)
- D1 series wayfinding signage
- M1 series identification signage

Bicycle boulevards are limited in applicability to streets with very low traffic volumes and speeds, and are made comfortable for people biking through an emphasis on traffic calming and limiting vehicle traffic.

THE RISE OF E-BIKES

As the city expands it’s bike network, electric bicycles must be considered. The availability and affordability of e-bikes has increased over the last five years, and they are attracting new riders because of their ability to supplement or even replace person-powered pedaling. E-bikes can propel people to speeds of 28 mph, while an average conventional bike rider rarely goes above 15 miles per hour. As e-bikes grow in popularity, street designers should consider how bikeways and streets can safely and comfortably support both types of bikes, and how they interact with other road users.

▲ Margaret St

▲ Griggs St ▼ Griggs St

▲ Margaret St ▲ Charles Ave

Group 3: On-Street Bike Lanes

An on-street bike lane, or simply a "bike lane" is a painted lane in the street that designates a portion of a roadway for exclusive use by people biking. Bike lanes typically accommodate a higher bicycle operating speed than other facility types. Relative to shared lanes or bicycle boulevards, bike lanes are most appropriate on roadways with higher vehicle speed or volumes. Bike lanes provide horizontal separation from drivers; the space is not shared and allows for drivers to pass people biking. This facility type group includes the following types of bikeways:

- Bike lanes
- Buffered bike lanes, which include a painted or striped buffer providing further horizontal separation between people biking and driving
- Bike shoulders
- Climbing bike lane (bike lane provided only in uphill direction)

BIKEWAYS AT INTERSECTIONS

This plan does not answer questions about bikeway designs at any intersection. But because intersections are some of the most complex areas for people who share streets, the city should always consider designs that improve the safety of people walking and biking at and through intersections. These designs should minimize conflicts, reduce driver speeds, communicate right-of-way and space, provide adequate sight distance, and create clear transitions to nearby bikeways.

HORIZONTAL VS VERTICAL SEPARATION

Bikeways are often described as having **vertical** and **horizontal** separation. What do these terms mean? And what's the difference between the two? Both terms describe how people biking are separated from people driving.

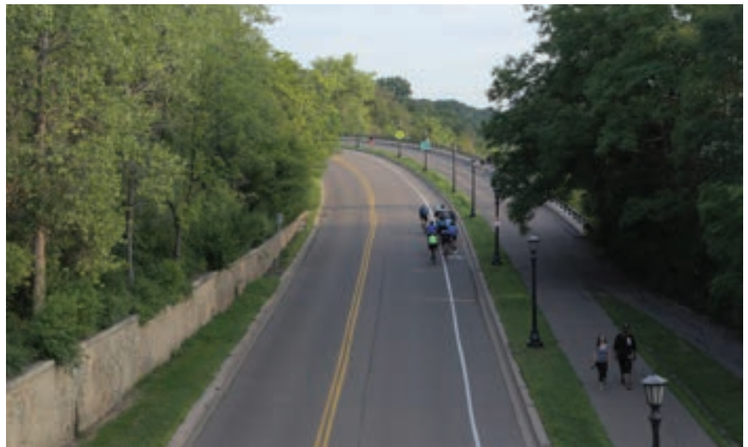
Horizontal separation means people biking have a space to the side of a driver, and they do not share that space. Bike lanes provide horizontal separation because a biker rides alongside a driver, but in a different and exclusive space. The driver has their lane that isn't shared with the person biking. Buffered bike lanes provide additional horizontal separation between people biking and people driving. Separated bikeways and paths also provide horizontal separation.

Bike facilities with vertical separation provide a physical barrier between people biking and people driving – they include an element that extends vertically from the ground *between* the two road users. This can come in several forms: a curb, a tree, or a flexible plastic post (delineator) all provide vertical separation. Each of these would be noticed by a driver or a biker if they started to deviate from their space and into their neighbor's. In addition to horizontal separation, separated bikeways and paths also provide vertical separation, which is why many people biking prefer these facilities. There is a physical barrier between their space and driver's space.

Shared lanes and bicycle boulevards have neither horizontal or vertical separation. They require people biking to share space with people driving.

▲ *Upper Afton Rd* ▼ *Marshall Ave* ▲ *Fairview Ave*

▲ *Summit Ave* ▼ *Mississippi River Blvd* ▼ *St. Paul Ave*



Group 4: Separated Bikeways and Paths

Separated bikeways and paths provide people biking with space vertically and horizontally separated from motor vehicle travel. While similar to bike lanes because they provide a dedicated space for biking (horizontal separation), separated bikeways and paths also provide a physical barrier separating drive space from bike space (vertical separation). These bikeways can be designed for two way bike and walking traffic, or one way traffic. Separated bikeways and paths tend to attract the widest variety of users – people young and old, experienced and inexperienced. When same-grade street crossings are kept to a minimum, separated bikeways and paths can greatly enhance safety and comfort for people biking. This facility type group includes the following types of bikeways:

- On-street separated bike lane: a space designated for biking only, between the curbs in the roadway bed, and separated from driving space by a vertical and physical barrier (curb or concrete median, planters, bollards or flexible delineators, or vehicles in a parking lane)
- Off-street separated bike lane: a space for biking that is vertically and horizontally separated from vehicles, outside the curbs in the roadway bed, but separated from people walking
- Shared use path: a space shared by people walking and biking, vertically and horizontally separated from vehicles, outside the curbs in the roadway bed. A shared use path can run along a road (sidepath) or in a corridor distant from a road (similar to a trail running through a park)

Sidewalks are not separated bikeways or paths. Though discouraged for adult bikers, Minnesota statutes permit riding a bicycle on sidewalks outside business districts. However, the distinction between sidewalks and separated bikeways and paths is not always clear to users, as both sidewalks and paths may have various widths and be constructed of various pavement materials. A typical concrete sidewalk along residential streets in Saint Paul is approximately five feet in width and is not a recommended place for adult bikers.

ONE WAY VS TWO WAY BIKEWAYS AND PATHS

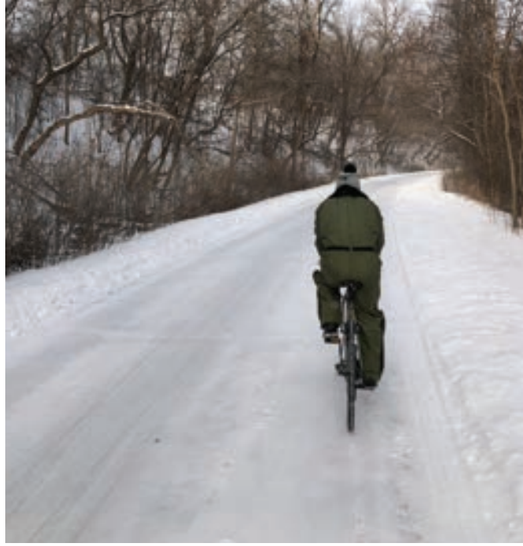
The planned network on page 53 does not distinguish between one-way separated bike lanes, two-way separated bike lanes, and shared use paths. The green lines represent only that the planned bikeway type is separated from drivers and falls into Group 4 at the left. Future phases of any project will determine the design of the bikeway and if the bike space will be combined with walking space, and if bike travel will be one-way or two-way.

Though the specific design is not yet decided, there are important factors to consider when designing a street that includes a separated bikeway or path:

- Number of intersecting streets, driveways, and accesses, and the control of the intersections (signals, stop, or yield)
- Anticipated volume of people walking and biking
- Space available for bikeway, and the tradeoffs between biking, walking, driving, parking, snow storage, and tree space
- Transitions and connections to existing and planned bikeways

This plan considers all pedestrian bridges (e.g. walking bridges over freeways) to be separated bikeways and paths, even in cases where the existing bridge includes stairs on the approaches or is relatively narrow and may require walking a bicycle. In current form, such conditions may be a significant deterrent to bicycle travel. However, as pedestrian bridges age and are replaced, the replacement bridges should be designed to accommodate bicycles.

▲ *10th St downtown*



Bruce Vento Trail through Swede Hollow ▲

▲ *Pelham Blvd* ▼ *Lexington Pkwy*

Highland Bridge ▼ ▲ *Johnson Pkwy*

Planned Bikeway Identification Process

The planned improvements to the bikeway network are based on a set of mapping criteria established in the planning process for this plan. The bikeways identified in this plan are based on a combination of the recommendations adopted from previous planning efforts as well as field work to identify new corridors.

Spacing

Bikeways should be no more than a half-mile apart, and separated bikeways and paths and bicycle boulevards should be no more than one mile apart. This plan interprets and fulfills this directive by establishing spacing guidelines for major and minor bikeways at one-mile and half-mile spacing respectively.

The goal of the planned network is to give all residents of Saint Paul a nearby and comfortable bike network. Generally, bikeways are spaced consistently and distributed across neighborhoods evenly.

Previous Planning Efforts & Engagement

Much planning and engagement has been completed in the past by both the city and other partner agencies. This plan strives to meet the needs and desires of the community, and be consistent with other planning efforts to the extent possible. Refer to the Appendix section to learn about planning efforts and engagement that supports this plan.

Traffic Volumes and Speeds

State and national guidance for bikeway design says there is a relationship between a street's traffic volumes, speed limit, and the appropriate bikeway. As traffic volumes and speed limits increase, the level and type of separation should increase. Figure 5 at the right was developed by the Federal Highway Administration (FHWA), used by the Minnesota Department of Transportation (MnDOT), and is considered a best practice when selecting the best bikeway for a street. It was used in this plan to recommend the appropriate bikeway in the planned network.

BICYCLE TRAFFIC, DEMAND, AND CRASH RATES

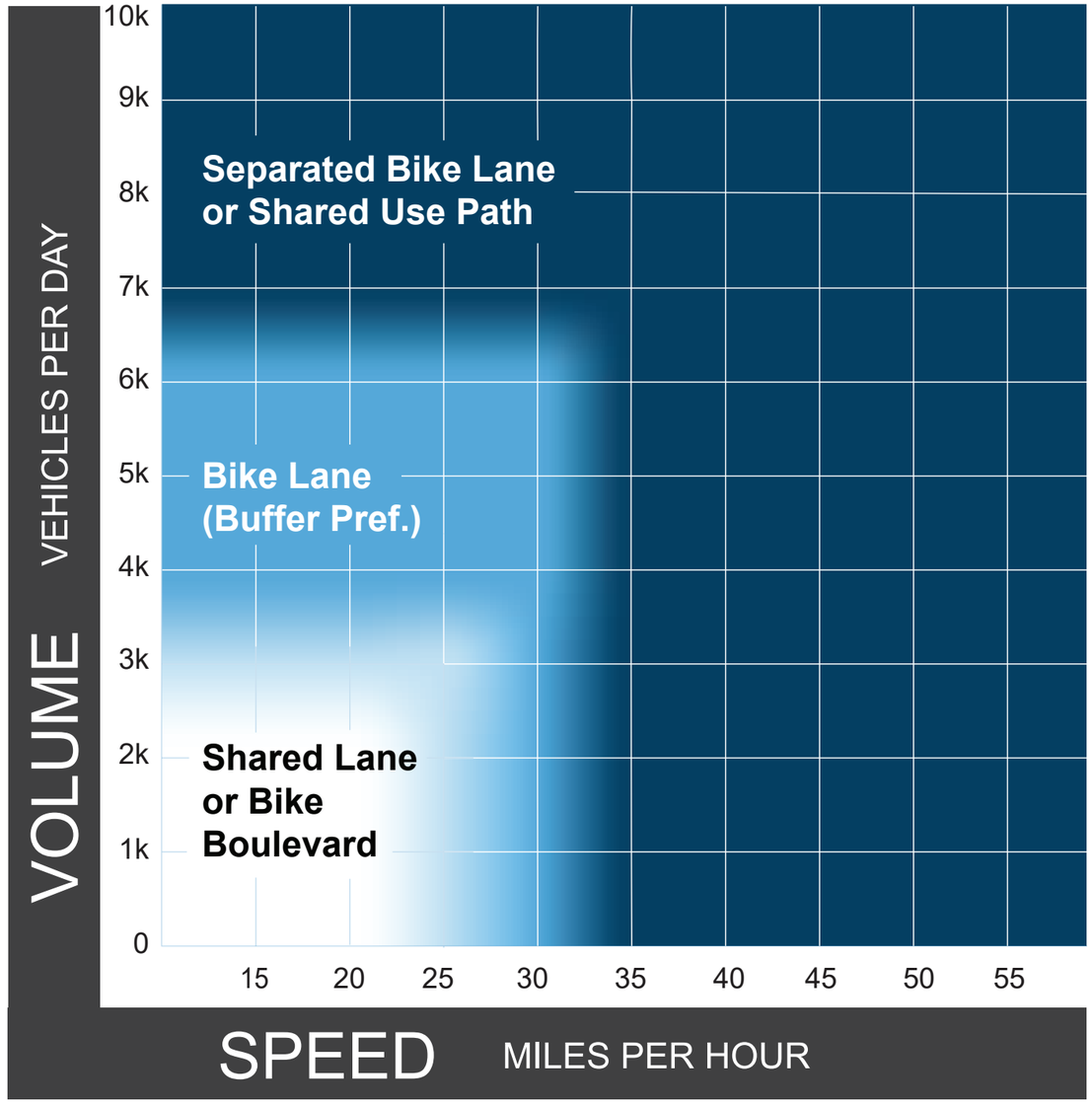
The city has limited information and data on bicycle traffic and reported crashes. While crashes and demand are taken seriously by the city, the lack of each is not a reason to not build a bikeway.

Just because people are not observed biking on a street does not mean people do not **want** to bike on a street. It could be that people do not feel safe biking, so they avoid the street altogether. Observed bicycle traffic is not a major input when deciding where the city builds bikeways.

Similarly, bicycle-involved crashes, though informative, are not a major input when identifying the planned bike network. The lack of crashes on any street does not imply that it is completely safe. "Near miss" crashes go unreported, or perhaps people avoid biking on a street because it is too uncomfortable. Documented and reported crashes do not tell the whole story.

The city will proactively build bikeways using professional judgment to increase comfort and safety. While crash statistics and bicycle counts will be referenced during planning and project selection, they will not be the only inputs.

Figure 5. Bikeway Selection Guide



Source: FHWA Bikeway Selection Guide

Notes

1 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed

2 See Interim/Next Best Bikeway discussion for a discussion of alternatives if the preferred bicycle facility type is not feasible

Making Direct Connections on Low Stress Bikeways

To increase the number of people biking in Saint Paul, people must be able to access their destinations on low stress bikeways. Generally, this plan considers low stress bikeways as **separated bikeways and paths** and **bicycle boulevards**. The planned network is only as comfortable as it's weakest link. That is, if two low stress bikeways are interrupted by a bikeway not considered low stress (bike lane, shared lane, or gap in the bike network), it is likely a person will avoid biking altogether.

The bicycle network should provide direct and continuous routes between destinations. To the extent possible, the network should avoid barriers like dead end streets, highways, railroad tracks, and water bodies. Bicycle routes that meander or make unnecessary turns are less likely to be used. Especially in the case of shared lanes and bicycle boulevards, facilities that turn or meander for reasons that aren't obvious may be confusing for users. In some cases, people biking may be willing to travel additional distance to utilize a more attractive route, but this is dependent on a number of variables that are not easily identified. This plan places a high priority on providing direct, straight, and continuous bikeways.

The bicycle network should connect key destinations to each other, and connect residential neighborhoods with employment and commercial centers, schools, and other key destinations. The bicycle network should build off and connect with existing bikeways and transitways.

In addition to the entire planned network, Chapter 4 includes a map showing the network of low stress bikeways. This will provide an opportunity for less confident bikers to comfortably get where they need to go.

Modal Balance

This plan strives to achieve a balance between the needs of all the various modal users (including bicycles, pedestrians, transit, freight, and general traffic), and seeks to identify opportunities for bicycling to complement other modes as much as possible. The 2040 Saint Paul Comprehensive Plan identifies a modal hierarchy in Saint Paul. Roadways should be designed to first prioritize the safety of pedestrians, then bicyclists, then transit users, and lastly, other vehicles. In most cases, providing a comfortable bikeway requires tradeoffs from other transportation systems, such as narrowing travel lanes, removing travel lanes, or removing on-street parking. Future phases of design and engagement will more thoroughly weigh these tradeoffs while following the modal hierarchy policy from the Comprehensive Plan.

Safety

This plan identifies a bicycle network that minimizes conflict with other travel modes. It prioritizes separated bikeways and paths over the on-street bikeways often preferred by strong and confident bikers. Such a network will encourage new people to bike in Saint Paul. Special consideration is given to areas where there are known safety concerns, though reported crashes will not be wholly relied upon. This plan recommends a bicycle network that utilizes proven safety design features to separate people biking from people driving and to slow drivers on roads where space is shared.

Chapter 4

Existing & Planned Bike Network

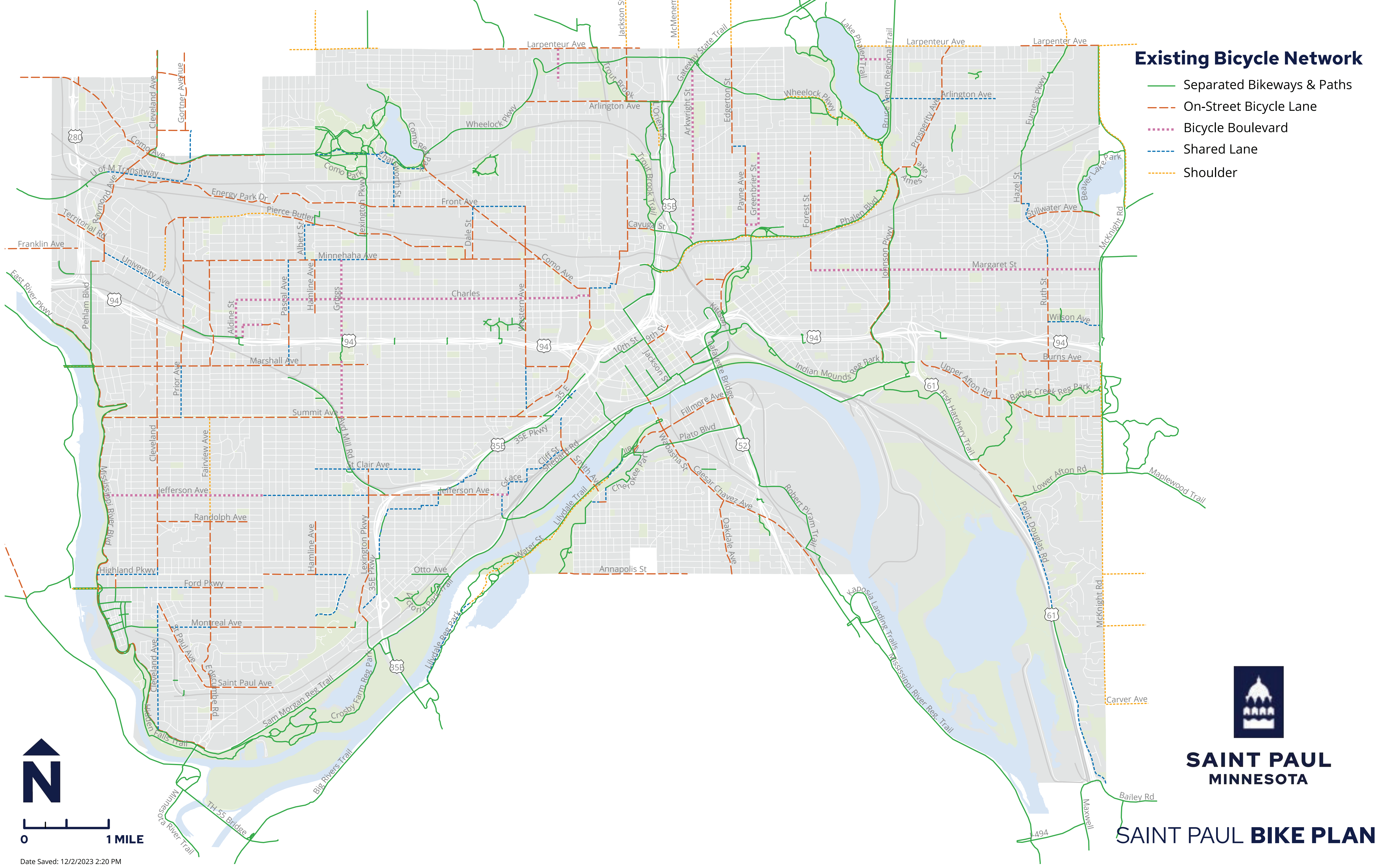
The primary objective of this plan is to establish and expand the planned bicycle network with safe and comfortable bikeways that will encourage new bike riders. This chapter discusses the existing bike network, the planned network, and the elements and sub-networks that should seamlessly work together to encourage people to ride.

Existing Bicycle Network

There are a total of 218 miles of bikeways in Saint Paul as of April 2024, including facilities owned and managed by agency partners. About 42% of the existing facilities throughout the city are separated from drivers, with bike lanes, shoulders, bike boulevards, and shared lanes composing an additional 58% of the bike network. The existing bicycle network is described by bikeway type at the right and identified in Figure 6 on page 51. This map is updated yearly and posted on the City of Saint Paul biking webpage.

Bikeway Type	Existing Mileage	Percent of Network
Separated Bikeways and Paths	93	42%
Off-Street Separated Bike Lane and Shared Use Path	93	42%
On-Street Bikeways	118	58%
Bike Lanes	77	35%
Bikeable Shoulders	15	7%
Bike Boulevards	12	6%
Shared Lanes	21	10%
Total	218	100%

Figure 6. Existing Bike Network (2024)



BIKEWAY FOR FURTHER STUDY

Maryland Avenue between Johnson Parkway and Ruth Street is shown in the planned bicycle network as "bikeway for further study". At the time of plan adoption in April 2024, a portion of this section of Maryland between Johnson and White Bear Avenue is being considered for future high frequency transit service by the Purple Line Bus Rapid Transit (BRT) and H Line Arterial BRT. Currently, it is not known what the future of design will look like for this portion of Maryland, if and how space for people biking can be accommodated, and the timing of implementation of any future designs. Future coordination is needed between the City, Metro Transit, and Ramsey County, the agency who owns and designs Maryland between Johnson and White Bear Avenue.

Planned Bicycle Network

This plan identifies a full bicycle network of 337 miles, an increase of 119 miles of new and improved bikeways. This is a 54% increase in bikeways, compared to the existing 218 miles of bikeways in 2024. The planned bicycle network was designed to provide safe and comfortable connections to major destinations throughout the city based on the mapping criteria presented on page 44.

This plan envisions a bikeway network that provides a safe and comfortable experience for people biking of all ages and abilities. It should encourage new riders, not simply accommodate people who are experienced and confident bikers. This approach will likely require some experienced riders to ride slower, especially on separated bikeways and paths, which are intended to attract new riders. Where road characteristics do not require as much separation between people biking and people driving, the planned facility type is a bike lane or a shared space. The planned network is described by bikeway type at right and in Figure 7 on page 53.

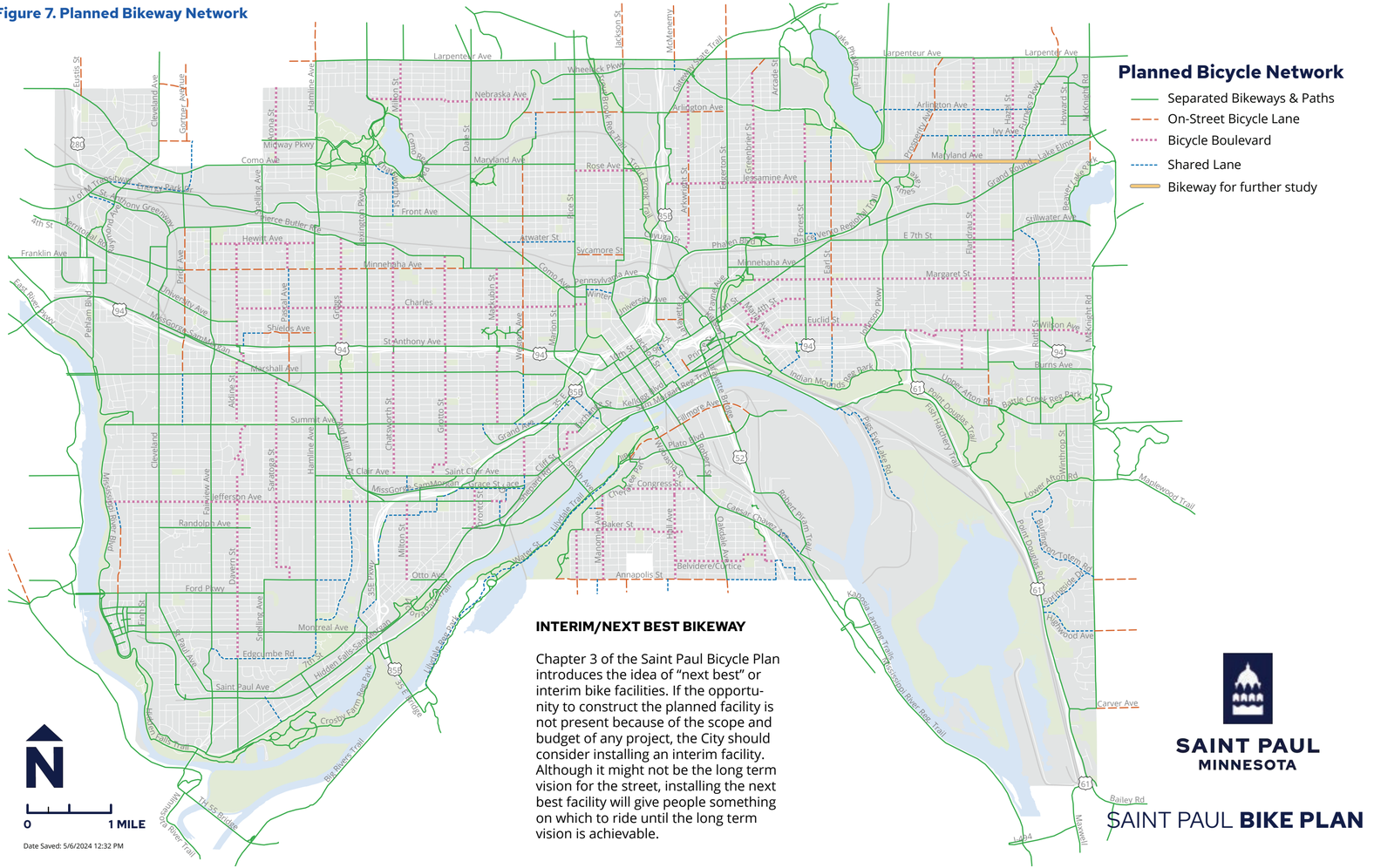
In many cases, the planned bicycle network includes improvements to existing bikeways to increase comfort and encourage new people biking. For example, several streets historically planned for and constructed with bike lanes are shown in this plan with separated bikeways and paths.

Bikeway Type	Planned Mileage	Percent of Network
Separated Bikeways and Paths	245	73%
On-Street Bikeways	90	27%
Bike Lanes	18	5%
Bikeable Shoulders	0	0%
Bike Boulevards	48	14%
Shared Lanes	25	7%
Bikeway for further study	1.5	<1%
Total	337	100%

INTERIM/NEXT BEST BIKEWAY

Chapter 3 of this plan introduces the idea of "next best" or interim bikeways. If the opportunity to construct the planned bikeway type is not present because of the scope and budget of any project, the City should consider installing an interim facility. Although it might not be the long term vision for the street, installing the next best facility will give people something on which to ride until the long term vision is achievable.

Figure 7. Planned Bikeway Network



	Major Bikeway		Minor Bikeway		
Bikeway Type	Planned Mileage	Percent of Major Network	Planned Mileage	Percent of Minor Network	Total Planned Mileage
Separated Bikeways and Paths	182	85	63	53	245
Bike Lanes	7	2	11	9	18
Bike Boulevards	22	10	26	22	48
Shared Lanes	6	3	19	16	25
Bikeway for further study	NA	NA	NA	NA	1.5
Total	217	100	120	100	337

As discussed in Chapter 3, the major bikeway network provides long distance connectivity for people biking and includes the routes most important to people biking. Minor bikeways provide neighborhood connectivity and redundancy in the network. The major network is almost completely made up of separated bikeways and paths, and bike boulevards.

Barrier Crossings

One of the most significant challenges to bicycling in Saint Paul is finding safe locations to cross linear barriers, such as freight railroads and freeways. In addition, while the Mississippi River is a major attractor for people biking looking to enjoy the scenic riverbanks, opportunities to cross the Mississippi River are limited.

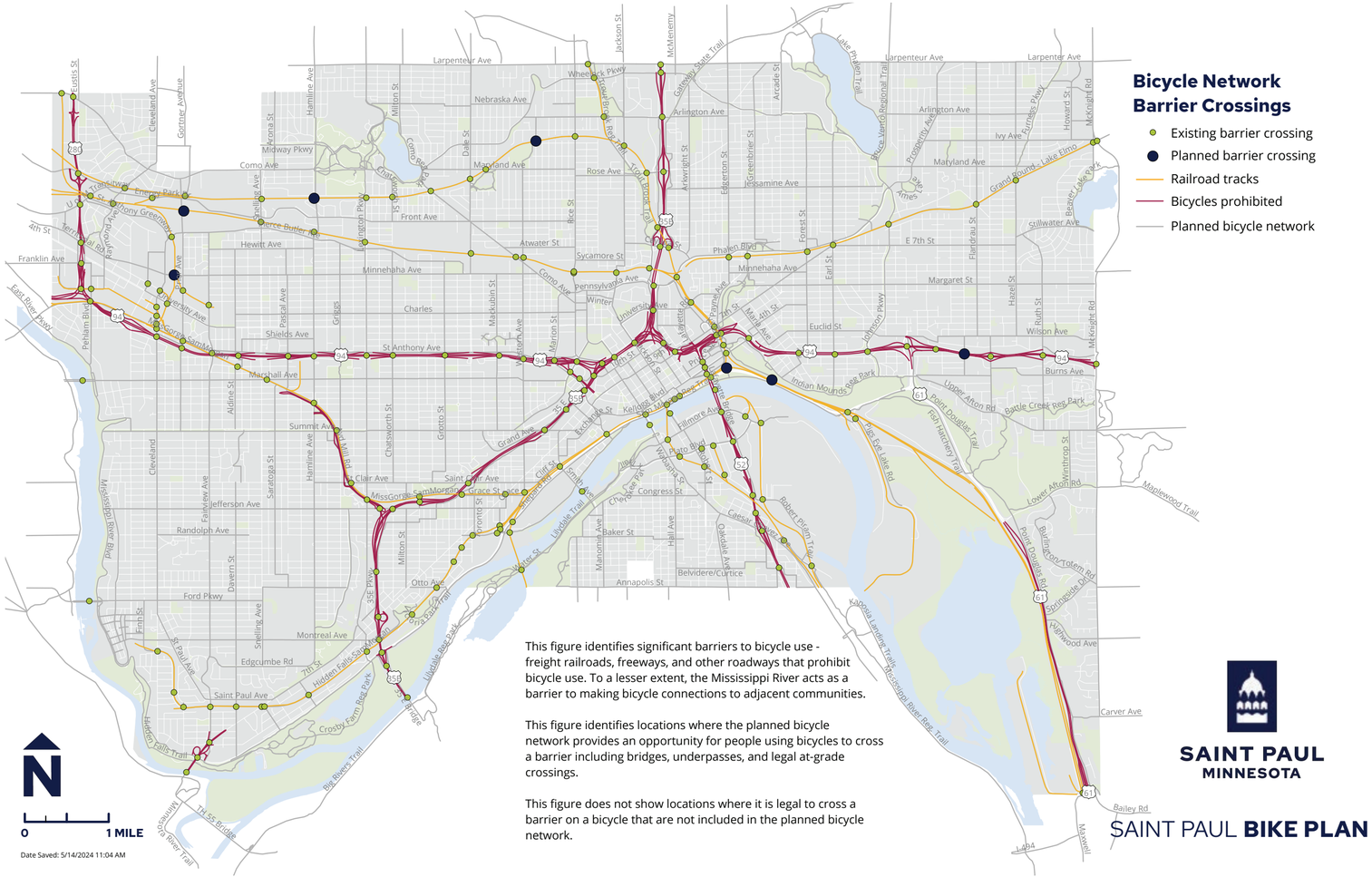
Most barrier crossing locations take the form of bridges over the river, a freeway, or a railroad. However, some crossings are underpasses below the barrier, and there are a number of existing locations where people biking (as well as walking and driving) are permitted to cross freight railroads at-grade. For this reason, this plan intentionally uses the generic term "crossing" to describe locations where the bicycle network crosses barriers. Figure 8 presents all of the crossings located on the planned bicycle network.

While there are examples of locations where bikeways cross freight railroads at-grade both in Saint Paul as well as other places in the metropolitan area, recent history suggests that new at-grade crossings of mainline freight railroads are unlikely, and that any new crossings will require a bridge or underpass.

This plan envisions seven new bridges or underpasses, which are identified on Figure 8, the majority of which were first identified in previous planning efforts. Planned crossings were identified based on the spacing between adjacent crossings, the feasibility of identifying alternate routes, and an informal engineering feasibility analysis. Of the seven planned crossings, five of them will be bicycle and pedestrian crossings only. The remaining two crossings will be constructed in connection with planned new roadway bridges. Before pursuing the substantial amount of funding needed for construction of new bicycle and pedestrian bridges, the city should perform a detailed feasibility analyses of each crossing. This analysis should include concept designs, cost estimates, and must study the impacts of such a bridge.

A number of the existing bridge structures are not conducive to bicycle use due to width or because they have stairs on the approaches, such as the TH- 5 bridge over the Mississippi River or the Hazelwood Street bridge over I-94. In addition, many older bridges over freeways were constructed primarily for pedestrians and were not designed with bicyclists in mind. However, as aging bridges are replaced, current regulations require all new bridge structures to be designed with ramps rather than stairs, and these bridges will be designed to accommodate both bicycles and pedestrians.

Figure 8. Barrier Crossings

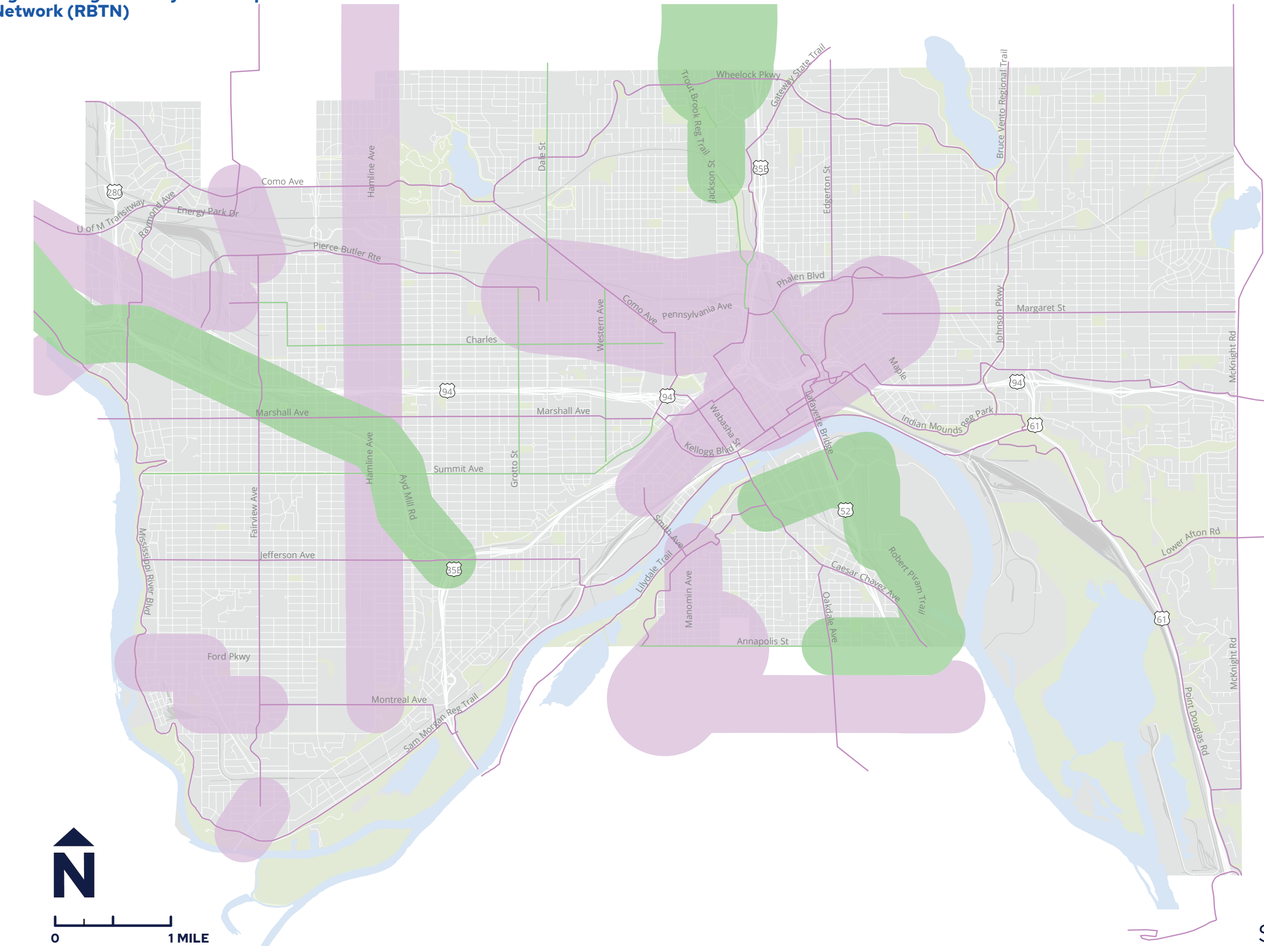


Regional Bicycle Transportation Network

The purpose of the Regional Bicycle Transportation Network (RBTN) is to establish an integrated and seamless network of on- and off-street bikeways in and between cities in the Twin Cities Metropolitan Area. First established by the Metropolitan Council in 2014, the RBTN provides a bike network backbone that connects local and regional destinations.

Since 2014, the RBTN has been updated, and the current network in Saint Paul is shown in Figure 9. It identifies the Tier 1 and Tier 2 RBTN alignments and corridors in Saint Paul. In some cases, the RBTN does not identify a particular alignment, but rather identifies a search corridor. Additional work remains to identify specific alignments for all segments of the RBTN, and the Metropolitan Council will continue to work with Saint Paul staff to make updates.

Figure 9. Regional Bicycle Transportation Network (RBTN)



Date Saved: 11/2/2022 3:10 PM

Regional Bicycle Transportation Network (RBTN)

- Tier 1 Alignment
- Tier 2 Alignment
- Tier 1 Corridor
- Tier 2 Corridor

This figure shows the Regional Bicycle Transportation Network in Saint Paul, created by the Metropolitan Council, with the City of Saint Paul's support.

Alignments are defined where there are existing or planned bikeways, or in the absence of these, a consensus of which road or roadways would most efficiently meet the regional corridor's intent. Corridors reflect where alignments have not yet been identified; the presence of corridors allow for local planning processes to determine the most appropriate alignment that follows the orientation of the corridor and combines on street bikeways with separated bikeways and paths.

Corridors and alignments are classified as Tier 1 or Tier 2 priorities, with Tier 1 representing the region's highest priorities for bikeway planning and investment.

SAINT PAUL
MINNESOTA

SAINT PAUL **BIKE PLAN**

Regional Trails

Regional trail corridors provide recreational opportunities along linear pathways throughout the metropolitan area. Regional trails must be designated by the Metropolitan Council and are intended to pass through or provide connections between components in the Regional Parks System. Regional Trails are defined in the Metropolitan Council's Regional Parks Policy Plan. Regional Parks and Trails identified in the Regional Parks Policy Plan are eligible for external funding.

In urban areas such as Saint Paul, the regional trail network also plays an important function for bicycling and often forms a backbone of the low stress bike network connecting destinations. Regional trail facilities are often developed along natural or linear features, which can limit the number of intersections, greatly enhancing safety and comfort for trail users.

Six bikeways in Saint Paul have been designated as Regional Trails:

- Samuel Morgan Regional Trail
- Bruce Vento Regional Trail
- Trout Brook Regional Trail
- Robert Piram Regional Trail
- Grand Round North Regional Trail
- Point Douglas Regional Trail

The Metropolitan Council generally does not designate trails that are wholly contained within Regional Parks as regional trails. However, many of these Council-designated Regional Parks contain separated and high quality bikeways (often referred to as "trails" within a park) that are critical in connecting the parks to the surrounding bike network. Often, these bikeways are eligible for the same funding sources as regional trails. Regional Parks in Saint Paul that include high quality bikeways are:

- Mississippi Gorge Regional Park
- Lilydale-Harriet Island-Cherokee Heights Regional Park
- Indian Mounds Regional Park
- Battle Creek Regional Park
- Hidden Falls-Crosby Farm Regional Park
- Phalen Regional Park
- Como Regional Park

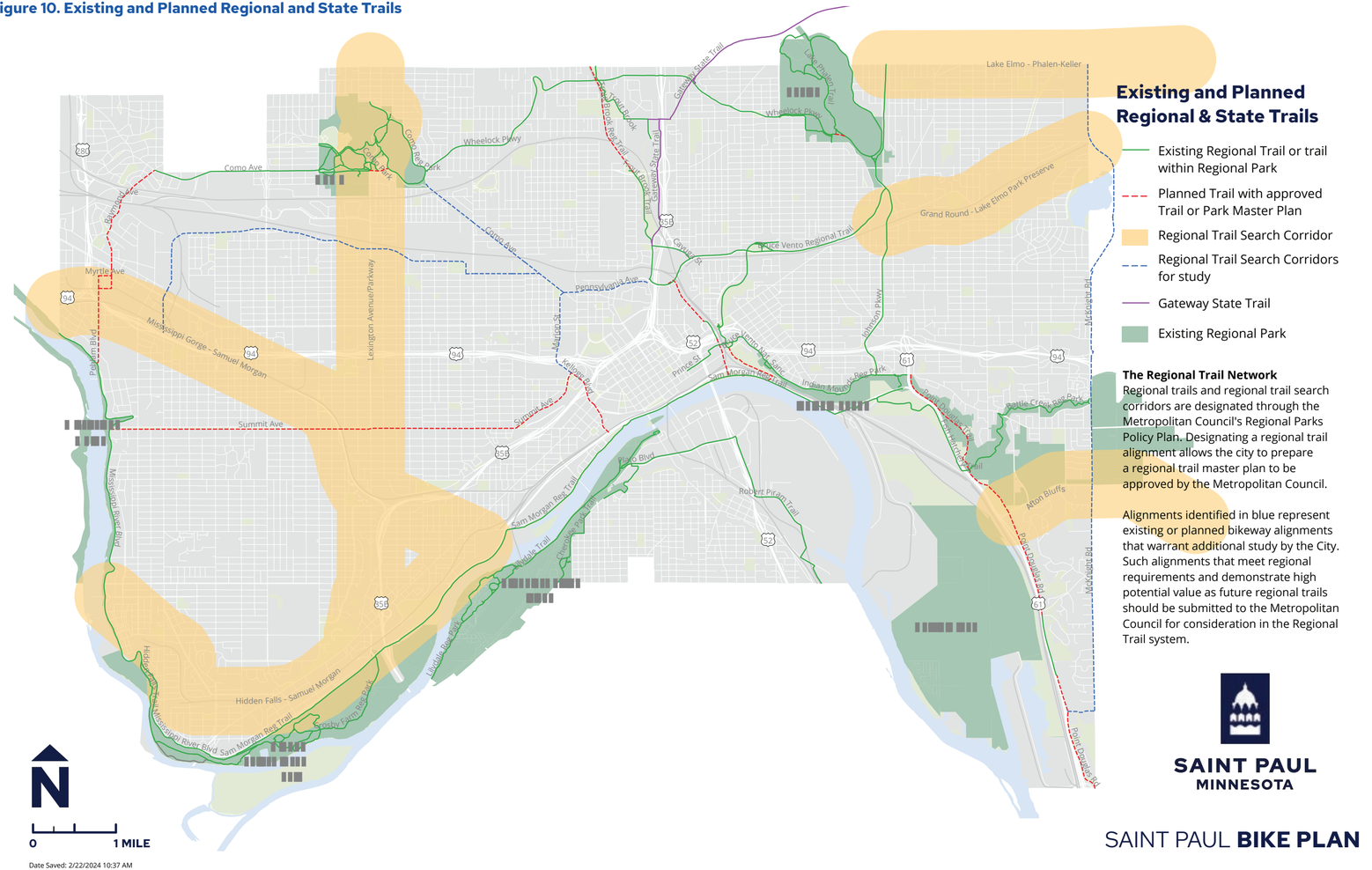
Figure 10 identifies the existing Regional Trails and other linear trails that pass through Regional Parks, as well as planned Regional Trails and Regional Trail Search Corridors. The Metropolitan Council requires the city to prepare a master plan document for all planned regional trails. Regional Trail Search Corridors are defined by the Metropolitan Council in the Parks Policy Plan. The City should pursue designation and development of additional Regional Trails shown blue in Figure 10. Additionally, staff should identify alignments within the Search Corridors, and prepare Master Plans for Regional Trails once alignments are known.

State Trails

State trails are owned, operated, and maintained by the Minnesota Department of Natural Resources (DNR). The DNR operates one trail facility in the City of Saint Paul. The Gateway State Trail was opened for public use in 1993, originally as an extension of the Minnesota-Wisconsin Boundary Trail, which was envisioned to connect the Twin Cities with Duluth. Approximately 2.1 miles of the trail is located within Saint Paul. The portion of the trail running in Saint Paul is shown in Figure 10.

The 1986 master plan created by the DNR established a desire to extend the trail into the "downtown area", though a preferred alignment for this extension was not identified. The City should work with the DNR to identify an appropriate long-term southern terminus of the Gateway State Trail.

Figure 10. Existing and Planned Regional and State Trails

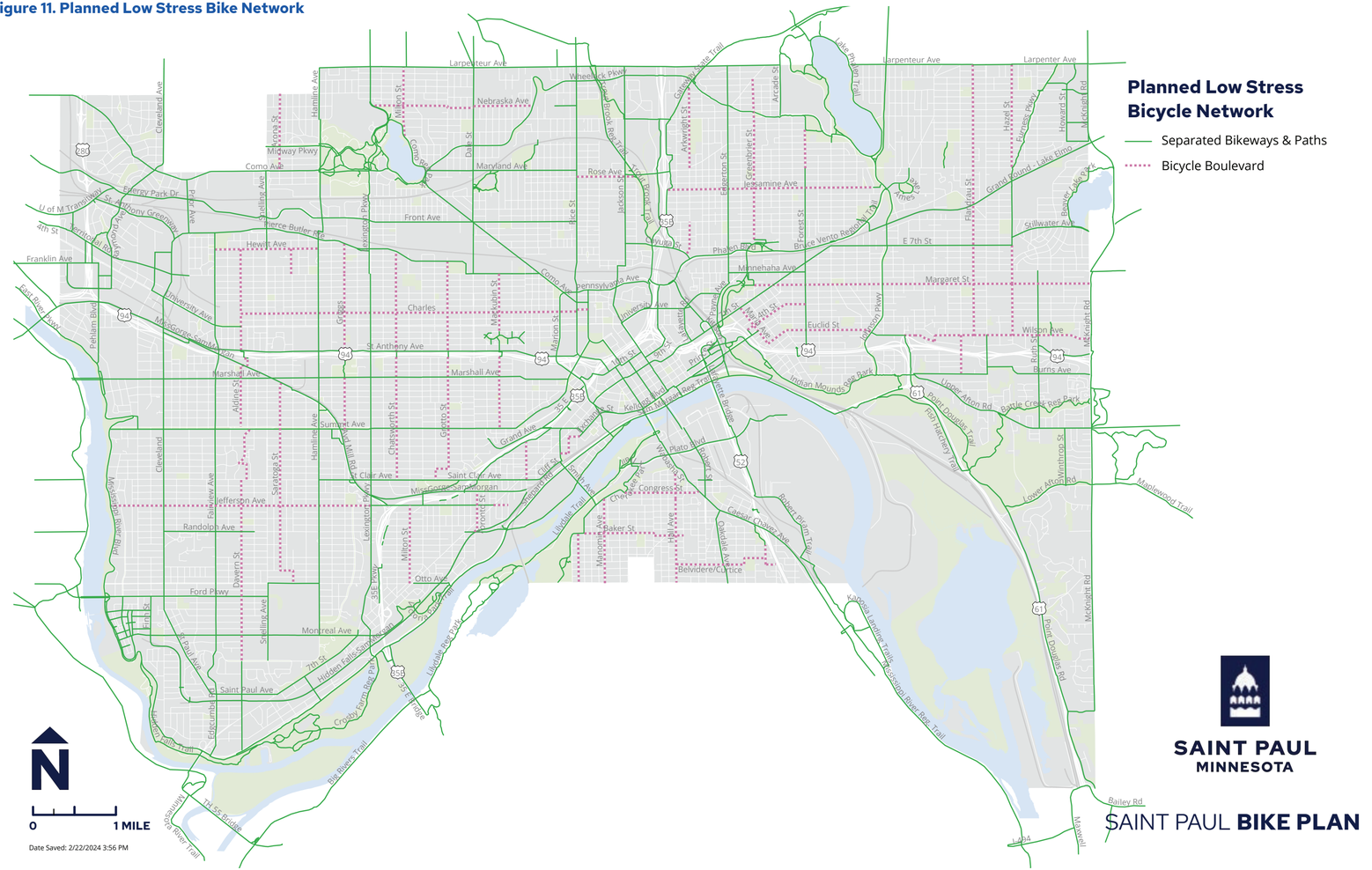


Low Stress Network

A network of comfortable bikeways for all different bike riders is critical to increasing the number of people who bike in Saint Paul. While on-street bike lanes and shared lanes may be acceptable for confident and experienced riders, these bikeways are not comfortable for everyone. The planned bike network in Figure 7 on page 53 shows all planned bikeways. Included in that are **low stress bikeways**: separated bikeways and paths, and bicycle boulevards. This "sub-network" of the entire planned network is shown in Figure 11, and is considered attractive and comfortable for all ages and abilities.

To achieve a connected network without gaps between low stress bikeways, the recommendations sometime deviate from the spacing guidelines described on page 44 (separated bikeways and paths should be one mile apart). Instead, the low stress network is occasionally planned for a distance less than one mile apart to make sure everyone in Saint Paul can get to where they need to go comfortably.

Figure 11. Planned Low Stress Bike Network



Grand Round

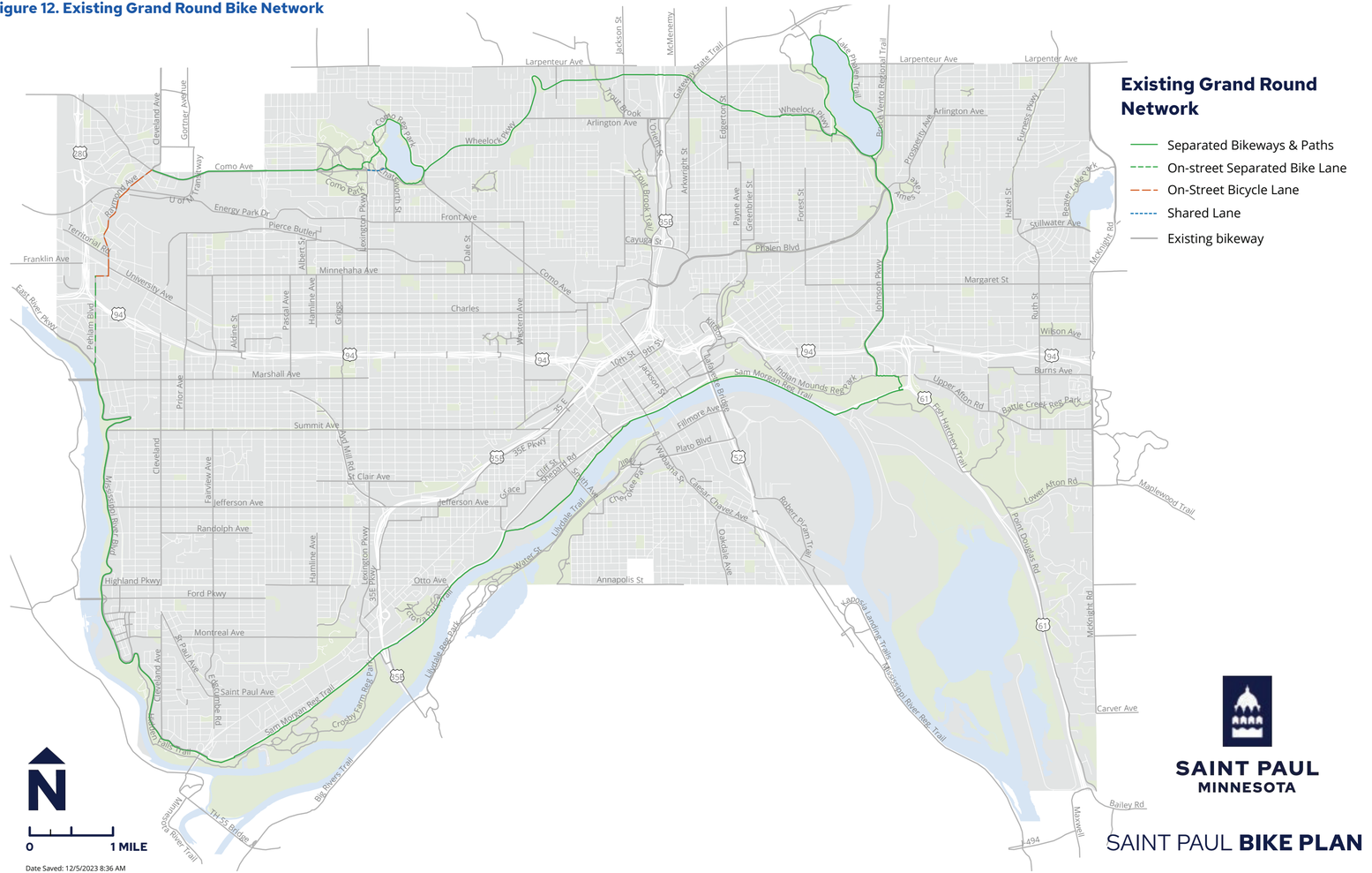
The Saint Paul Grand Round is an approximately 26 mile system of parkways, trails, and sidewalks. Its "Grandness" is evidenced by the sum of its many parks linked seamlessly together by a consistent design including wayfinding, interpretive signing, connections to local parks, appropriate lighting, historical markers and interpretive elements, landscaping, public art, street furniture, scenic overlooks, and other amenities which add to the comfort, safety, and enjoyment of visitors.

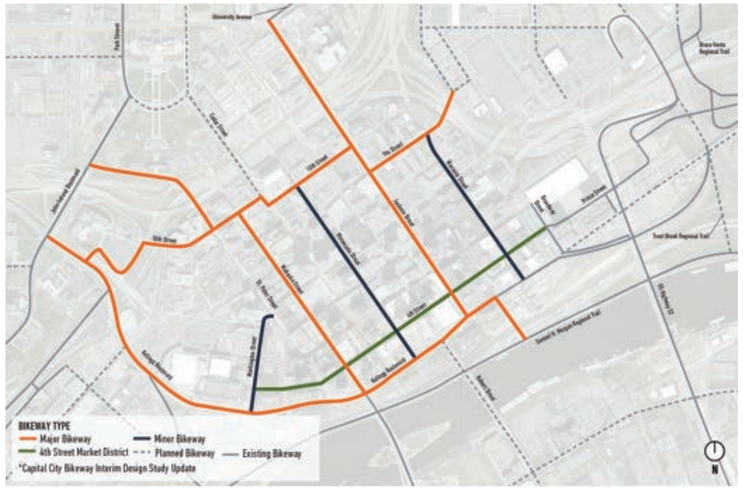
Landscape architect Horace W. S. Cleveland established the early vision for the Grand Round over 100 years ago, which led to the completion of several parkway segments in the early 1900s. By the 1930s, however, implementation of the remainder of the system had stalled. Planning for the parkways waned until the Grand Round Master Plan was completed in 2000, which built on the parkway system and started laying the groundwork to complete the 26-mile high quality bikeway. The Grand Round Design & Implementation Plan, completed in 2016, further refined the vision of the Grand Round and identified bikeway alignments and design guidelines for the Grand Round.

The completion of the Grand Round was one of two major goals described in the 2015 Bicycle Plan. Since then, the city has invested many resources to accomplish this goal. At the time of writing of this plan in 2024, the Grand Round is largely complete and consistent with the design in the Grand Round Design & Implementation Plan. Figure 12 shows the following gaps in the Grand Round:

- **Raymond/Myrtle Avenue between Pelham Boulevard and Como Avenue:** currently a striped bike lane, planned for separated bikeway
- **Pelham Boulevard between Mississippi River Boulevard and Myrtle Avenue:** currently on-street separated bikeway, planned for off-street separated bikeway
- **Como Avenue between Lexington Parkway and Como Lake:** currently a shared lane, planned for separated bikeway

Figure 12. Existing Grand Round Bike Network





From 2021 Capital City Bikeway Interim Design Study

Capital City Bikeway

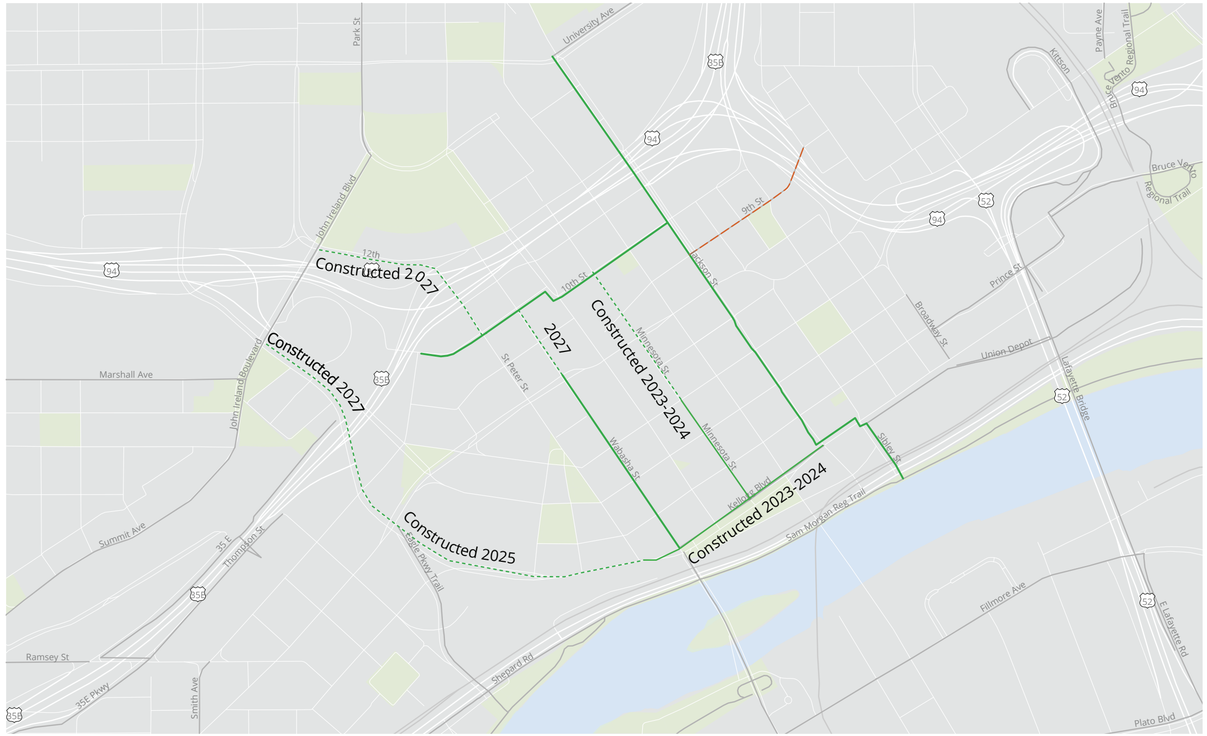
The primary objective of the Capital City Bikeway (CCB) is to provide safe and comfortable places for people of all ages, abilities, and preferences to ride a bicycle in downtown Saint Paul. Investment in downtown separated bikeways has been one of the primary initiatives of the city since planning for the bikeway was completed in 2016 with the publication of the Capital City Bikeway: Network Study and Design Guide. This guide identified the downtown routes and design guidelines.

The ongoing project will spearhead a transformational change to downtown Saint Paul by increasing activity in the streets, enhancing the vitality of sidewalks and public spaces, and stimulating investment and fostering economic development. When fully implemented, the Capital City Bikeway will be an enjoyable, comfortable, and safe experience that appeals to a wide range of people. The standards established in the Design Guide are essential to creating a consistent experience on this new bikeway system. Similarly, the elements of the bikeways such as wayfinding, site furnishings, and plantings contribute to a legible, memorable experience unique to the Capital City Bikeway.

The first leg of the CCB was constructed on Jackson Street in 2016. An on-street separated bike lane on 10th Avenue was installed in 2020. At the time of writing in 2024, a separated bikeway on portions of Wabasha Street, Minnesota Street, and Kellogg Boulevard have been constructed, and additional CCB corridors with separated bikeways are planned for construction in upcoming years as the city pursues and is awarded competitive federal funding. See Figure 13.

The completed CCB will connect popular attractions such as the Xcel Center, the Ordway Theater, the Science Museum of Minnesota, the Minnesota History Center, the Union Depot, the Farmers Market, CHS Field, the Landmark Center, the Minnesota Children's Museum, the State Capitol, and other institutions and businesses throughout downtown.

Figure 13. Existing and Planned Capital City Bikeway



SAINT PAUL
MINNESOTA

SAINT PAUL **BIKE PLAN**

U.S. Bike Routes 41 and 45

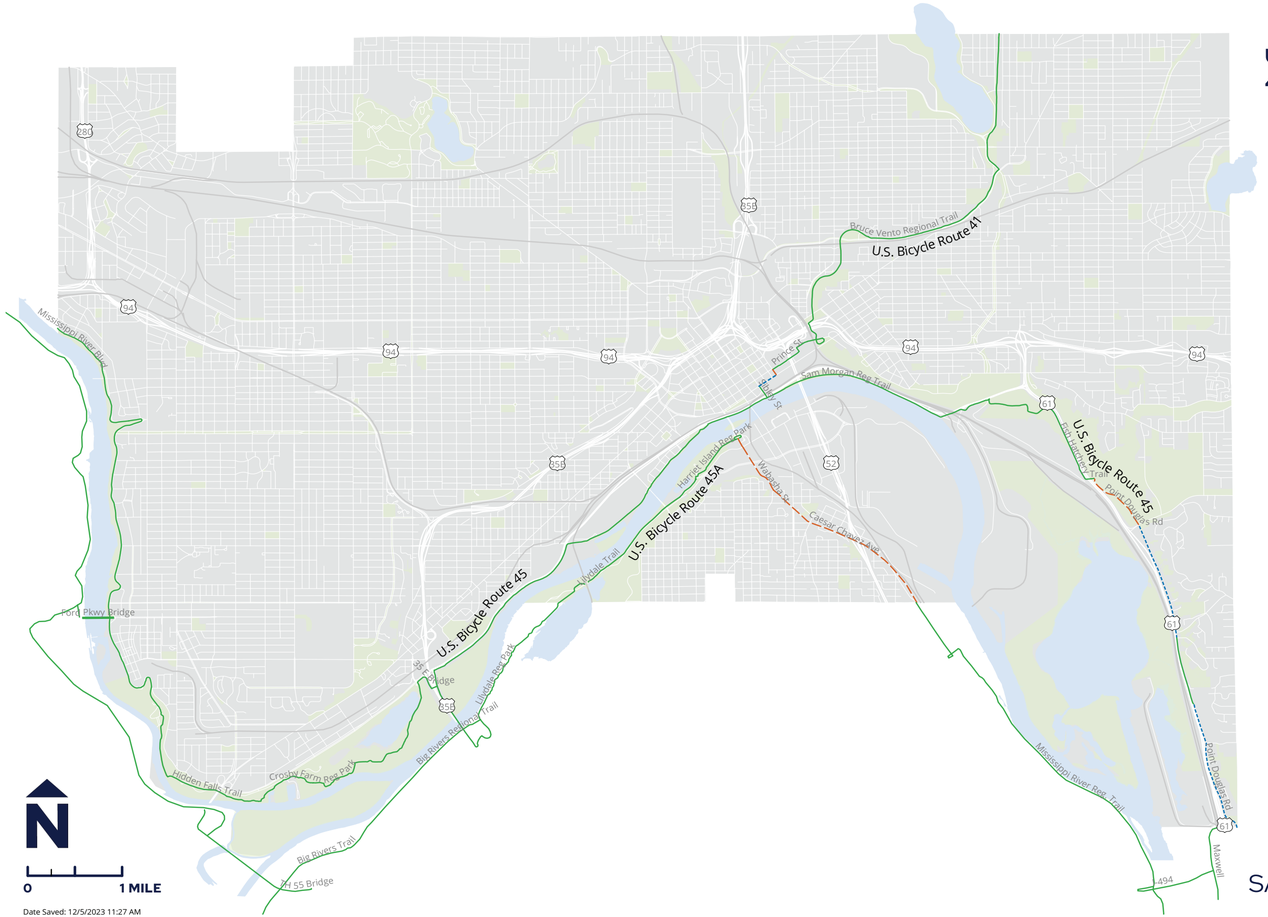
The U.S. Bike Route System is a national effort to establish a network of numbered interstate bicycle routes across the nation. Approximately five numbered routes have been identified at a conceptual level that pass through Minnesota. MnDOT is the lead agency on the development of the Mississippi River Trail (USBR 45), and The North Star Bicycle Route (USBR 41). Both US routes run through Saint Paul and are identified in Figure 14.

U.S. Bicycle Route 45, or The Mississippi River Trail (MRT), is a 3,000 mile long planned bikeway from the Mississippi River headwaters to the Gulf of Mexico. In Saint Paul, the MRT runs mostly on separated bikeways and paths and is identified through signage and wayfinding. It was designated by MnDOT in 2012.

U.S. Bicycle Route 41, or The North Star Bicycle Route, runs from the Mississippi River behind the Union Depot through Swede Hollow Park and on the Bruce Vento Regional Trail. It heads north through the metro and north all the way to Grand Portage State Park on the Minnesota/Canadian border. It was designated by MnDOT in 2016.

The city should coordinate with MnDOT as staff update these routes. MnDOT should consider modifying the alignment to include new comfortable and separated bikeways.

Figure 14. U.S. Bicycle Routes in Saint Paul



U.S. Bicycle Routes 45, 45A, and 41

- Separated Bikeways & Paths
- On-Street Bicycle Lane
- Shared Lane

This figure shows the portions of the two U.S. Bicycle Route Systems running in Saint Paul. The Mississippi River Trail (U.S. Bicycle Route 45/45A) travels on a network of separated and on-street bikeways from Itasca State Park to the Gulf of Mexico. The North Star Bicycle Route (U.S. Bicycle Route 41) connects the Mississippi River to Grand Portage State Park at the Minnesota/Canadian border.

Designation of U.S. Bicycle Routes in Minnesota is coordinated by MnDOT.

Additional information is available at https://www.dot.state.mn.us/bike/route-system.html

SAINT PAUL
MINNESOTA

SAINT PAUL **BIKE PLAN**

Chapter 5

Supporting Biking

Increasing the number of people biking in Saint Paul will require more than just a safe and comfortable network of bikeways. This chapter will discuss other initiatives, programs, and infrastructure that give people biking what they need for a convenient and pleasant ride.

Bike Parking

Bicycle parking is an important part of a functioning streetscape and is a basic need for anybody using a bicycle. At both ends of every trip, users must be confident that their bicycle can be stored in a safe location.

Bicycle Parking can be described as short-term or long-term. Short-term bicycle parking should emphasize convenience and ease of use for parking durations of less than two hours. Long-term bicycle parking should emphasize security and weather protection for durations of greater than two hours.

Properly designed long-term bicycle parking almost always offers a superior level of security compared with short-term parking, and will typically be located outside the public right-of-way or on private property. However, it will often be located in access controlled areas and may not be available for use by visitors. Short-term bicycle parking, where feasible, may be provided on private property. However, much of the demand for short-term bicycle parking will be met by providing bicycle parking in the public right-of-way.

Criteria	Short-term	Long-term
Parking duration	less than 2 hours	greater than 2 hours
Fixture types	Simple rack	Lockers, racks in secured area
Weather protection	Typically unsheltered	Sheltered or enclosed
Security	Relies on user-provided locks and passive surveillance (i.e. eyes on the street)	Unsupervised: bike lockers or restricted access room Supervised: staffed bike storage area
Location	In public space or private property	Typically on private property
Provider	Privately or publicly owned	Typically privately owned

It is of critical importance to provide appropriate long-term bicycle parking within residential properties. While many residents in single-family homes have a garage that effectively serves this function, many residents of multi-family housing do not have a similar space to store a bicycle. Residents of multi-family housing should be provided a secure and sheltered long- term bicycle parking location that is separate from their private living space and does not require the bicycle to be carried on stairs or elevators.

It is desirable to ensure a sufficient quantity of bicycle parking to discourage people from locking bicycles to inappropriate objects, such as gas meters, trees, or hand rails; or in areas where the locked bicycle will impede movement, such as in front of doorways, pedestrian curb ramps, or at bus stops. By proactively providing bicycle parking in appropriate locations, the city can discourage bicycle parking in inappropriate locations.

The vast majority of bicycle parking owned by the city is short-term parking provided in the public right-of-way. The City does not operate any bike lockers, though some are available through partner agencies such as the Metropolitan Council on city-owned property. Metro Transit has installed short-term bike parking at Green Line stations and along existing and planned high frequency arterial BRT routes, like the A line, B Line, and Gold Line.

City Zoning Code Bicycle Parking Requirements

Section 63.200 of the City zoning code establishes the bicycle parking requirements for all new construction and redevelopment throughout the city. The code establishes the minimum number of bicycle parking spaces required for a development, and provides guidance for where and how bicycle parking should be provided.

The code states that “the location of bicycle parking facilities shall be at least as convenient to the main entrance of the primary use as the most convenient third of the automobile parking.” The code allows the required bicycle parking to be located within the public right-of-way with a permit from the city engineer. Bicycle parking must be provided a similar level of protection from weather as is provided for motor vehicle parking.

A summary of the current minimum bicycle parking requirements are as follows:

- General: one bicycle parking space for every 20 motor vehicle parking spaces
- Multiple-family residential: one bicycle parking space for every 3 dwelling units
- General retail: 2 spaces or 1 space per 4,000 sq. ft. GFA, whichever is greater

The current zoning code does not specify whether the required bicycle parking is intended to function as short-term or long- term bicycle parking, and does not provide different guidelines for each type. The city should consider adding clarification to the zoning code to differentiate between short- and long term. Additionally, the code could be updated to reflect the different demand for bike parking on land uses along transit corridors.

Bicycle Parking in the Public Right-of-Way

Short-term bicycle parking should be located near the primary entrance to each destination. Often, locating bicycle parking within the public right-of-way will provide the most convenient experience for bicycle users. Short-term bicycle

parking in the public right-of-way is primarily provided in commercial areas to help people on bicycles easily access local businesses and workplaces. In most cases, this is accomplished through the installation of simple bicycle racks in the boulevard and furnishing zone of the sidewalk. Public Works has developed installation and spacing guidelines for bicycle parking in the public right-of-way.

In some locations, opportunities to locate bicycle parking in the boulevard are limited, though demand for bicycle parking may be high. In these cases, it may be appropriate to locate bicycle parking within the parking lane of a roadway, often called a "bike corral." Bike corrals will typically only be installed at the request of an adjacent property owner. The first bike corral in the city was installed in the fall of 2014.

Public Works maintains a database of bicycle rack locations throughout the city, though some of the data may be outdated or incomplete at the time of this writing. The database of bike racks is publicly available through the city's online GIS data. Staff should continue to verify the accuracy of the bike parking database.

The city continues to receive requests for additional bicycle parking within the public right-of way. In response, the city developed a Neighborhood Bike Rack Program for the purpose of installing short-term bicycle parking. The program currently requires the adjacent property owner to request a bike rack and indicate their willingness to keep it clear of obstructions and snow.

The easiest and most cost effective opportunity to install bicycle parking in the public right-of-way is by performing the work at the same time as other work is being performed, such as street or sidewalk reconstruction. Many bicycle racks have been installed in the public right-of-way in the past as part of larger reconstruction efforts.

Bicycle Parking within Heritage Preservation Districts

The bicycle has played an important role throughout the history of transportation. Bicycles were popular and affordable before the automobile reached widespread use, enjoying an initial peak in popularity in the 1880's and 1890's, a time when much of Saint Paul was still developing. Special coordination is required to incorporate bicycle parking facilities into identified Heritage Preservation Districts in a thoughtful manner.

Bicycle Parking at Transit Stations

Improving bicycle access to transit stations and stops is a top priority to encourage multi-modal trips. Effective integration of bicycle parking and routes with transit facilities and routes will increase both bicycle use as well as transit ridership.

Bicycling can greatly expand the viability of using transit to complete a trip. While bicycling has the potential to expand the effective service area of a transit route, transit likewise expands the ability to use a bicycle for a portion of a trip. This is especially true for trips of sufficient length that bicycling alone is not a realistic option. The vast majority of buses and LRT vehicles operating in Saint Paul already permit transit users to bring bicycles onto the transit vehicles. At most high frequency transit stops/stations along the Green Line and A line, bike parking is provided, giving people the option of leaving their bicycle at the transit stop or station. However, bike racks are typically not provided at most regular route bus stops. The city should support transit agency partners in their efforts to increase bike parking at transit stops, Park and Rides, and future routes.

Bicycle Parking Costs

The cost to install short-term bike racks in the public right-of-way can vary greatly depending on how much site preparation work needs to be completed. City policy requires that bicycle parking be installed on a concrete pad (rather than the grass in the boulevard). Where a concrete pad is already in place, a new bicycle rack can be purchased and installed relatively cheaply. If a concrete pad must be installed, the additional costs can range between $400 and several thousand dollars, depending on local circumstances.

Bike Theft

Although bike theft is largely underreported and tracked, it is a concern in Saint Paul, across the metro area, and across the country. The threat of bike theft can keep people from riding to their destinations. For example, staff routinely hear that students and families do not ride to school because of the threat of losing their bike while it's parked at school. Some solutions to bike theft are surprisingly low-tech and accessible:

- Properly located bike racks that are within eyesight of the public
- Racks that are securely fixed to the ground
- A loaner lock program for businesses, schools, or commercial districts
- Bike "valet" program as part of large events or high demand areas. Repurposing underused surface parking lots is a great location
- Free bicycle registration program that connects a bike owner, law enforcement, and a database of registered bikes

Showers, Lockers, & other Amenities

End-of-trip facilities such as changing rooms, showers, personal lockers, and self repair services (such as air pumps) are all important factors in determining whether individuals will choose to use a bicycle for transportation. A comfortable and secure place to freshen up after breaking a sweat is a necessity for many potential bicycle commuters.

Employers should be encouraged to provide showers and other end-of-trip facilities for their employees. For many smaller businesses or developments, this will not be a realistic possibility. However, opportunities for multiple small businesses to share facilities can make it a more realistic possibility. In some cases, partnerships with nearby facilities (such as private gyms or fitness centers) may provide realistic opportunities for employers to provide this benefit to employees. In many cases, large employers or office developments will include showers in connection with other on-site fitness amenities.

There are currently no requirements regarding provision of changing rooms, showers, or other end-of-trip amenities. The city should consider creating requirements in new developments.

Bicycle Tune-Up Stations

In the summer of 2014, five tune-up stations provided by private sponsors were installed at locations throughout Saint Paul. The tune-up stations provide air pumps to inflate tires as well as other basic tools to help bicyclists keep their bicycles in working order. The Department of Parks and Recreation often add similar tune-up stations to their trail heads and park entrances. Opportunities to expand the offering of tune-up stations should be explored.

Bicycle Counting

Having data on bike traffic is one of many inputs to deciding how, when and where to expand the bike network. A high number of people biking could be a reason to build a new facility, improve the existing facility, or improve connections to it. However, the absence of bike traffic does not necessarily mean people do not want to bike. It could mean they simply do not feel comfortable biking at that location. Because of that, bicycle traffic data alone should not determine bike network priorities. Still, having bicycle traffic data is useful as one of many inputs. Currently, the city does not have the same understanding of bike traffic compared to vehicle traffic.

Manual Counts

There have been several efforts to gather count information of bicyclists. A local nonprofit organization called Transit for Livable Communities established a program to conduct annual counts at a handful of locations in Saint Paul in 2007. Other data has been collected by the city or neighborhood groups on an ad-hoc basis for specific projects or other initiatives over time.

In 2013, the city established a bicycle and pedestrian count initiative to establish a formal methodology and counting procedure. The counting methodology relies on volunteers to collect two hours of count data each year in early September, and is based on recommendations from MnDOT and the FHWA about bicycle counting methods. The methodology recommends that the counting effort be repeated annually. The count was repeated in 2014, and continued annually through 2019.

While the various volunteer-driven manual counting efforts have provided a good start to understanding bicycle traffic, manual counting efforts are labor intensive and may not be a sustainable approach to collecting data. In addition, the current methodology of collecting two hours count data one day each year provides merely a snapshot in time of bicycle usage. The current methodology does not provide an understanding of bicycle usage throughout the day, week, or year. At the time of writing, the manual count program is not active because of staff capacity. However, as staff and volunteer capacity allow, the manual count program should resume.

Automated Counts

MnDOT collects bicycle traffic data across the state and in Saint Paul using a variety of methods. Automatic counters are installed for shorter durations. The locations are chosen collaboratively between MnDOT and city staff. MnDOT also has three permanent counter locations in Saint Paul: one on eastbound Summit Avenue just east of Fairview, another on westbound Summit in a similar location, and a third installed on the Jackson Street leg of the Capital City Bikeway. While automated counting procedures may not provide perfect counting accuracy, the ability to collect greater volumes of data over time is inherently valuable. The city should continue collaborating with MnDOT and other agencies, as well as explore new methods for automating data collection.

Wayfinding & Mapping

Wayfinding tools such as signage, pavement markings, maps, or electronic guidance can help make the city easier to navigate by bicycle, especially for new riders, or people using an unfamiliar route. The city publishes a map of the existing bicycle network and updates the map at least annually. In addition, various organizations such as advocacy groups have published bicycle network maps. The city should continue to make bikeway data free and available for organizations to use for their mapping.

Several online wayfinding tools such as Google and Apple Maps allow bicyclists with a smart phone to access route information and recommendations. However, these services provided by third parties may not have up-to-date information about the bicycle network, including information about temporary disruptions or detours to the network.

The city should not assume that all people biking have access to smart phones and online route information. Traditional wayfinding elements such as signage and pavement markings should be used to help people biking find destinations when the route is not clear or obvious. The existing wayfinding system should be enhanced and expanded, in accordance with the guidance included in the Saint Paul Street Design Manual. Wayfinding signage across route systems should be coordinated among the various managing agencies.

Bike Share

Bicycle sharing is often ideal for short distance point-to-point trips, especially spontaneous trips where users do not have their own personal bicycles with them, or when they would rather leave their bicycles at home. In many ways, bicycle sharing can be viewed as an extension of the transit network, with bicycling providing the last mile service of a combined trip with the light rail or bus service. City staff should support internal and external efforts to bring bike share to Saint Paul.

SHARED MOBILITY

Shared mobility has exploded in popularity internationally and in the United States. In many major cities, it isn't uncommon to see people renting shared bicycles, electric scooters, mopeds, and other still-unnamed vehicles with their smartphones. Electric scooters have been operating in Saint Paul since 2018 and are a popular way for people to make short trips. While riding on the sidewalk is not permitted, it is frequently done by users because riding on the street next to drivers can be uncomfortable. The city should consider e-scooter use (and future shared mobility) when implementing the bike network presented in this plan. By giving people an attractive, safe, and comfortable space to ride, conflicts with people walking and driving can be minimized.

Safe Routes to School

Safe Routes to School (SRTS) is a national and international initiative to increase the number of students, families, and staff who walk and bike to school. The City of Saint Paul is active in the SRTS program and collaborates with all schools in Saint Paul to provide a safe and comfortable experience for people traveling to school. The partnership is especially strong between the City, County, and Saint Paul Public School (SPPS) District, who work together on disrict-wide challenges and solutions. This work is advanced through state and federal SRTS technical support and resources from MnDOT, as well as ongoing grants to fund pedestrian and bicycle infrastructure near schools.

Safe Routes to School uses a "6Es" approach to reach goals. Instead of strictly focusing on **engineering** and design of infrastructure, SPPS and schools provide **educational** skills and resources to students who want to learn how to ride and walk safely, and information to families about walking routes and safe pick-up and drop-off procedures. Walk and Bike to School Day is held three times annually in Saint Paul and **encourages** families to try walking and biking to and from school that day. City staff and SPPS **engage** parents and caregivers in project planning to understand the challenges faced in different neighborhoods in Saint Paul, and the Saint Paul Police Department and other law enforcement agencies play a critical role in promoting good behavior near schools. In recent years, SPPD has also interacted with the public by focusing their **enforcement** on educational safe driving campaigns. All of these strategies — and many not mentioned — are delivered to the public **equitably**, making sure different communities receive the support they need to succeed. The focus on equity means prioritizing resources to communities who have historically received less.

The City of Saint Paul partners with schools and SPPS to create SRTS plans for schools, often through funding from MnDOT. These plans are posted on the city webpage and identify barriers to walking and biking to school. They provide recommendations for improving streets and are used to pursue state and federal grants for infrastructure funding.

Safe Routes to School relies on the support from schools and community members to promote and demonstrate safe behavior on our streets and near schools.

Bike Network Maintenance

A bike network that attracts new riders is more than just one that connects destinations safely. A high quality network is also one that is maintained to be comfortable, accessible, and safe during all seasons. A well-maintained network of bikeways should meet a high level of service and includes the following:

- Snow and ice management
- Surface repairs and pavement improvements
- Cyclically refreshed striping and pavement markings
- Cyclically replaced delineators
- Removal of debris through surface sweeping
- Vegetation management and trimming

Though this plan does not provide detail for a complete bike network maintenance strategy, this section will describe how the six bullets above affect biking in Saint Paul. Maintenance staff at the city and local partners work extremely hard to provide a drivable, walkable and bikeable network of streets, sidewalks, and bikeways, but resources are limited. The city should appropriately budget for maintenance and operations to achieve a high level of service of the current network. As the network of bikeways is expanded through capital projects, resources devoted to maintaining and operating the network should increase commensurately in order to provide a safe and comfortable experience.

Snow and ice management

Engagement during the development of this bike plan indicates that many people want to bike during the winter months but most do not. Perhaps surprisingly, cold weather and lack of winter bikes aren't the primary reasons for lower bike traffic. Instead, the community reports snow and ice on streets and paths as the main factor standing in their way. In the same way snow and ice can make driving and walking difficult, biking can be uncomfortable and unsafe. On-street bikeways receive plowing with the vehicle travel lanes. Most separated bikeways and paths are plowed independent of vehicle lanes and at different frequencies.

Removing and preventing snow and ice on bikeways comes with unique challenges. These challenges can be mitigated with the proper equipment, adequate staff, and a bikeway design that accommodates the storage of snow and limits the formation of ice.

Surface repairs and pavement improvements

Streets with cracks and potholes are difficult and uncomfortable to drive on. The same is true for biking, and depending on the condition of the street, one in poor shape can present a legitimate hazard for people biking. Street surface condition was identified in community engagement as one of the main reasons people do not bike.

Cyclically refreshed striping and pavement markings

Pavement markings and striping indicate where people sharing the road should be positioned, and how they should interact with one another. If this striping fades or disappears, a street can become uncomfortable and difficult to navigate for all users. The city repaints striping, but there is no regular schedule because of limited resources.

Cyclically replaced delineators

Flexible delineators offer physical and vertical separation between vehicle travel lanes and bicycle space. If delineators become knocked down and not replaced, this separation is lost and spaces to bike and drive are not as clearly defined. The city replaces delineators as needed, but there is no regular schedule because of limited resources.

Removal of debris through surface sweeping

A clean surface is a safe and comfortable one to bike on. Debris like sand and glass can present a fall hazard for people biking, plus can get caught in the bike components and cause a flat tire.

On-street bikeways are swept at least twice annually as part of the street sweeping program. Each spring and fall the City of Saint Paul sweeps all residential streets to keep them clean, and to keep debris out of our lakes, streams and rivers. It takes approximately four to six weeks to sweep all 530 miles of residential streets and 330 miles of alleys in Saint Paul. The City sweeps the 340 miles of arterial (main) streets on a regular schedule from April until October depending on weather conditions. Most arterial streets are swept at least eight times per year.

Many separated bikeways and paths are swept more frequently, but an established and regular schedule is not in place.

Vegetation management and trimming

While riding a bike along a tree-lined street or path can be pleasant way to travel, tree branches and overgrown grass and weeds can become a hazard if not maintained. City and partner agency staff should work together to ensure trees and vegetation on both on-street and separated bikeways are maintained.

Chapter 6

Building the Bike Network

This plan establishes a long-term vision that will take many years to fully implement. This chapter discusses opportunities to construct bikeways, and provides priorities for the city and its partners to focus on first. It will be important to track progress annually, and share this information with the community.

BIKE NETWORK GOALS

The Saint Paul Climate Action and Resilience Plan (CARP), adopted by City Council in 2019, outlines strategies for limiting the city's impact on climate change. Acknowledging the importance of moving away from trips made by car, the CARP sets an ambitious goal of building over **160 additional miles of bikeways by 2040.**

Funding Network Expansion

Strategies to implement the recommendations of this plan must necessarily flow from an understanding of how the city funds capital projects. Most projects are funded locally, though some projects are funded by agency partners such as Ramsey County, MnDOT, or the Metropolitan Council. External state or federal grant sources are also available, though these sources are often not a predictable way to plan for network expansion.

Many of the bikeways recommended in this plan will be funded and developed as independent projects, though there may be some opportunity to bundle several similar projects together in a single funding request. In addition, much of the bicycle network will be funded through routine maintenance or reconstruction efforts. Bicycle network capital projects may be managed by either the Department of Public Works or the Department of Parks and Recreation, and are channeled through the city's Capital Improvement Budget (CIB) process for financing and implementation.

Capital Improvement Budget

The Capital Improvement Budget (CIB) is how construction and maintenance of city infrastructure is funded. This includes improvements of streets, bridges, libraries, parks, recreation centers, and other public facilities and infrastructure. The budget is composed of a variety of state, federal, and local funding sources. The CIB Committee is an advisory body of 18 Saint Paul residents who recommend projects and funding levels to the Mayor every year by June 30. The Capital Improvement Budget is approved by the Mayor and City Council annually.

In 2019, a new process was created on alternating years. In the first year, the budget process is dedicated to city department-submitted projects. In the second, community members are invited to submit projects, eliminating the competition for funding between city and community projects that existed in the previous years. In both years, the CIB Committee advises and recommends spending, the Mayor provides priorities, and the City Council adopts the final budget.

Every bicycle capital project will be proposed and funded through this process, either as a standalone bikeway project, or as part of a larger capital project. This includes projects that are successful at receiving state or federal funding to aid in implementation and require additional matching local funds, which will be identified through the CIB process.

Bicycle, Pedestrian, & Traffic Safety Program

Included within the CIB is the annually funded Bicycle, Pedestrian, and Traffic Safety Program, designed to fund safety improvements at various locations throughout the city. The program is intentionally flexible to fund safety improvements such as pavement markings, signs, pedestrian countdown timers, audible pedestrian signals, pedestrian ramps, traffic calming elements, dynamic speed display signs, and other elements.

While limited in scope by its funding appropriation ($252,000 in 2014), the program remains an important local funding source for bicycle infrastructure. However, it is not intended to be the primary source of funding for expanding the bicycle network. Rather, it is intended to fund miscellaneous small-scale pedestrian and bicycle improvements that would not otherwise be funded.

External Grants

The city will seek external funding sources as much as possible to implement the bicycle network, though the application process is often quite competitive. Typical grant sources include trail funding sources administered through the DNR, and federal transportation grants administered by the Metropolitan Council.

Each funding source is unique and often comes with very specific requirements regarding eligible expenses. Often the qualifying or selection criteria for each funding source will determine the type of bikeway project that is likely to be successful at receiving funding.

Creating, adopting, and updating this Bicycle Plan is a critical step towards receiving competitive grants. It shows political and community consensus for bicycle projects in Saint Paul. Following the adoption of this plan, the city will be best positioned to compete for external grants for specific bikeway corridors by completing the Phase 1: Planning portion of the Bikeway Development Process to demonstrate public support for the corridor project and to be well-prepared to complete the applications.

INTERIM/NEXT BEST BIKEWAY

Often, city staff will be faced with a challenge: the scope of the planned street project does not match what is needed to implement the long term planned bikeway vision for the street. For example, a separated bikeway or path is shown on the planned bike network, but the street is only scheduled for a mill and overlay. It is important for the city to consider innovative options for improving a bikeway given the limited scope. Where possible, the city should move towards achieving the appropriate and planned bikeway type for that street , even if it means using different forms of separated, or new techniques and strategies for design and operation. See Chapter 3 for discussion of the "next best bikeway".

Bikeway Development Process

This plan strives to create a consistent, careful, and systematic approach to implementing elements of the bicycle network. The intent of this approach is to minimize the timeline required to secure funding for the project, to facilitate the development of effective bicycle infrastructure in a cost-effective manner, and to better position the city to compete for external funding sources for bikeway implementation.

The project development approach can be described in four phases:

- Phase 1: Planning
- Phase 2: Develop Implementation Strategy
- Phase 3: Final Design & Implementation
- Phase 4: Evaluation & Maintenance

This document establishes a long-term vision for the development of a bicycle network throughout the city. However, there are still many details that remain to be determined for each corridor identified in this plan. This process is intended to help city staff and residents understand how and when these details are determined.

This process is not intended to be rigid or to discourage neighborhoods or staff from employing unique or new strategies of public involvement or planning. It is understood that each neighborhood will require a unique planning approach and that unanticipated opportunities for implementation may present themselves that should be seized.

PLANNING & ENGAGEMENT PHASE

The planned bicycle network and planned bikeway type is the starting place for staff and the community. Every project will need to go through an engagement process to confirm the recommendations found in this plan.

In some cases, bikeways may be implemented quickly and easily without changing the operational characteristics of a roadway. This is particularly true of roadways identified for shared lane type bikeways that rely on shared lane markings or signage alone to establish the bikeway. In these cases, a formal planning or public involvement process may not be necessary and the bikeway may be implemented immediately upon identification of funding. In other cases, where impacts to the corridor may be more significant (e.g. parking restrictions or lane removals), a public involvement process will be necessary to discuss design alternatives, engage nearby residents, and confirm the recommendations in this plan before implementation.

The Bikeway Development Process proposed in this plan should be scaled as appropriate to each project. Where an implementation opportunity has not been identified, this planning process may be completed over the course of a year or more. In other cases, such as when an implementation opportunity such as a scheduled mill and overlay is approaching, this process may need to be condensed so that an informed decision can be made in a timely manner. In both cases, the intent of this process is to provide a robust public engagement process.

Phase 1: Planning & Engagement

The purpose of this phase is to establish the long-term vision and preferred design for full build-out of a bikeway. It is increasingly becoming a reality of local, state, and federal funding sources that city staff and residents must have completed a substantial amount of initial planning and public engagement in advance of applying for external funding. The purpose of this phase is not to discourage the city or neighborhoods from seeking funding without completing initial planning or public involvement efforts if there is a compelling reason to do so. Rather it is to better position those projects to be successful at receiving funding either external or internal to the city.

Initial planning efforts for development of new bikeways or improvements to existing bikeways may be led either by city staff or neighborhood groups in collaboration with city staff. The end result of this phase should be an understanding of the existing conditions, a vision of the desired bikeway, and what improvements are required to realize the preferred design. This phase should also establish a concept level construction cost estimate for the bikeway.

This is also the most appropriate time to coordinate efforts between the city, Ramsey County, MnDOT, the DNR, and the Metropolitan Council to ensure consistency and agreement among agencies.

At a minimum, the planning phase should include the following:

- Collection of relevant data such as street widths, motorized and non-motorized traffic volumes, right-of- way width, existing conditions, crash history
- Identification of objectives
- Identification of long-term vision
- Initial public engagement effort
- Development of design alternatives including “next best/interim” bikeway
- Identification of a preferred design
- Development of concept level cost estimate

BIKE NETWORK PHASING

In some rare cases, there are existing bikeways that are not shown on the future planned network. This plan does not propose removing those existing bikeways immediately. Instead, the existing bikeways not on the planned network should be maintained until an appropriate alternative bikeway is established or as otherwise determined by city staff.

ROAD OWNERSHIP AND PROJECT DELIVERY

Not all streets in Saint Paul are owned by the City of Saint Paul. Ramsey County and the State of Minnesota own some streets, too. As owners of their respective streets, each agency has the final say about the design and function, but are each committed to safety, mobility, and accessibility. It is hard to know who owns the street you are biking on — streets owned by all three agencies can "feel" the same. See Figure 15 on page 87.

Many of the bikeways in this plan are recommended on or along portions of County and State owned streets. As such, staff from each agency were consulted in the development of this plan. As the recommendations in this plan are built over time, this document will be referenced by planners and engineers, no matter which agency they work for.

Phase 2: Develop Implementation Strategy

The second phase is the process of matching the identified preferred design with a funding source or implementation opportunity. Funding for infrastructure projects is often a combination of several different sources, and each source will bring with it certain expectations and limitations. In some cases, the full project may need to be constructed in several construction phases over time, and each phase may be constructed using a different funding source.

This phase of the process should:

- Identify short-term and long-term opportunities
- Identify short-term and long-term priorities
- Evaluate potential for bundling bikeway implementation with other opportunities (such as upcoming routine roadway maintenance or planned reconstruction)
- Identify internal and external funding opportunities and timelines
- Apply for funding of full or partial project implementation
- Secure funding

In many cases, this will become an iterative process. If funding is secured to implement only a portion of the preferred design, the elements of the preferred design that remain unfunded will continue in Phase 2 until funding can be identified.

Phase 3: Final Design & Implementation

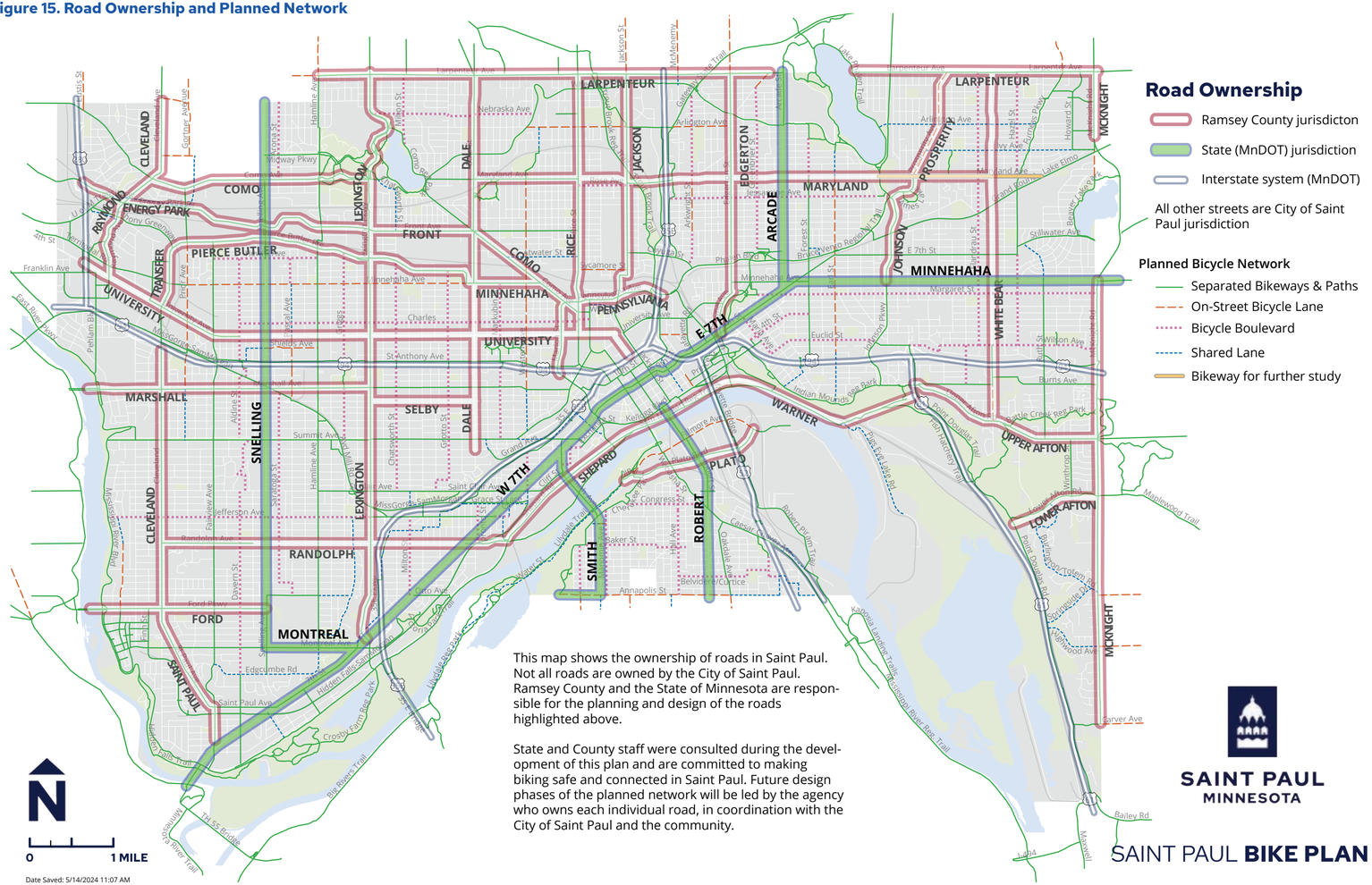
After funding has been secured to implement a preferred design, final design and construction documents will be completed by city staff and the project will be implemented. Construction may be performed by city staff or a private contractor, depending on the project scope and other factors. In most cases, this phase should also include a public involvement and notification effort consistent with the level of anticipated impacts. In some cases, educational or marketing materials may be needed to provide information to road users, residents, businesses, and other stakeholders about new or unfamiliar designs.

Phase 4: Evaluation & Maintenance

After a bikeway has been implemented, it should continue to be evaluated and monitored to ensure that the design is performing as intended and to identify any unforeseen challenges or possible future improvements. This phase is continuous as the city should always be monitoring and evaluating existing infrastructure. At a minimum this phase includes the following:

- Monitor crash and usage data to evaluate the effectiveness of the facility
- Perform routine maintenance on the bikeway and evaluate the effectiveness of maintenance operations
- Evaluate the need for additional modifications or upgrades to the facility

Figure 15. Road Ownership and Planned Network



Implementation Opportunities

The most fiscally efficient way to implement bicycle facilities is by implementing the bikeway as part of a larger construction or maintenance project. Doing so will often result in a better overall finished project. By including bicycle elements into other projects with a larger scope, the cost of implementing the bikeway is absorbed into the budget of the larger project, often at little additional cost to the larger project. The following is a list of common capital projects that can provide the means for implementing bikeways.

Mill and Overlay

The mill and overlay (or resurfacing) process involves grinding off the existing surface of the roadway and replacing it with new asphalt. In this process, the existing roadway striping and markings are removed, presenting an opportunity to re-evaluate the previous striping and lane configurations and consider implementing painted bicycle facilities for very little additional cost. Since the creation and adoption of the bike plan in 2015, the city has used this method to implement on-street bike lanes with great success, and will continue to do so into the future.

Implementing the planned bikeway will not always be possible through a mill and overlay process. When this is the case, the city should consider building *some* bikeway, even if it isn't the planned bikeway. See discussion of Next Best Bikeway.

Street Reconstruction

Full reconstruction of arterial or collector roadways present the most cost-effective opportunity to implement all types of bikeway facilities, including end-of-trip facilities such as bicycle parking. In a full reconstruction, the existing roadway is removed and replaced, including all curbs. Full reconstruction also typically includes replacement or repair of sidewalks, driveway aprons, lighting, and other streetscape elements. Boulevard vegetation and street trees are protected where feasible. This process provides an opportunity to reevaluate elements such as street width, parking availability, sidewalks, separated bikeways and paths, lane configurations, and signal locations. Often, the cost of including bicycle facilities in a full reconstruction project is minimal. Saint Paul Streets (SPS), the city street reconstruction program, has used this method to construct several bikeways, including sections of the Grand Round along Wheelock Parkway. The city should consider the planned bike network when prioritizing streets for full reconstructions.

New streets and redevelopment

On rare occasions, new streets are built in urban areas, including Saint Paul. These new streets often come by way of redevelopments of large areas of land. Highland Bridge built new streets and high quality bikeways on the land previously occupied by the Ford Motor Assembly Plant in the Highland neighborhood. Hillcrest Golf Course in the extreme northeast portion of Saint Paul will be constructed with new streets, housing, industrial uses, and bikeways, and renamed The Heights. There are other large areas of land in the city that have long been considered for new developments. Along with these new developments, bikeways can be added. This Bicycle Plan should be updated to consider opportunities for new streets and bikeways.

Improving Existing Bikeways

Much of this plan focuses on expanding the bicycle network and the construction of new facilities. It is important to remember the need to continuously evaluate and improve existing bikeways. Improvements to existing bikeways may be needed in response to field observations about how the facility is operating, an analysis of crash history, in response to public feedback, or other reasons. Implementing improvements to existing facilities must proceed through the same funding processes as implementing new infrastructure.

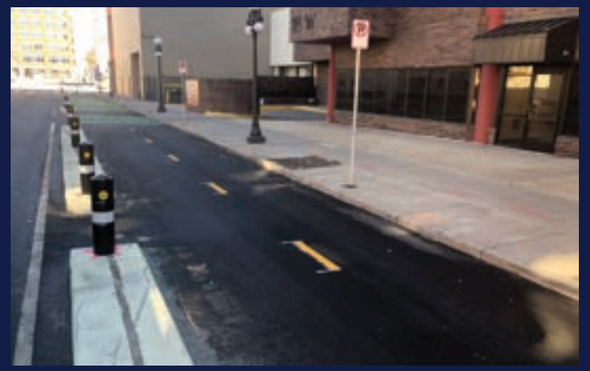
Using Lower-cost or Short-term Materials

While the long-term vision of the planned bicycle network is to build spaces for biking separated from drivers by things like curbs and tree lined boulevards, those street elements are expensive and take months and years to plan, design, and fund. For several years, the City of Saint Paul has used and experimented with lower-cost materials to implement bikeways across the city. These materials include flexible plastic delineators, bollards, form-in-place curbs, and jersey barriers. Examples are shown below.

Using these materials allows the city to add a separated space for biking without the cost of a larger project. They can fill gaps and "test" street design while the city searches for funding for a more substantial project. It is the goal of the city to prioritize these installations for permanent construction.

Things to consider with these types of bikeways:

- Installations using these materials require ongoing and unique maintenance (e.g. replacement of delineators), especially during and after the winter plow season
- Installations using these materials are significantly cheaper than a comparable reconstruction, but they are not inexpensive on their own
- Though sometimes thought of as "temporary", some installations using short-term materials may be left on the street for years as funding for a permanent project is prioritized and secured



▲ *10th St downtown: Form-in-place curbs, bollards*

▲ *Pelham Blvd: Delineators*

▲ *Kellogg-3rd St bridge: Jersey barriers*

Bicycle Network Priorities

Full implementation of this plan will take many years to complete, elevating the importance of developing a process to prioritize investment. This section will discuss priorities – where people want new bikeway connections – and opportunities – where it makes sense to invest given upcoming funding or planned projects. In some cases, opportunities might not be high priorities, but because there is an efficiency to building bikeways alongside other projects, it makes sense to invest.

Network Expansion Priorities

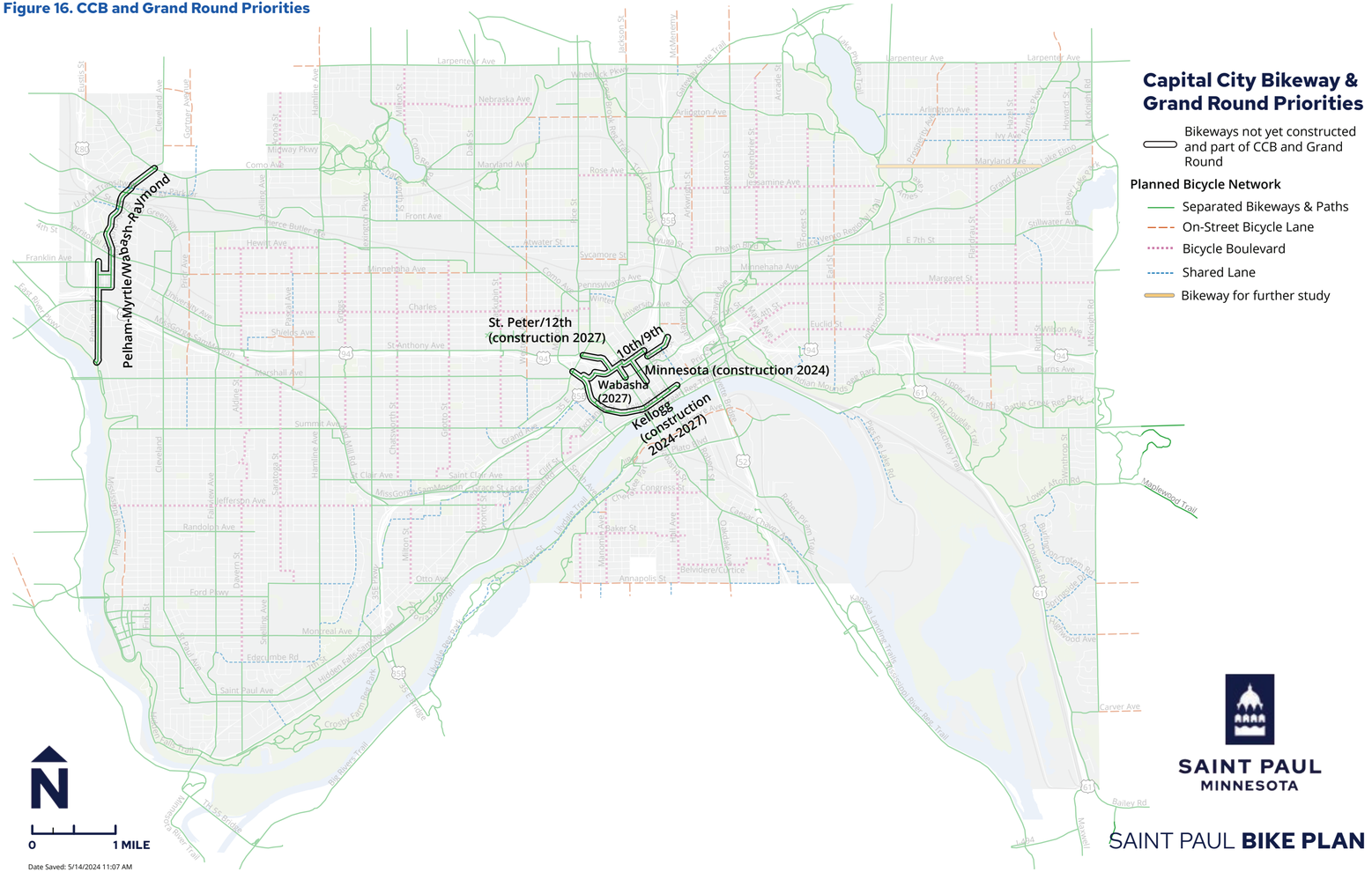
Complete the Capital City Bikeway and Grand Round

This priority is a direct reflection of priorities from the original Saint Paul Bicycle Plan, adopted in 2015. Since then, implementing these two systems of high quality bikeways has been a focus for the city. Though the city has achieved many successes, there are remaining gaps that should be pursued. These gaps are shown on Figure 12 on page 63, Figure 13 on page 65, and Figure 16 at the right. *The Grand Round Design & Implementation Plan* and *Capital City Bikeway: Network Study and Design Guide* provide direction for the city to complete these two important and popular systems. Completing these two networks should be priorities when pursuing external funding (see page 96) if they cannot be completed through ongoing street reconstructions (see "Street Reconstruction" on page 88).

CHANGING OPPORTUNITIES

Opportunities to build bikeways change. What is an opportunity at the time of writing this plan might not be an opportunity in the future. Or, there may be new opportunities that arise that are unknown now. Ramsey County, MnDOT, and the City should always coordinate on upcoming projects. Where there is an opportunity to add a new bikeway because of a new project or new funding, it should be considered. Major street changes don't happen frequently, so it makes sense to improve streets for biking when there is an opportunity.

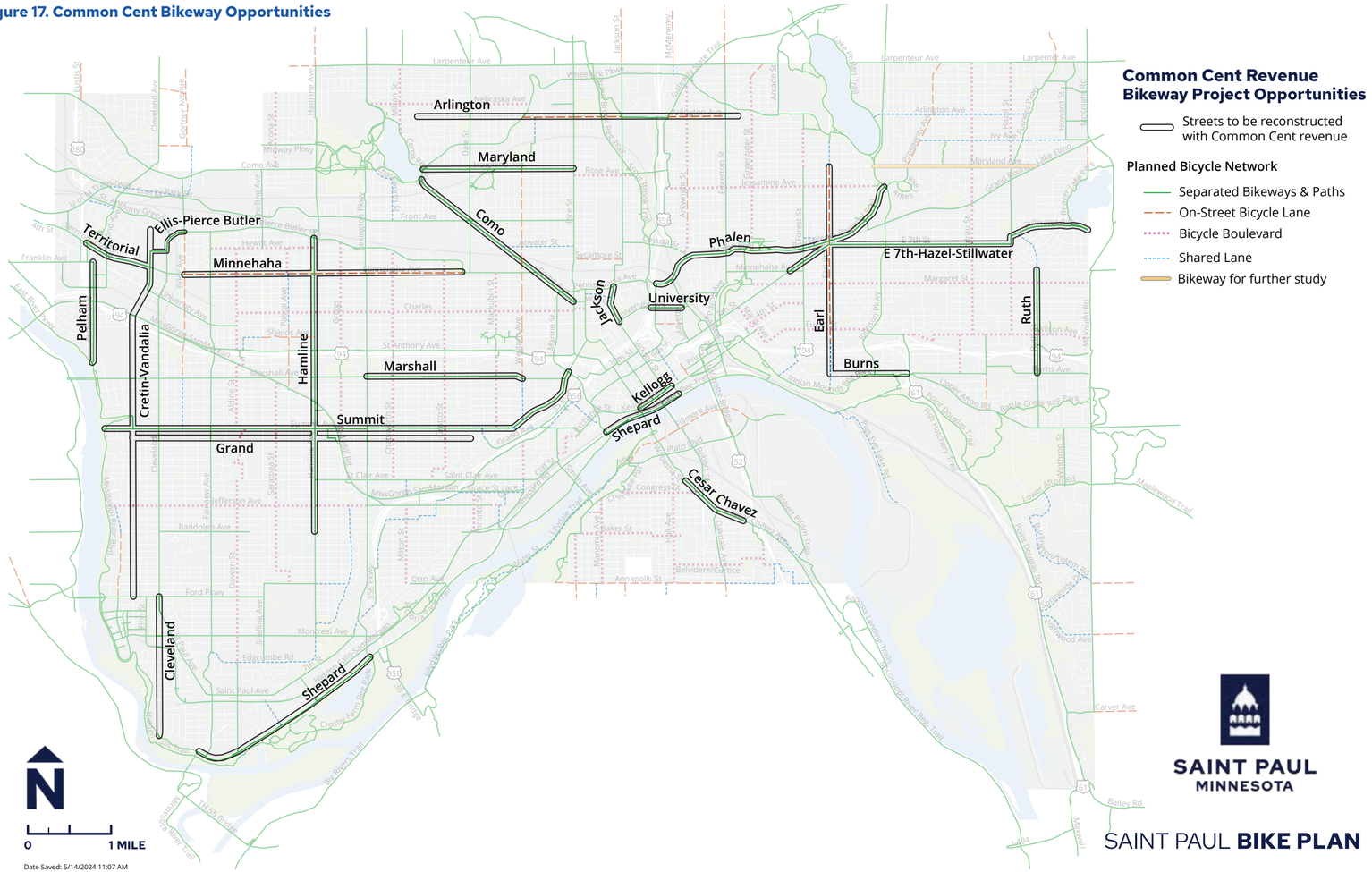
Figure 16. CCB and Grand Round Priorities



Build bikeways with Common Cent revenue

In November 2023, Saint Paul voters passed a historic ballot measure that authorized a one-percent sales tax (known as Common Cent), estimated to generate $1 billion over 20 years. Roughly three-quarters of that revenue will be invested in reconstructing streets. Many streets planned for reconstruction are also on the planned bicycle network and present an excellent and efficient opportunity to add new and improved bikeways as part of the reconstruction. See Figure 17 on page 93, which shows the overlap between Common Cent reconstruction projects and the planned bike network.

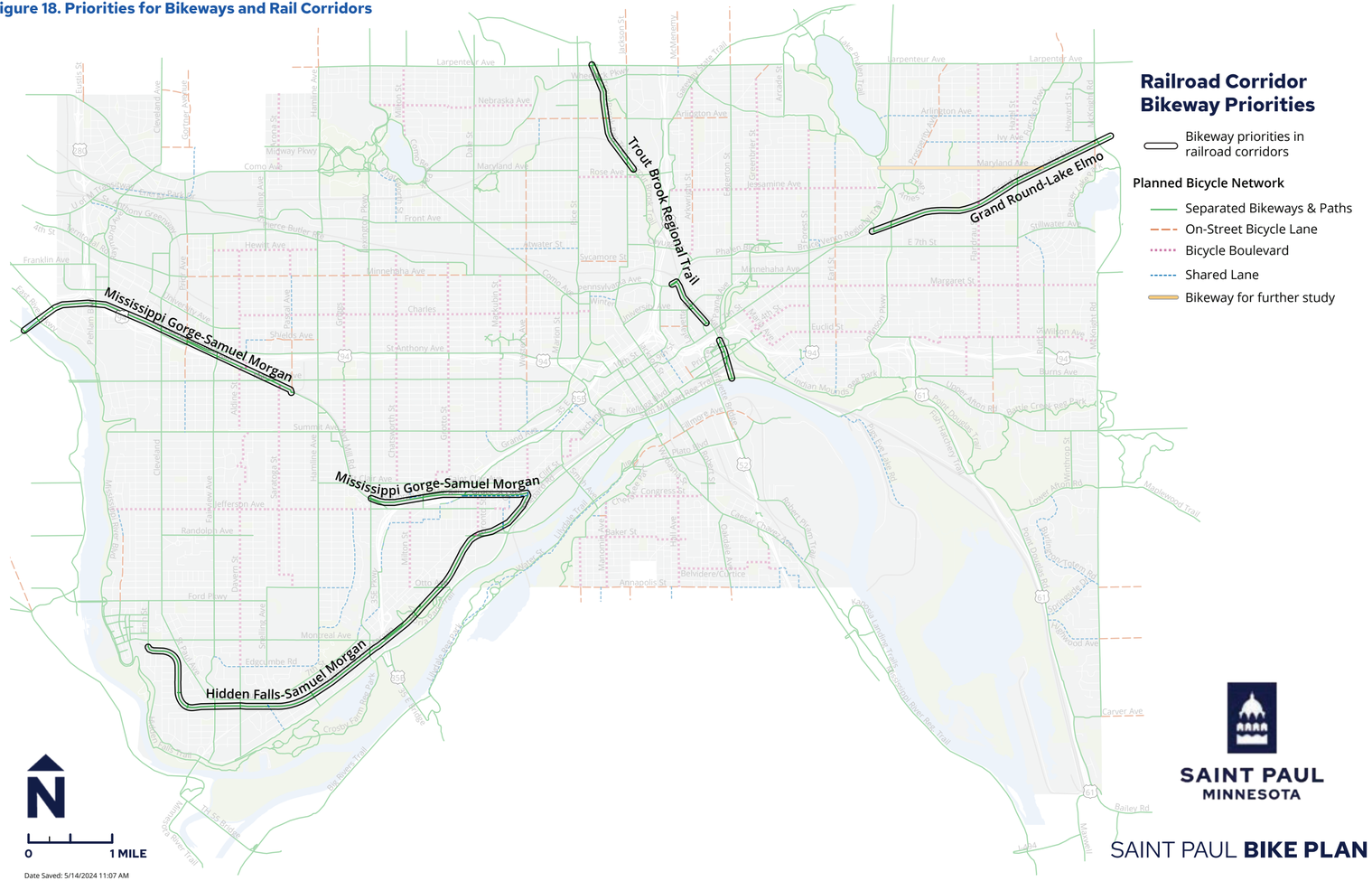
Figure 17. Common Cent Bikeway Opportunities



Work with railroad companies to build bikeways in or alongside rail corridors

Railroad corridors can make excellent bikeways. Sometimes called "rail-to-trail" or "rail-with-trail", they often have few or no crossings of surrounding streets, run at a flat grade alongside pleasant and natural landscapes, and connect destinations directly without the need to stop at signals or intersections. The Midtown Greenway in Minneapolis is a prime example of rail-with-trail. Ayd Mill Road in Saint Paul is another (first constructed with a road in the 1960s, and a shared use path in 2021). Saint Paul is home to many railroad corridors. The ones shown in Figure 18 on page 95 are planned regional trails on or alongside rail corridors and are a priority for implementation. Adding bikeways will take coordination with railroad companies, who own the land and often operate trains in the space.

Figure 18. Priorities for Bikeways and Rail Corridors



Pursue external funding to construct bikeways separate from ongoing street reconstructions

Ongoing and routine street reconstructions give the city opportunities to add bikeways along with other street projects (see "Street Reconstruction" on page 88). Federal and state grants are available to fund bikeway construction separate from ongoing street reconstructions. In this way, construction of the planned bike network is less dependent on other criteria used to prioritize street reconstructions (pavement and infrastructure quality, pedestrian realm needs). Much of the recent construction of the Grand Round and Capital City Bikeway was funded by the external federal Regional Solicitation program, administered by the Metropolitan Council. There are other grant programs, but they are less predictable than the every-other-year Regional Solicitation.

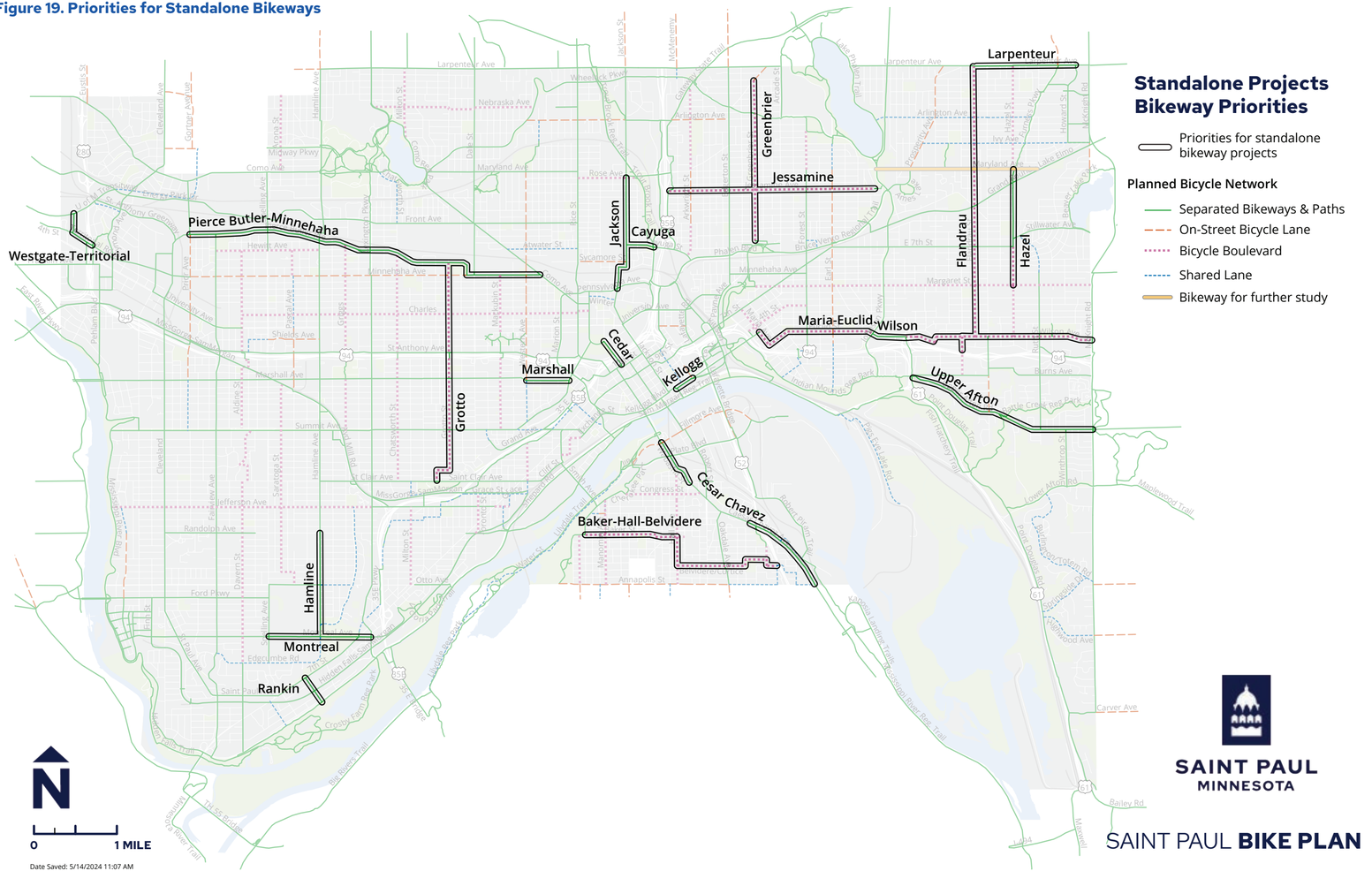
Figure 19 shows priorities for bikeways that could be pursued as standalone projects, funded mostly through competitive external funding from the federal and state governments (such as Regional Solicitation). The projects shown are included as priorities based on their:

- Support from the community
- Ability to increase safe bicycle connections
- Likelihood of being successful in a competitive statewide or nationwide grant process
- Ability to extend a bikeway constructed through another project (fill gaps)

Prioritizing Other Bikeways

Prioritization of the remaining bikeways throughout the city is a complex process with many variables and is not easily quantified. At this stage in the development of the bicycle network, opportunities that offer swift and cost effective implementation may rise to the top of the list. Opportunities to improve existing bikeways should be prioritized alongside opportunities to expand the bicycle network.

Figure 19. Priorities for Standalone Bikeways



Policy and Process Priorities

While the previous pages discuss building new and improving existing bikeways, the following section talks about things the city can do to more quickly expand the bike network and make biking easier.

Consult the planned bike network when choosing projects

The city uses criteria to determine where resources are invested in streets. In the past, the streets for investment were largely chosen based on street condition (need) and the amount of traffic they carried (demand). A street that was in bad shape but carried a lot of cars was prioritized for investment. In the future, the Department of Public Works will consider the needs of people walking, biking, rolling, and taking transit, in addition to the condition of and traffic on a street. This document and the planned bike network is the document to consult when choosing projects for capital funding.

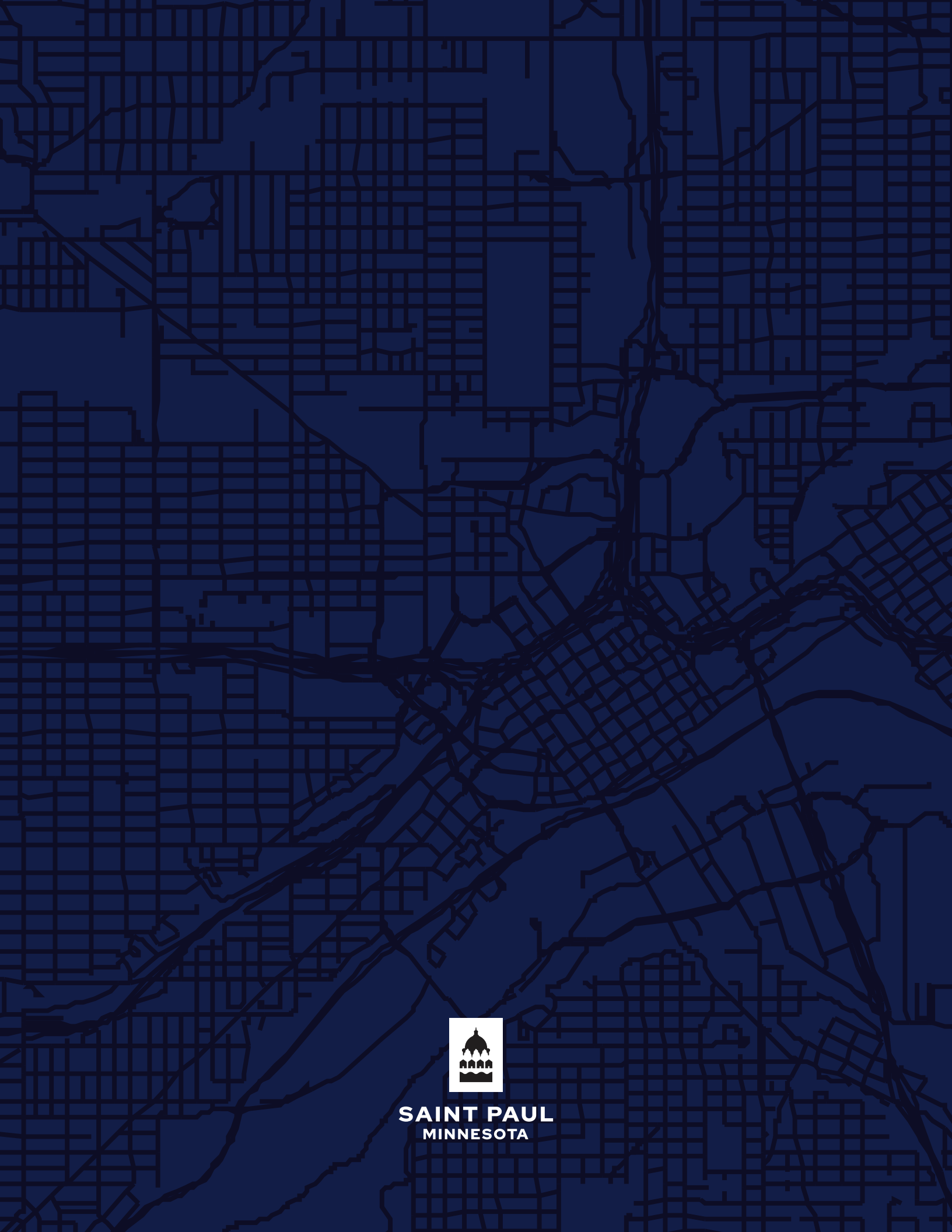
Plan for and fund maintenance and operation of the bike network

To encourage and increase biking, the city must not only pursue funding for construction of bikeways. Maintenance of the bike network must also be planned for and funded appropriately. Maintenance includes snow and ice management, surface condition, vegetation management, and signing, striping, and delineator replacement of the bike network. With some exceptions, bikeways have been built in Saint Paul without increased funding devoted to maintaining them. This means city maintenance staff are tasked with maintaining more city infrastructure with the same amount of funding. Going forward, budgets for bike network maintenance should be established sufficient to maintain and operate the network at an acceptable level. As the bike network is expanded with capital projects, the budget for bike network maintenance and operation should be expanded commensurately.

Determining specific bike network maintenance needs is outside the scope of this Bicycle Plan. Separate from this document, the city should create a strategy that plans for the maintenance of the bike network. This strategy could include priority bikeways for snow plowing and pavement improvements, estimates of needed funding, staffing, equipment, and coordination across partner agencies necessary for a high quality, year-round bike network.

Conduct preliminary analyses of bikeway corridors to be more competitive for external funding sources

Implementation Opportunities on page 88 describe how Saint Paul builds out the bike network. However, there are limited funds dedicated to the bike network, so the City often relies on external funding. These grants are highly competitive; the city is best positioned for success by performing preliminary analyses of any planned bike corridor in advance of an application. A preliminary analysis engages the community and stakeholders and builds consensus for the design of the bikeway – critical steps towards a competitive funding application for construction.


SAINT PAUL
MINNESOTA