

City of Saint Paul

CAPITAL CITY BIKEWAY: NETWORK STUDY AND DESIGN GUIDE



The Most Livable
City in America



ACKNOWLEDGEMENTS

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NOTE FROM THE MAYOR

Saint Paul is committed to creating vibrant places and spaces throughout the City, which is extremely evident in the creation of the Capital City Bikeway: Network and Design Guide.

The Capital City Bikeway is a blueprint for a system of off-street bicycle and pedestrian trails in downtown Saint Paul that connect residents and visitors to downtown attractions and the existing regional trail network, including the Gateway State Trail and the Samuel H. Morgan Regional Trail. When the bikeway is fully built, the majority of downtown Saint Paul will be within two or three blocks of the route.

This Guide is the result of great work by our project partners, including the Community Advisory Committee and members of the community. Together we have crafted a world-class standard for bikeway design that will usher in a new era of streets – streets that accommodate all users of the system, no matter their mode, age or ability.

I am thankful for this community's continued dedication and involvement as we have worked toward new initiatives like this one. It is because of your support and passion that we can make changes that benefit all in Saint Paul.

See you on the Bikeway!

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Coleman".

Mayor Chris Coleman

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EXECUTIVE SUMMARY

Initiated by the City of Saint Paul Bicycle Plan and funded by the 80 Vitality Initiative, the Capital City Bikeway is poised to become a world-class network of bikeways in the heart of downtown Saint Paul.

The goal of the **Capital City Bikeway: Network Study and Design Guide** (Guide) is to establish a network of bicycle facilities in the core of downtown that encourages bicycle ridership and economic development.

When implemented, the Capital City Bikeway will not only make bicycling safer for people of all ages and abilities in Saint Paul, but it will positively contribute to the overall experience and vitality of the City.

The Guide recommends routes and alignments for the downtown network based on community preference surveys and technical analyses of each proposed

route. The resulting network of major and minor routes will provide great access to the many businesses and institutions downtown (Figure A). The primary routes include:

- » Jackson Street
- » 9th Street /10th Street
- » St. Peter Street
- » Kellogg Boulevard

These routes fill a critical gap in the Saint Paul bicycle network and the regional trail system. The table below highlights the recommended routes, bikeway type, extents and location within the right-of-way.

The Guide provides direction on the elements of the Capital City Bikeway, including:

- » Bikeway design
- » Branding

- » Street furniture
- » Wayfinding
- » Landscaping
- » Public art

It draws from state of the art bikeway design and the Saint Paul Street Design Manual. The distinguishing feature of the Capital City Bikeway is a trail that is separated from motor vehicles and pedestrians by landscaped or paved buffers at sidewalk level. Minor routes feature on street bicycle facilities, buffered by striping and flexible posts.

The following chapters provide detailed information on the process, analyses, and design recommendations.

Street	Bikeway type	Route extents	Location along the street
Jackson Street	Major	University Avenue to Kellogg Boulevard	West side
9th Street/10th Street	Major	History Center driveway to Broadway Street	South side west of Cedar on 10th North side east of Cedar on 10th South side east of Jackson Street
St. Peter Street	Major	John Ireland Boulevard to Kellogg Boulevard	West side
Kellogg Boulevard	Major	John Ireland Boulevard to Sibley Street	North side
Minnesota Street	Minor	10th Street to Kellogg Boulevard	West side
Wacouta Street	Minor	9th Street to Kellogg Boulevard	TBD
Market Street	Minor	St. Peter Street to Kellogg Boulevard	TBD
4th Street	TBD	Washington Street to Broadway Street	TBD





INTRODUCTION AND BACKGROUND

In 2014, the City of Saint Paul established a “Vibrant Places and Spaces” vision, further illustrating its commitment to being the Most Livable City in America. At the core “Vibrant Places and Spaces” is about creating a wonderful public realm that is accessible and enjoyable for people of all ages, backgrounds, and abilities. Designing great streets that are safe and comfortable for all modes is just one way Saint Paul is investing in people, its economy, and its future.

Between 2011–2015, the City of Saint Paul (City) developed its current bicycle plan, adopted by the City Council in March 2015 as an addendum to the City’s Comprehensive Plan. The Saint Paul Bicycle Plan establishes a framework for the City to accomplish the bicycling goals identified in the Comprehensive Plan: increase the mode share of bicycling and establish a network of bikeways throughout the city.

The Guide was born out of the Saint Paul Bicycle Plan and identified in Chapter 6.0 (Expanding the Bicycle Network) as part of the City’s planned bicycle network. The primary objective of the City’s planned bicycle network is to provide safe and comfortable places for people of all ages and abilities to ride a bicycle. Section 9.5 of the Bicycle Plan states that

“the development of a network of bicycle facilities in the downtown core is the top priority for encouraging bicycle ridership and economic development in Saint Paul”.

The objectives of the Guide are to: 1) determine the best routes for the downtown bikeway network; 2) determine potential connections to downtown from the broader regional bikeway system; 3) develop initial design concepts for the recommended bikeway network alignments; and 4) implement the first phase of the downtown bikeway network by designing and constructing a two-way protected bikeway on Jackson Street from 11th Street to Shepard Road. The broader goals of the project are to help enhance the vitality of downtown, improve the prospects for continued economic development, and make downtown a more attractive place for all.

The project will create a transformational change to downtown Saint Paul by encouraging activity in the streets, enhancing the vitality of sidewalks and public spaces, and stimulating investment and fostering economic development. The Capital City Bikeway is modeled off of the Indianapolis Cultural Trail, which saw an increase of \$1 billion in property values within

one block of the trail between 2008 and 2014.¹ Locally, the Midtown Greenway in the City of Minneapolis sparked \$200 million in residential development after 5.5 miles of protected bikeway were built. “Per acre, the apartment buildings along the Greenway generate more than six times the tax revenue of big-box developments nearby.”²

Providing high quality infrastructure improvements along the Capital City Bikeway will provide great opportunities for development by local business owners and an increase in local spending within downtown Saint Paul, similar to other cities around the country who have made these investments.

This document provides information on developing the Capital City Bikeway network, and design guidance for immediate implementation of interim bikeway treatments and the phased implementation of the ultimate Capital City Bikeway vision through street and bridge reconstruction.

1. <http://indyculturaltrail.org.s3.amazonaws.com/wp-content/uploads/2015/07/15-C02-CulturalTrail-Assessment.pdf>

2. Fisher, Thomas, “Streetscapes: Midtown Greenway spurs urban development, especially in Uptown”, <http://m.startribune.com/variety/303081591.html?section=/>

COMMUNITY ENGAGEMENT PROCESS

The City met with community groups, business owners, property owners, and the broader public throughout the duration of the project. Community engagement included two week-long workshops, two online surveys, pop-up events, and monthly meetings with the project's community advisory committee (CAC), technical advisory committee (TAC) comprised of city staff, and policy advisory committee (PAC) comprised of city staff leadership. The input gathered from these engagement efforts helped inform this Guide and the design of Jackson Street, which is being reconstructed in 2016-2017.

Community Advisory Committee (CAC)

A community advisory committee (CAC) was appointed by the Mayor in early May 2015. The committee consists of 26 individuals who live and/or work downtown, represent downtown businesses, or represent community groups in Saint Paul. The CAC met throughout the planning and design process to discuss bikeway route alternatives, bikeway design elements, and brand identity.

Discovery Workshop

A four day "discovery workshop" was held in May 2015. The purpose of the workshop was to hear from stakeholders, community members, and City staff regarding the desires, concerns, likes, and dislikes related to establishing a downtown bikeway network.

The workshop week began with a site tour of the possible alignments of the Capital City Bikeway and was followed by a facilitated public workshop. The workshop included background information about the project, project goals, objectives, scope, and schedule. Workshop attendees participated in a small group activity focused on identifying desires, needs, and concerns.

The design team held individual stakeholder interviews with community leaders, downtown business/property owners, cultural institution representatives, local organizations, City staff, and elected officials. Information from these interviews helped to create

criteria to evaluate alignment alternatives for the downtown bikeway network and create starter ideas for what may be possible along the alternative bikeway routes. An online survey supplemented the community input received on the materials and starter ideas presented at the discovery workshop.

A comprehensive summary of the discovery workshop, can be found in Appendix A.

Design Workshop

In June 2015, the City facilitated a four day design workshop. The purpose of the workshop was to work with stakeholders to refine the Capital City Bikeway



network, and generate initial design concepts and layouts for the Capital City Bikeway routes and the Jackson Street reconstruction project. Conceptual designs were developed for Jackson Street, Kellogg Boulevard, St. Peter Street, and 9th Street/10th Street. The design team emphasized the design and analysis of Jackson Street since it is the first segment of the Capital City Bikeway to be built.

The design team hosted “open studio” hours for the public, CAC, TAC, PAC and City staff to provide input and react to the designs. In addition, focus group meetings were held between City staff, stakeholders and the design team. Focus group meeting topics included

urban design, stormwater management, traffic, public art, and historic and cultural resources.

On the final day of the design workshop, the design team prepared preliminary design concepts and bikeway alignment recommendations to share with the community at an evening public open house. At the event, community members were able to interact with staff and share their reactions to concept layouts for Jackson Street and Kellogg Boulevard, public art, paving, plantings, and branding.

A more comprehensive summary of the design workshop can be found in Appendix B.

Pop-Up Events

The design team held four pop-up events to gather additional input on the project. Events were held at Mears Park, Pedro Park, and Rondo Days, including a bike ride at Rondo Days with the NiceRide Neighborhood Group and Major Taylor Bicycling Club. During the pop-up events participants provided input on the project including suggestions for the name of the bikeway, location of the bikeway routes, and how the City could encourage more people to bike.



BIKEWAY NETWORK STUDY

The Saint Paul Bicycle Plan identified corridors for further study to create a downtown bikeway network. The study evaluation map from the Bicycle Plan was used as a starting point, and was further refined based on community feedback, context, and technical design evaluation.

Route evaluation criteria were developed based on feedback from the community and stakeholders, as well as the design team's expertise in the planning and design of bikeways. Open house participants reviewed and ranked a list of evaluation criteria based on what was most important to them.

All potential alignments were reviewed based on these criteria. It became apparent that certain alignments have greater potential to satisfy many of the criteria, and they were identified as the major bikeway routes of the Capital City Bikeway. Additionally, some other routes were identified as important connectors, but were identified as minor bikeways.

Major bikeways of the Capital City Bikeway are a connected network of sidewalk level, protected bikeways. These bikeways are physically separated from vehicles by a concrete curb and landscaping where possible. Major bikeways are anticipated to attract the largest number of users, and form the backbone of the bikeway network in downtown Saint Paul. Minor bikeways are on-street treatments, such as buffered bike lanes.

Community Preference Route Evaluation Criteria

Listed in rank order

1. NEIGHBORHOOD/TRAIL CONNECTIVITY

Provides connections to regional trails and neighborhoods outside of downtown.

Good =* Direct connection into or out of downtown to surrounding neighborhoods or regional trails at both ends of the street segment

Fair = Indirect connection into or out of downtown to surrounding neighborhoods or regional trails at one end of the street segment

Poor = No connection into or out of downtown to surrounding neighborhoods or regional trails (i.e. interstate ramps at both ends of the street)

2. MICRO/CULTURAL CONNECTIVITY

Provides connections to parks, businesses, cultural resources such as museums, theaters, libraries, etc., and destinations throughout downtown.

Good = Route goes by numerous parks, businesses, restaurants, and cultural resources

Fair = Route goes by some parks, businesses, restaurants, and cultural resources

Poor = Route goes by few or no parks, businesses, restaurants, and cultural resources

3. LEVEL OF COMFORT

The comfort and ease of use felt by people who use the route. Designs that accommodates children and inexperienced or concerned bicycle riders.

Good = Low perceived roadway speeds, low traffic volumes, potential for increased buffer space between bicyclists and motor vehicles

Fair = Low perceived roadway speeds, medium traffic volumes, some potential for increased buffer space between bicyclists and motor vehicles

Poor = High perceived roadway speeds, high traffic volumes, limited space for buffer between bicyclists and motor vehicles

* Color assigned to **Good**, **Fair**, **Poor** relates to Figure 3, 5, and 7 on pages 10, 12, and 14 respectively

Community Preference Route Evaluation Criteria (continued)

4. LEGIBILITY & WAYFINDING

The route is straight, easy to find, and easy to navigate. Provides appropriate wayfinding signs and branding.

Good = Direct route, few crossings from one side of the street to another

Fair = Fairly direct route, some crossings from one side of the street to another

Poor = Indirect, not intuitive route, numerous crossings from one side of the street to another

5. TRANSIT CONFLICTS

Bikeway route could conflict with transit loading and unloading.

Good = No transit conflicts

Fair = Some transit conflicts

Poor = Numerous transit conflicts

6. PLACEMAKING OPPORTUNITIES

Opportunities to provide new public spaces potentially with grass, trees, or other vegetation.

Good = Numerous wide buffer and pedestrian zone widths to add landscaping and street furnishings, and existing buildings set back from existing right-of-way

Fair = Some wide buffer and pedestrian zone widths to add landscaping and street furnishings, existing buildings set back from existing right-of-way

Poor = Few or no wide buffer and pedestrian zone widths to add landscaping and street furnishings, and existing building set back from existing right-of-way

7. ECONOMIC DEVELOPMENT POTENTIAL

Routes located along existing businesses and areas available for redevelopment.

Good = Numerous existing surface lots (redevelopment potential), buildings set back from existing right-of-way, street level access, and street level retail businesses or restaurants

Fair = Some existing surface lots (redevelopment potential), buildings set back from existing right-of-way, street level access, and street level retail businesses or restaurants

Poor = Few or no existing surface lots (redevelopment potential), buildings set back from existing right-of-way, street level access, and street level retail businesses or restaurants

8. PRESERVE ON-STREET PARKING

Maintain as much on-street parking as possible, maximize the number and presence of on-street parking spaces.

Good = Most or all on-street parking preserved

Fair = Some on-street parking preserved

Poor = No on-street parking preserved

9. CONTROL OF RIGHT-OF-WAY

The City of Saint Paul owns the right-of-way needed to construct a bikeway.

Good = City of Saint Paul owns all of the right-of-way

Fair = City of Saint Paul owns a majority of the right-of-way

Poor = City of Saint Paul owns little to no right-of-way

10. HISTORIC SITES & REQUIREMENTS

Proximity to historic sites, districts, and impacts on those districts from the routes. Information only.

11. TRAFFIC VOLUMES

Existing traffic volumes along the route.

Good = Less than 7,000 motor vehicles per day

Fair = 7,000 to 10,000 motor vehicles per day

Poor = Greater than 10,000 motor vehicles per day

Based on public review and technical evaluation during the discovery workshop in May 2015, the major bikeway routes that moved forward into the conceptual engineering phase of the project include: Jackson Street, 9th Street/10th Street, St. Peter Street, and Kellogg Boulevard (Figure 1).

In order to meet the broader goals of this project - enhance the vitality of downtown, improve the prospects for continued economic development, and making a downtown a more attractive place for all users - motor vehicle space will need to be reallocated for other purposes (e.g., a travel lane or parking lane). Reallocating some motor vehicle space will create shorter and safer pedestrian crossings, increase opportunities for landscaping, safely accommodate bicycles on a two-way, sidewalk level protected bikeway, and in some instances calm traffic. On-street parking is also a desired amenity downtown. In areas where parking can be removed and there is adequate on- or off-street parking, existing parking space should be allocated to the bikeway, sidewalk, or buffer space. If additional space is still needed to accommodate all street uses, the buffer between the bikeway and motor vehicles should be narrowed. Only after that and when absolutely necessary should existing landscape buffer areas or sidewalk widths be narrowed to gain space along the corridor to accommodate all users.

The priorities for reallocating space to accommodate

an urban trail are in the following order:

1. Remove or narrow a travel lane when traffic modeling allows.
2. Eliminate on-street parking.
3. Narrow buffer between bikeway and motor vehicles.
4. Narrow existing sidewalks or landscape areas.



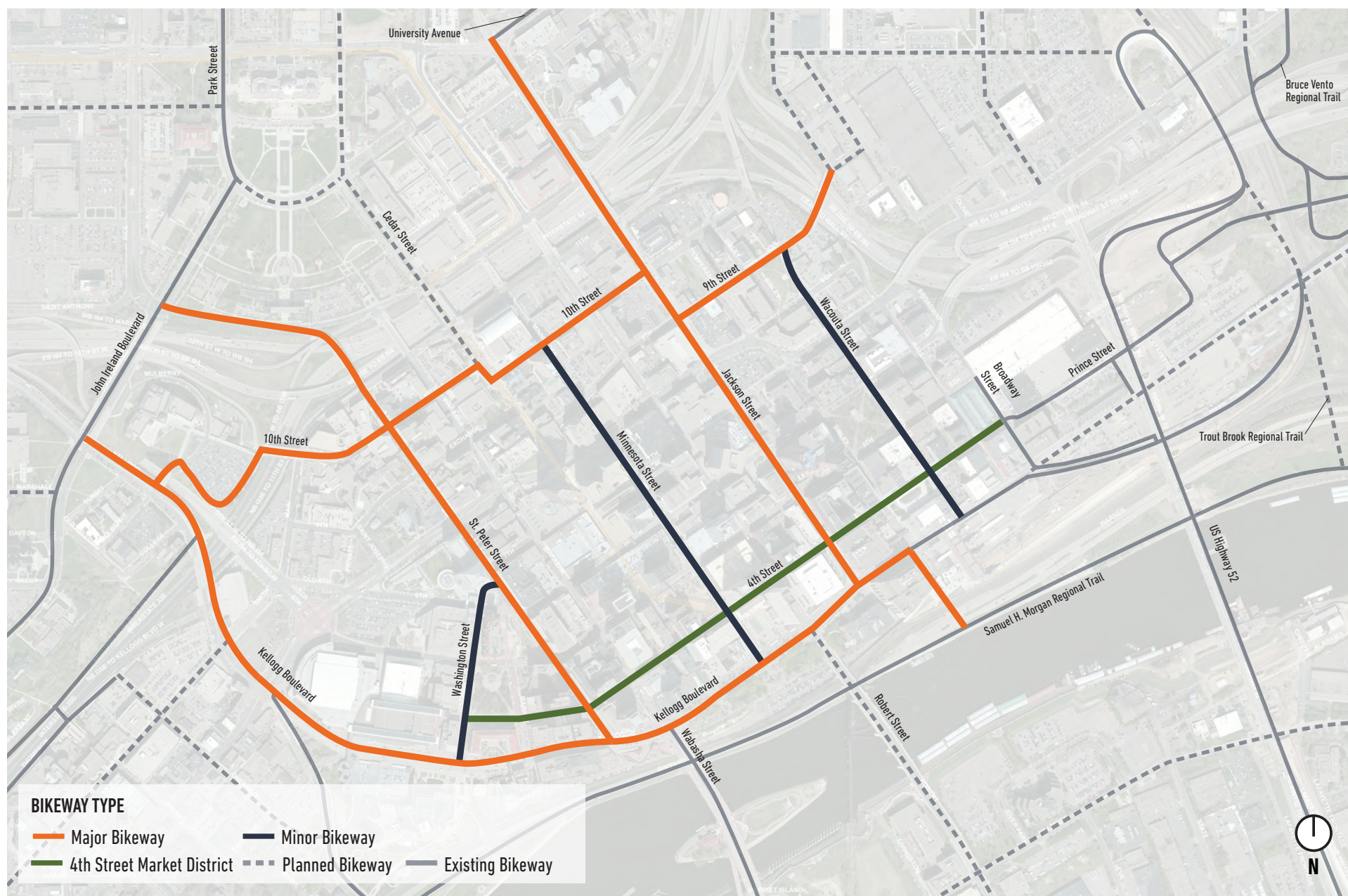


Figure 1: Capital City Bikeway Network Map.

Jackson Street

The Saint Paul Bicycle Plan identified Jackson Street as the first segment of the Capital City Bikeway to be implemented because it was a high priority segment for street reconstruction and connects the Gateway State Trail to the Samuel Morgan Regional Trail. In addition to Jackson Street, the bikeway will be constructed on a one block segment of Kellogg Boulevard between Jackson Street and Sibley Street, and on Sibley Street from Kellogg Boulevard to Warner Road. Reconstruction of Jackson Street began in summer 2016 and is scheduled to be completed in 2017.

Bikeway Location on Jackson Street

The bikeway will be on the west side of Jackson Street between 11th Street and Kellogg Boulevard. The Saint Paul Bicycle Plan recommended the bikeway on the west side of the street, and the community engagement and technical analysis confirmed that **the west side is the most suitable location for the bikeway.**

Figure 2 shows the evaluation of community priorities and decision criteria for a bikeway on the west side and the east side of Jackson Street.



Existing conditions on Jackson Street.

Jackson Street

Community Priorities	Decision Criteria	West Side	East Side
Connectivity	Macro Connectivity: Connections to overall bicycle network	Provides connection to Sam Morgan Trail via Kellogg Blvd and Sibley St Need to cross street to access Gateway Trail extension	Provides connection to Sam Morgan Trail via Kellogg Blvd and Sibley St Provides more direct connection to Gateway Trail extension
	Micro Connectivity: Connections to key destinations and neighborhoods	Need to cross street to Lowertown	Need to cross street to Downtown Core
Level of Comfort	Driveways: Increases conflicts between bicyclists and motor vehicles	9 existing driveways	10 existing driveways
	Bikeway Facility: Proposed type	Sidewalk level, 2-way bikeway	Sidewalk level, 2-way bikeway
Legibility & Wayfinding	Directness / Complex Intersections: Straightforward route that reduces conflicts with motor vehicles at intersections	Entire facility can be located on the west side since there are no complex intersections on the west side to avoid	The facility must cross from the east to the west side at 10 th St and 4 th St to avoid complex intersections on the east side at 11 th St, 7 th St, and Kellogg Blvd
Preserve On-Street Parking	Parking Spaces: Maximize the number of on-street parking spaces	31 parking spaces preserved	33 parking spaces preserved
	Loading Zones: Maintain loading zones where feasible for business and residential use	1 loading zone preserved	1 loading zone preserved
	Other Zones (e.g. police parking, parking for people with disabilities): Maintain other zones where feasible to retain functionality	N/A	N/A
Placemaking Opportunities	Placemaking: Opportunities to provide new public spaces or utilize existing plazas	Opportunities for placemaking on private plazas where building setbacks are greater Opportunity at Kellogg Blvd in location of free flow right turn lane removal Private plazas at 375 Jackson, Securian	Opportunities for placemaking on private plazas where building setbacks are greater, but limited opportunity within Lowertown Historic District (designated) for greater building setback Opportunity at 7th St in location of free flow right turn lane removal Private plaza at Cray Plaza
	Green Space: Opportunities to provide trees or other vegetation	Tree, shrub, and perennial opportunities	Tree, shrub, and perennial opportunities with Heritage Preservation Commission approval within Lowertown Historic District
Transit Conflicts	Bus Stops: Increases conflicts between pedestrians and bicyclists	None	None
Economic Development Potential	Surface Parking Lots: Redevelopment potential	1 surface parking lot facing Jackson St	3 continuous surface lots facing Jackson St
	Building Setbacks: Opportunities for activating street level land uses	Federal Courts Building, Securian Center	Swor & Gatto, Embassy Suites
	Street Level Land Use: Opportunities to stop and enjoy street level businesses	Commercial/office, parking, retail/restaurant	Commercial/office, residential/hotel, parking

Figure 2: Evaluation matrix showing the community priorities and decision criteria for a bikeway on the east side or west side of Jackson Street.

9th Street / 10th Street

Street Alternatives

Three alternatives for the east-west bikeway segment on the north side of downtown were analyzed and considered: 9th Street/Exchange Street, 10th Street, and 11th Street. Figure 3 describes some of the impacts, differences, pros, and cons of each option. A description of each route evaluation criteria is provided on pages 4-5. **The recommended route alignment is a combination of 9th Street/10th Street.** This route was chosen due to higher comfort level, the

greatest economic development potential, and better connectivity.

The bikeway is recommended to begin from the west at Mulberry Street and Kellogg Boulevard, head east through the Minnesota History Center along the parking lot, connecting to 10th Street. The bikeway is recommended to remain on 10th Street to Jackson Street, then moves one block south, continuing east on 9th Street. The bikeway would cross the 9th Street Bridge over I-94 and then connect to the planned bike lanes on Broadway Street.

Bikeway Location on 9th Street/10th Street

The bikeway along 9th Street/10th Street is recommended to be located primarily on the south side of the street.

Figure 4 compares various community priorities and decision criteria* for a bikeway on the north side and the south side of 9th Street/10th Street.

The bikeway along 9th Street/10th Street will largely be located on the south side of the street. It will begin on the south side of 10th Street between the History Center

Evaluation Criteria	10 th Street	11 th Street	9 th Street/Exchange Street
Neighborhood/Trail Connectivity	Yes	No	Yes
Micro/Cultural Connectivity	Yes	No	Yes
Level of Comfort	High	Low	High
Legibility/Wayfinding	Medium	High	Low
Transit Conflicts	No	No	No
Placemaking Opportunities	Yes	Yes	Yes
Economic Development Potential	Existing	Long-Term	Short-Term
Preserve On-Street Parking	No	Limited	No
Control of Right-of-Way	No (History Center, History Theatre)	No (N Side)	No
Historic Sites & Requirements	None	Capitol Area Architectural and Planning Board approval needed	None
Traffic Volumes (2014 MnDOT)	4,200-6,600	8,500-10,600	1,650-2,200

Figure 3: Evaluation criteria for determining which street(s) to locate the bikeway.

*Described in detail on page 4-5 ■ Good ■ Fair ■ Poor Information Only

and Cedar Street to create a connection to the History Center parking lot without crossing the road. To the east of Cedar Street, the bikeway is recommended to be located on the north side of 10th Street until Jackson

Street to better accommodate fire truck access in and out of the fire station located on the north side of 10th Street. The bikeway would then connect with the Jackson Street bikeway for one block, and continue

east on 9th Street on the south side of the roadway, reducing conflicts with motor vehicles accessing the I-35E on ramp at Broadway Street, and providing easier access for bicyclists to Wacouta Commons Park.

9th Street / 10th Street

Community Priorities	Decision Criteria	North Side	South Side
Connectivity	Macro Connectivity: Connections to overall bicycle network	Provides connection to Jackson St and St. Peter St bikeways	Provides connection to Jackson St and St. Peter St bikeways
	Micro Connectivity: Connections to key destinations and neighborhoods	Need to cross street to downtown core	Need to cross street to Capitol Area
Level of Comfort	Driveways: Increases conflicts between bicyclists and motor vehicles	West of Cedar St: 9 existing driveways (2 hospital access, 1 large parking ramp)	West of Cedar St: 6 existing driveways (1 ambulance/ emergency room access)
		Cedar St to Jackson St: 8 existing driveways (3 fire station driveways)	Cedar St to Jackson St: 7 existing driveways
		East of Jackson St: 4 existing driveways	East of Jackson St: 5 existing driveways
	Bikeway Facility: Proposed type	Sidewalk level, 2-way bikeway	Sidewalk level, 2-way bikeway
Legibility & Wayfinding	Directness / Complex Intersections: Straightforward route that reduces conflicts with motor vehicles at intersections	More conflicts with 10 th St/Cedar St intersection and LRT station	Fewer conflicts with 10 th St/Cedar St intersection and LRT station
Preserve-On Street Parking	Parking Spaces: Maximize the number of on-street parking spaces	No parking spaces preserved	No parking spaces preserved
	Loading Zones: Maintain loading zones where feasible for business and residential use	No loading zones preserved	No loading zones preserved
	Other Zones (e.g. police parking, parking for people with disabilities): Maintain other zones where feasible to retain functionality	N/A	N/A
Placemaking Opportunities	Placemaking: Opportunities to provide new public spaces or utilize existing plazas	More existing plazas Private plazas at St. Joseph's Hospital, Ramsey County Public Health Building, Elmer L. Anderson Human Services Building, The Penfield, Lund's	More existing parks Private plaza at History Theatre
	Green Space: Opportunities to provide trees or other vegetation	Limited width for green space	Limited width for green space
Transit Conflicts	Bus Stops: Increases conflicts between pedestrians and bicyclists	Existing stop at NE corner of 10 th St/Cedar St, relocate to the north along Cedar St	No existing bus stops
Economic Development Potential	Surface Parking Lots: Redevelopment potential	3 surface parking lots	4 surface parking lots
	Building Setbacks: Opportunities for activating street level land uses	Ramsey County Public Health Center, Elmer L. Anderson Human Services Building, Penfield Apartments, Lund's grocery	Gallery Tower Apartments, The History Theater, Pedro Park
	Street Level Land Use: Opportunities to stop and enjoy street level businesses	Civil/cultural/institutional, residential/hotel, retail/restaurant	Civil/cultural/institutional, park/plaza/courtyard, parking, residential/hotel

Figure 4: Evaluation matrix showing the community priorities and decision criteria for a bikeway on the north side and the south side of 9th Street and 10th Street.

St. Peter Street

Street Alternatives

Two routes were studied and considered for the north-south segment of the Capital City Bikeway on the west side of downtown: St. Peter Street and Wabasha Street. **The bikeway is recommended to be located on St. Peter Street, from John Ireland Boulevard to Kellogg Boulevard.** St. Peter Street was ultimately selected as the preferred alignment due to Wabasha Street's high existing traffic volumes and design restrictions associated with the I-94 on/off ramp

intersection at 12th Street.

Figure 5 describes some of the impacts, differences, pros, and cons of locating the major bikeway on St. Peter Street or Wabasha Street. A description of each route evaluation criteria is provided on pages 4-5.

Bikeway Location on St. Peter Street

The bikeway is recommended to be located on the west side of St. Peter Street. The primary reason for choosing the west side is to enhance vibrant café spaces and other pedestrian friendly features on the east side, which already has more existing café and retail spaces that will benefit from wider sidewalks

and larger buffer areas. The bikeway on the west of the roadway will reduce conflicts with pedestrians and street cafés and will provide better connections to parks and plazas along the street. Figure 6 compares community priorities and design criteria* for a bikeway on the west side and the east side of St. Peter Street.

Evaluation Criteria	St. Peter Street	Wabasha Street
Neighborhood/Trail Connectivity	Yes	Yes
Micro/Cultural Connectivity	Yes	Yes
Level of Comfort	High	Medium
Legibility/Wayfinding	High	High
Transit Conflicts	No	Yes (Bus)
Placemaking Opportunities	Yes	Yes
Economic Development Potential	Existing established businesses	Existing established businesses
Preserve On-Street Parking	1 Side (Option A) None (Option B)	1 Side
Control of Right-Of-Way	Yes	Yes
Historic Sites & Requirements	Rice Park Historic District & Sites	Saint Paul Urban Renewal Historic District & Buildings
Traffic Volumes (2014 MnDOT)	2,850-6,200	6,200-9,500

Figure 5: Evaluation criteria for determining which street(s) to locate the bikeway.

*Described in detail on page 4-5 ■ Good ■ Fair ■ Poor ■ Information Only

St. Peter Street

Community Priorities	Decision Criteria	West Side	East Side
Connectivity	Macro Connectivity: Connections to overall bicycle network	Provides connection to north side of downtown core	Provides connection to north side of downtown core Awkward connection to John Ireland Boulevard
	Micro Connectivity: Connections to key destinations and neighborhoods	Saint Paul Hotel, Landmark Plaza, Farmer's Market, Mickey's Diner, St. Joseph's Hospital, Restaurants northwest quadrant of 7 th St	Ramsey County Courthouse/Saint Paul City Hall, Juvenile & Family Justice Center, Capital District, Restaurants – Sakura, Pazzaluna, Kincaids, Meritage, Great Waters
Level of Comfort	Driveways: Increases conflicts between bicyclists and motor vehicles	3 existing driveways	5 existing driveways
	Bikeway Facility: Proposed type	Sidewalk level, 2-way bikeway	Sidewalk level, 2-way bikeway
Legibility & Wayfinding	Directness / Complex Intersections: Straightforward route that reduces conflicts with motor vehicles at intersections	Entire facility can be located on the west side	Entire facility can be located on the east side Sight lines may be of concern
Preserve On-Street Parking	Parking Spaces: Maximize the number of on-street parking spaces	Option A: 45 parking spaces preserved Option B: No parking spaces preserved	Option A: 65 parking spaces preserved Option B: No parking spaces preserved
	Loading Zones: Maintain loading zones where feasible for business and residential use	2 loading zones preserved	No loading zones preserved
	Other Zones (e.g. police parking, parking for people with disabilities): Maintain other zones where feasible to retain functionality	1 hospital loading zone preserved 1 police parking zone preserved	1 hospital loading zone preserved No police parking zone preserved
Placemaking Opportunities	Placemaking: Opportunities to provide new public spaces or utilize existing plazas	Opportunities for placemaking on private and public plazas where building setbacks are greater Opportunity to retain existing and add additional street café space on east side of road Private plazas at St. Joseph's Hospital, EcoLab Plaza, Landmark Towers, Wold Building Public plaza at Hamm Plaza	Limited opportunity within Capitol Area District Private plazas at State Public Housing Agency, Gallery Building, Ramsey County Juvenile & Family Justice Center, 7th Place, Lawson Commons
	Green Space: Opportunities to provide trees or other vegetation	Greater building setbacks Café space has opportunity for landscaping	Street cafés: limit available width
Transit Conflicts	Bus Stops: Increases conflicts between pedestrians and bicyclists	None	None
Economic Development Potential	Surface Parking Lots: Redevelopment potential	1 surface parking lot	No surface parking lots
	Building Setbacks: Opportunities for activating street level land uses	St. Joseph's Hospital, Hamm Plaza, EcoLab, Landmark Plaza, Landmark Towers	St. Paul Public Housing Agency, Ramsey County Courthouse
	Street Level Land Use: Opportunities to stop and enjoy street level businesses	Civil/cultural/institution, commercial/office, park/plaza/courtyard, Opportunity to retain existing and add additional street café space on east side of road	Retail/restaurant, civic/cultural/institutional

Figure 6: Evaluation matrix showing the community priorities and decision criteria for a bikeway on the west side and the east side of St. Peter Street.

Kellogg Boulevard & 4th Street Market District

Street Alternatives

Kellogg Boulevard is the recommended east-west bikeway segment on the south side of downtown.

The bikeway is recommended to follow Kellogg Boulevard from John Ireland Boulevard to Sibley Street.

Along with Kellogg Boulevard, the design team also analyzed 4th and 5th Streets as potential streets for the major bikeway. The option of locating the bikeway on 5th Street was eliminated due to existing transit conflicts, daily traffic volumes, and a lower level of comfort. Figure 7 describes some of the impacts, differences, pros, and cons of locating the major bikeway on Kellogg Boulevard, 4th Street, or 5th Street. A

description of each route evaluation criteria is provided on pages 4-5.

Bikeway Location on Kellogg Boulevard

The feasibility of locating the bikeway on the north/east and south/west sides of Kellogg Boulevard were evaluated. A two-way protected bikeway on the south side was evaluated due to the proximity of the Science

Evaluation Criteria	Kellogg Boulevard	4 th Street	5 th Street
Neighborhood/Trail Connectivity	Yes	Yes	Yes
Micro/Cultural Connectivity	Yes	Yes	Yes
Level of Comfort	Medium	High	Medium
Legibility/Wayfinding	High	High	Medium
Transit Conflicts	No	Yes (LRT)	Yes (Bus)
Placemaking Opportunities	Yes	Yes	Maybe
Economic Development Potential	Short and Long-Term	Short-Term	Short-Term
Preserve On-Street Parking	1 Side	Future Study Needed	1 Side
Control of Right-of-Way	Yes - North side Right-of-way needed for fully protected facility on south side	Yes	Yes
Historic Sites & Requirements	Rice Park Historic District, Saint Paul Urban Renewal Historic District, Lowertown Historic District & Buildings	Rice Park Historic District, Saint Paul Urban Renewal Historic District, Lowertown Historic District & Buildings	Rice Park Historic District, Saint Paul Urban Renewal Historic District, & Lowertown Historic District
Traffic Volumes (2014 MnDOT)	16,200-26,700	1,700-2,250	3,650-16,000

Figure 7: Evaluation criteria for determining which street(s) to locate the bikeway.

*Described in detail on page 4-5 ■ Good ■ Fair ■ Poor Information Only

Museum of Minnesota and Kellogg Mall Park. However, pinch points due to the bridge structures limit the ability to provide a continuous two-way sidewalk level bikeway similar to the rest of the Capital City Bikeway network. Additionally, modifying bridge structures to increase the right-of-way width is impractical.

Because of the significant challenges related to locating the bikeway on the south side of Kellogg Boulevard, a north side, two-way protected bikeway concept from 7th Street to Jackson Street was developed. A north side protected bikeway has more street crossings; however, it also allows for a wider bikeway, additional green space (depending on existing utilities), and separated bicycle and pedestrian facilities along the majority of the corridor. It connects to the shared trail segment of the Capital City Bikeway on the north side of Kellogg Boulevard at Jackson Street. After reviewing both options, **the recommendation is to locate the bikeway on the east/north side of Kellogg Boulevard.**

Figure 8 compares various community priorities and design criteria* for a bikeway on the west/south side versus the east/north side of Kellogg Boulevard.

4th Street Market District

4th Street is recommended to be a significant biking and walking corridor in downtown that will complement the Capital City Bikeway. Public preference

was split between 4th Street and Kellogg Boulevard. Implementing both routes is recommended, though each will have a distinct character. Establishing a working team is recommended to further develop the 4th Street Market District concept. Additional study is needed on 4th Street to evaluate operations, parking ramp access, and potential impacts of future rail alignments. The vision for 4th Street is a “shared street” between transit, bicyclists, pedestrians, and motor vehicles. The concept of a shared street emerged

during the discovery workshop in May 2015, and local business owners led a visioning process to explore the idea and published the results in November 2015. More information on the conceptual design recommendation for 4th Street is described in the Implementation Plan section. Figure 7 describes some of the impacts, differences, pros, and cons between locating the bikeway on Kellogg Boulevard, 4th Street, and 5th Street.



Existing conditions on Kellogg Boulevard.

Kellogg Boulevard

Community Priorities	Decision Criteria	South/West Side	North/East Side
Connectivity	Macro Connectivity: Connections to overall bicycle network	North of 7 th St: Provides connection to Summit Ave and east out of downtown via planned bikeways	North of 7 th St: Provides connection to Summit Ave and east out of downtown via planned bikeways
		South of 7 th St: Connects via Eagle Pkwy to Sam Morgan Trail	South of 7 th St: Connects to future 10 th St bikeway, provides alternative connections to downtown core
	Micro Connectivity: Connections to key destinations and neighborhoods	North of 7 th St: Hospital, restaurants on W 7 th St	North of 7 th St: History Center, Cleveland Circle Area and redevelopment, Xcel Energy Center
		South of 7 th St: Science Museum, River Balcony, Future Ramsey County jail site redevelopment, Custom House	South of 7 th St: RiverCentre, Central Library, City Hall and County Courthouse
Level of Comfort	Driveways: Increases conflicts between bicyclists and motor vehicles	North of 7 th St: 1 ramp	North of 7 th St: 0
		South of 7 th St: 1 ramp, 1 loading zone	South of 7 th St: 5 ramp driveways, 3 pullout loading zones, 3 regular loading zones, 1 driveway
	Bikeway Facility: Proposed type	Sidewalk level, 2-way bikeway	Sidewalk level, 2-way bikeway
		Shared use path near Exchange Street Street level, 2-way bikeway on bridge structures with flexible posts	Shared use path between Kellogg Blvd and Sibley St
Legibility & Wayfinding	Directness / Complex Intersections: Straightforward route that reduces conflicts with motor vehicles at intersections	North of 7 th St: Facility must cross complex intersections at the I-35E on and off ramps (likely could not protect bike movement from turning movement)	North of 7 th St: Bicyclists along Summit Ave would cross Kellogg Blvd to the bikeway
		South of 7 th St: Skewed intersection at Eagle Pkwy and entrance to 2 nd St	South of 7 th St: Overall, more intersections to cross and coordinate with signals
Preserve On- Street Parking	Parking Spaces: Maximize the number of on-street parking spaces	71 parking spaces preserved	42 parking spaces preserved
	Loading Zones: Maintain loading zones where feasible for business and residential use	4 loading zones preserved	4 loading zones preserved
	Other Zones (e.g. police parking, parking for people with disabilities): Maintain other zones where feasible to retain functionality	2 bus loading zones preserved 1 parking zone for people with disabilities preserved	2 bus loading zones preserved 1 parking zone for people with disabilities preserved
Placemaking Opportunities	Placemaking: Opportunities to provide new public spaces or utilize existing plazas	North of 7 th St: Limited within right-of-way	North of 7 th St: Cleveland Circle Redevelopment Private Plaza at History Center
		South of 7 th St: Open space by Science Museum, River Balcony/Park area, Ramsey County jail site redevelopment Private plazas at Science Museum of Minnesota, Ramsey County Government Center East	South of 7 th St: Limited within right-of-way Private plazas at Xcel Energy Center, RiverCentre, James J Hill Reference Library, City Hall and County Courthouse, Kellogg Square, Federal Courts Building
		North of 7 th St: Existing green field south of Summit Ave	North of 7 th St: Green space by History Center
	Green Space: Opportunities to provide trees or other vegetation	South of 7 th St: Greater offset to buildings	South of 7 th St: Existing green space by Central Library
Transit Conflicts	Bus Stops: Increases conflicts between pedestrians and bicyclists	Existing stop at SW corner of Kellogg Blvd/Mulberry St Existing stop at SW corner of Kellogg Blvd/Minnesota St	Existing stop at SE corner of Kellogg Blvd/Mulberry St, relocate to NE corner Existing stop at NE corner of Kellogg Blvd/Minnesota St
Economic Development Potential	Surface Parking Lots: Redevelopment potential	North of 7 th St: 2 surface parking lots	North of 7 th St: 1 surface parking lot
	Building Setbacks: Opportunities for activating street level land uses	Summit Park, Apartments, Science Museum of Minnesota, Ramsey County Government Center West, Kellogg Mall, Ramsey County Government Center East	History Center, Xcel Energy Center, RiverCentre, Saint Paul Central Library, Ramsey County Courthouse, Federal Courts Building
	Street Level Land Use: Opportunities to stop and enjoy street level businesses	Civil/cultural/institutional, parking, park/plaza/courtyard	Civil/cultural/institutional, commercial/office, parking, residential/hotel

Figure 8: Evaluation matrix showing the community priorities and decision criteria for a bikeway on the south/west and north/east Kellogg Boulevard.

BIKEWAY DESIGN GUIDE

This section provides guidance for the design and implementation of the Capital City Bikeway.

Capital City Bikeway Design Guidelines

There are national guidelines, statewide guidelines, and local guidelines that need to be accounted for in the overall design of a street corridor. All of the streets being considered for the Capital City Bikeway are currently Minnesota Department of Transportation (MnDOT) Municipal State Aid (MSA) routes with minimum dimension requirements that may only be modified by obtaining a variance.



The Saint Paul Street Design Manual, MnDOT State Aid Manual, MnDOT Bikeway Facility Design Manual, MN Manual on Uniform Traffic Control Devices (MN MUTCD), American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, National Association of City Transportation Officials (NACTO) Urban Bikeway

Design Guide, Massachusetts DOT Separated Bike Lane Planning and Design Guide provided minimum and recommended design guidance for the Capital City Bikeway. In general, the minimum dimensions outlined in these documents provide basic function and safety.

Many of these design guidelines and minimum requirements are recommendations rather than





requirements. Increasing bike lane widths, sidewalk widths, and buffer widths will provide more comfortable facilities for all users.

The following figures provide the recommended design guidelines for the Capital City Bikeway. Engineering judgment should be used in all scenarios, decision making documented, and proper design exceptions obtained from appropriate oversight agencies if dimensions less than the recommended design guidelines are chosen. Additional information on the recommended design guidelines for the Capital City Bikeway are in Appendix C.

Alignment and Cross Section Design	Design Guidelines
Protected Bikeway Width	10 feet plus 1 foot flush curb on both sides desired, 8 feet minimum
Travel Lane Width	11 feet (thru lane) with 1 foot curb reaction*, 10 feet (turn lane) with 1 foot curb reaction *
	*May require MnDOT State Aid variance
Sidewalk Width	8 feet minimum with additional buffer space between pedestrians and bicyclists where feasible
Motor Vehicle Parking Lane Width	8 feet*
	*May require MnDOT State Aid variance
Design Speed	Bicycles: 10 MPH
	Motor Vehicles: 30 MPH
Alignment	Provides adequate separation
	Safe crossings
	Connects well to other facilities
	Manages user speeds
Separation From Motor Vehicles & Pedestrians	Color, texture, grade changes, physical elements
Buffer Between Bicyclists & Motor Vehicles	3 feet desired between bikeway and parking lane, 2 feet minimum between bikeway and face of curb
Buffer Between Bicyclists & Pedestrians	6 feet desired, 1 foot minimum, 4 feet minimum for trees to be implemented
	Maximize where feasible between bikeway and sidewalk
Bikeway Clearances	1 foot from horizontal elements (e.g. furnishings)
	1 foot shy distance from curb gutters

Figure 9: Design guidelines matrix for cross section width and design.

Intersection / Crossing Design and Materials	Design Guidelines
Intersection Design Considerations	Use geometry to manage speed, maximize sight lines, delineate mixing zones
Sight Triangles	10-20 feet at driveways and intersections
Stopping Sight Distances	Based on roadway and protected bikeway design speeds (30 MPH and 10 MPH, respectively)
Parking Restrictions	30 feet from signalized intersections, 20 feet from stop controlled intersections, 10 feet from driveways
Pavement Markings and Signage	Required: Capital City Bikeway logo + bicycle lane symbol + arrow
	Advised: Green pavement, yield markings, skip striping, regulatory signs at driveways for motor vehicles to yield to bicyclists and pedestrians
Transit Stop Accommodation	4 feet minimum buffer for bus loading and unloading adjacent to bikeway
Protected Intersections	Include corner protection islands to provide safety to bicyclists and pedestrians from turning motor vehicles. May utilize mountable curb to be forgiving for maintenance vehicles.
Bikeway Profile	Ramp bicycle profile down over 10 feet desired prior to pedestrian crosswalks to assist with ADA requirements and encourage proper bicyclist and pedestrian access, ramp bicycle profile down over 6 feet minimum
Design Vehicle	WB-40 utilizing part of adjacent lanes in the same travel direction, WB-62 at MnDOT intersections utilizing part of adjacent lanes in the same travel direction
Signals	Bicycle signals to be used along corridors. Consider protected turn phases (together with motor vehicle thru) at intersections with greater than 100 vehicles per hour turning (from both directions combined). For protected turns, flashing yellow arrows may be necessary to allow pedestrians to finish crossing wide intersections. Flashing yellow turn arrows may be utilized for permissive turns.
Bikeway Material	Porous asphalt or asphalt
Sidewalk Material	Concrete
Buffer Material	Landscaping, stormwater BMPs, street furniture, pavers, lighting
Lighting	G-series 1 globe and Futura
Pergola Features	Located at key gateways to the protected bikeway network and downtown core

Figure 10: Design guidelines matrix for intersection/crossing design and materials.

Capital City Bikeway Experience

The Capital City Bikeway will be a connected network of protected bikeways throughout the heart of downtown Saint Paul. When implemented, the Capital City Bikeway will be an enjoyable, comfortable, and safe experience that appeals to a wide range of people. Design standards described in the previous section are essential to creating a consistent experience on this new bikeway system. Similarly, the elements of the bikeway such as wayfinding, site furnishings, and plantings contribute to a legible, memorable experience unique to the Capital City Bikeway.

Design Approach

The Capital City Bikeway was first envisioned in the Saint Paul Bicycle Plan as a “development of a unique off-street trail network throughout the downtown area, making downtown a hub in the bicycling network designed to accommodate slower bicyclists and to encourage new or casual cyclists to visit downtown”.

This section is organized into four main parts:

- » Logos and Identity
- » Hardscape Palette
- » Landscape Palette
- » Public Art



Logos and Identity

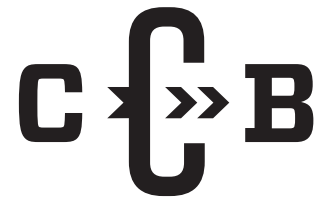
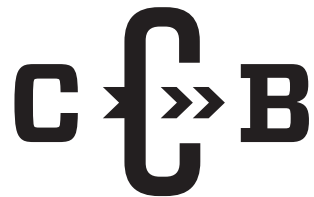
The Capital City Bikeway will become an identifying feature of downtown Saint Paul's streets. The logo and identity system honors Saint Paul's character and respects existing signage systems found throughout downtown. The intent was to create a simple yet iconic logo that was grounded, proud, friendly, and honest – characteristics that Saint Paul embodies. The result is an identity system that can be used in wayfinding, applied to site furnishings, and integrated into future public art installations.

GROUNDLED | PROUD | FRIENDLY | HONEST

PRIMARY LOGOS



SECONDARY LOGOS



CAPITAL CITY
BIKEWAY



CAPITAL CITY
BIKEWAY

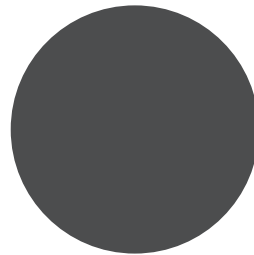


CAPITAL CITY
BIKEWAY

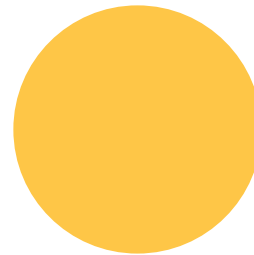
REVERSED

PRIMARY COLORS

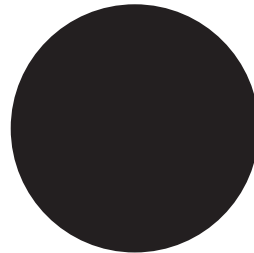
FOR USE IN PRIMARY BRAND APPLICATIONS: ANNOUNCEMENTS, POSTERS, SIGNAGE. YELLOW WITH GRAY IS TO BE USED FOR PRIMARY LOGO MARK IN SIGNAGE.



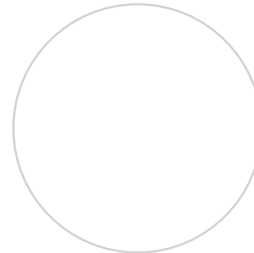
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C - 41
M - 28
Y - 25
K - 65



PANTONE #123
C - 0
M - 19
Y - 89
K - 0



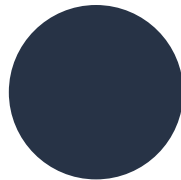
PROCESS BLACK
C - 0
M - 0
Y - 0
K - 100



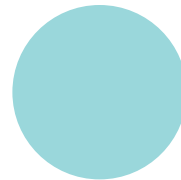
PROCESS WHITE
C - 0
M - 0
Y - 0
K - 0

SECONDARY COLORS

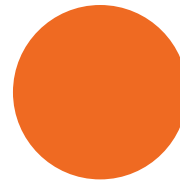
COMPLEMENTARY COLORS: USE FOR MAPS OR SMALLER ELEMENTS WHEN CALL-OUTS ARE NEEDED



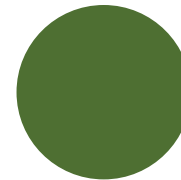
PANTONE #2188



PANTONE #629



PANTONE #159



PANTONE #2280

PRIMARY FONT

(DISPLAY TYPE, LOGO & HEADLINE USE)

VITESSE BOLD

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

1234567890.,&?!

SECONDARY FONT

(BODY COPY & DESCRIPTOR USE)

DIN NEXT LT PRO CONDENSED

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

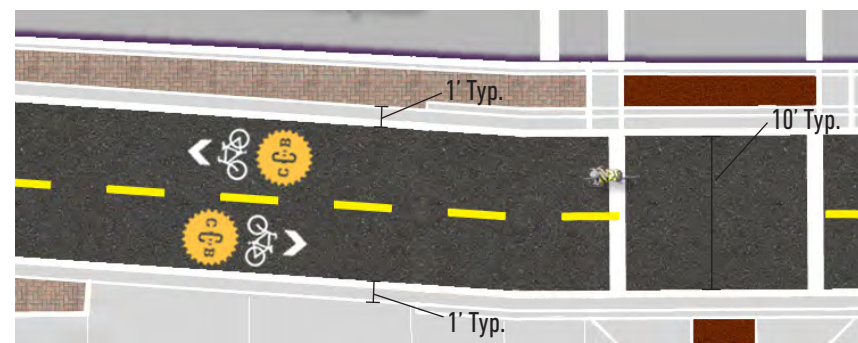
1234567890.,&?!

Hardscape Palette

Materials also contribute to the brand experience of the Capital City Bikeway and downtown Saint Paul. This section describes the recommended materials and typical dimensions for all elements, excluding motor vehicle travel lanes.

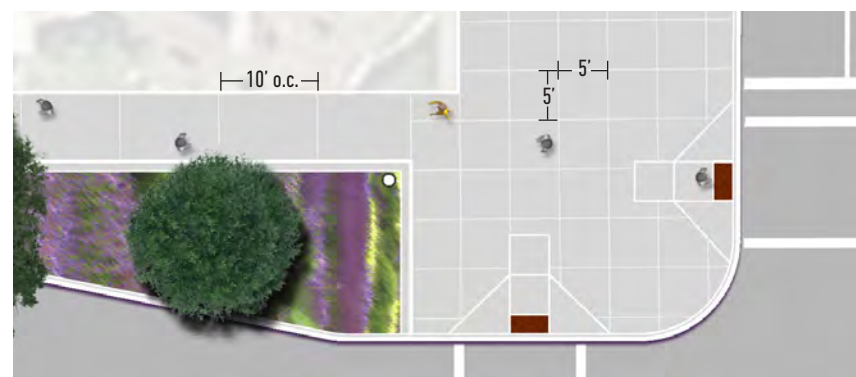
Bikeway

The two-way bikeway should be 12 feet in width with a 10 foot asphalt trail and 1 foot flush curb on each side. Where feasible porous asphalt should be considered. It is a stormwater best management practice, allowing water to infiltrate locally. It also can help with bikeway maintenance and bikeability in the winter months because precipitation is less likely to sit on the surface of the porous asphalt.



Sidewalks and Intersection Zones

Sidewalks of the Capital City Bikeway are concrete, similar to many other walkways in downtown Saint Paul. Where possible, sidewalks should be a minimum of 8 feet though 12 feet is preferred. Concrete sidewalk scoring along the walkway should be 10 feet on center, saw cut joint and expansion joints where needed. At intersections, the walkways should be concrete, with a 5 foot x 5 foot scoring pattern, saw cut joint and expansion joints where needed. The change in pattern alerts pedestrians that they are entering a different area.



Parking Areas

In areas where parking is allowed, the curb zone should be a minimum of 2 feet wide and 3 feet where feasible. This provides space for any necessary signage and provides people needed space to get in and out of motor vehicles.



Protected Intersections

People bicycling, walking and driving motor vehicles inevitably cross paths at intersections. Intersections with separated bikeways should be designed to minimize bicyclist exposure to motorized traffic and should minimize the speed differential at the points where travel movements intersect. The goal is to provide clear messages regarding right-of-way to all users moving through the intersection in conjunction with geometric features that result in higher compliance where users are expected to yield.

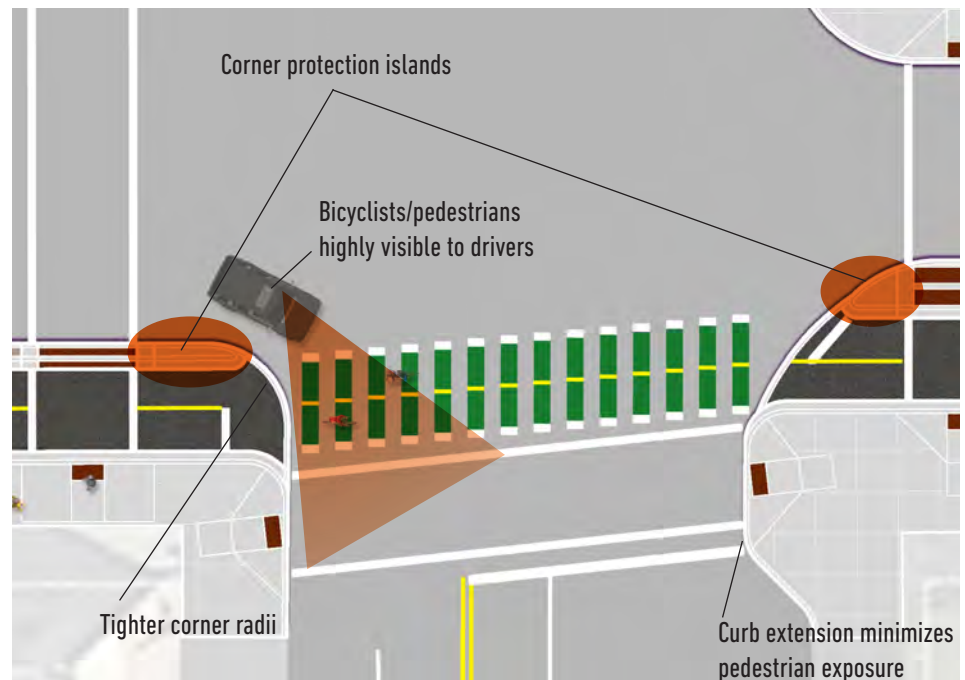
The following principles should be applied to the design of Capital City Bikeway intersections to maximize safety and comfort to all users:

- » Minimize exposure to conflicts,
- » Reduce speeds at conflict points,
- » Communicate right-of-way priority; and
- » Provide adequate sight distances.

Typical downtown curb radii are 10 feet, which is the desired curb radii for corner protection islands. Smaller radii encourage turning motor vehicles to slow as they encounter conflicts with pedestrians and bicyclists. Corner protection islands should be a minimum 6 feet in length to accommodate at least one bicyclist queuing in the space provided beyond the pedestrian crosswalk, 10 or more feet is desired.

Pedestrian walking alignments should be considered for crosswalk placement to reduce the need to walk around a corner of a building to access the crosswalk. Pulling the crosswalk back from the intersection allows bicyclist and pedestrian conflicts to occur separately from motor vehicle conflicts, discourages bicyclists from queuing in the crosswalk area, and provides bicyclists a built-in head start across the intersection to reduce conflicts between bicyclists and motor vehicles. If a minimum queue length of 6 feet is not feasible, the pedestrian crosswalk should

be moved toward the intersection and the corner protection island taken to the edge of the crosswalk marking, though this is not desirable for slowing vehicles and minimizing pedestrian and bicyclist exposure to motor vehicles. Minimum width of a corner protection island is 2 feet, though 4 feet or more is desirable. The curb radius between bicyclists and pedestrians should be 5 feet. The graphic shows how the principles are applied to the Capital City Bikeway through corner protection islands (curb extensions) for people bicycling and walking to minimize exposure to motor vehicles, minimize curb radii to reduce motor vehicle speeds and improve sight lines for drivers, and communicate right-of-way priority for people walking and bicycling with pavement markings.



Seating

Seating is another element of the furnishing zone that helps define the space, and provides places for rest and gathering. Public seating should be provided at a minimum every $\frac{1}{4}$ mile along the corridor and adjacent to buildings with active street level land uses. The availability of existing seating areas should be considered in proposing new ones. For example, on Jackson Street, seating areas are provided between 11th Street and 10th Street, at 7th Street, at 7th Place, between 5th Street and 4th Street and near Kellogg Boulevard, a little less than $\frac{1}{4}$ mile apart. There is additional public seating between 4th and 5th near the 325 Jackson building. Careful attention to the materials and style of the benches adds to the user experience of the Capital City Bikeway. Benches may have backs or be backless. They should be large enough to comfortably sit two to three people. Six foot lengths should be considered where possible, with 4 foot lengths in constrained environments. The materials also need to be vandal proof, not easily scratched and easily cleaned. The Victor Stanley Streetsites collection FBF-53 provide both elegant design and functional materials for seating along the Capital City Bikeway. Skate inhibiting mounts are available. The backless bench allows people to sit facing the way they want.



Victor Stanley Bench FBF-53



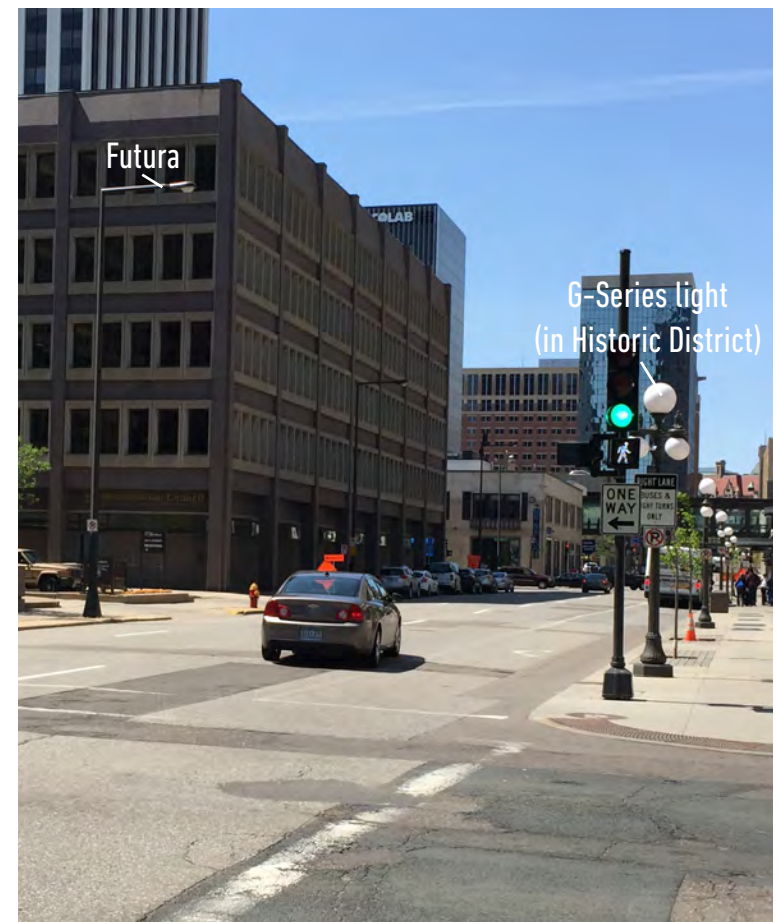
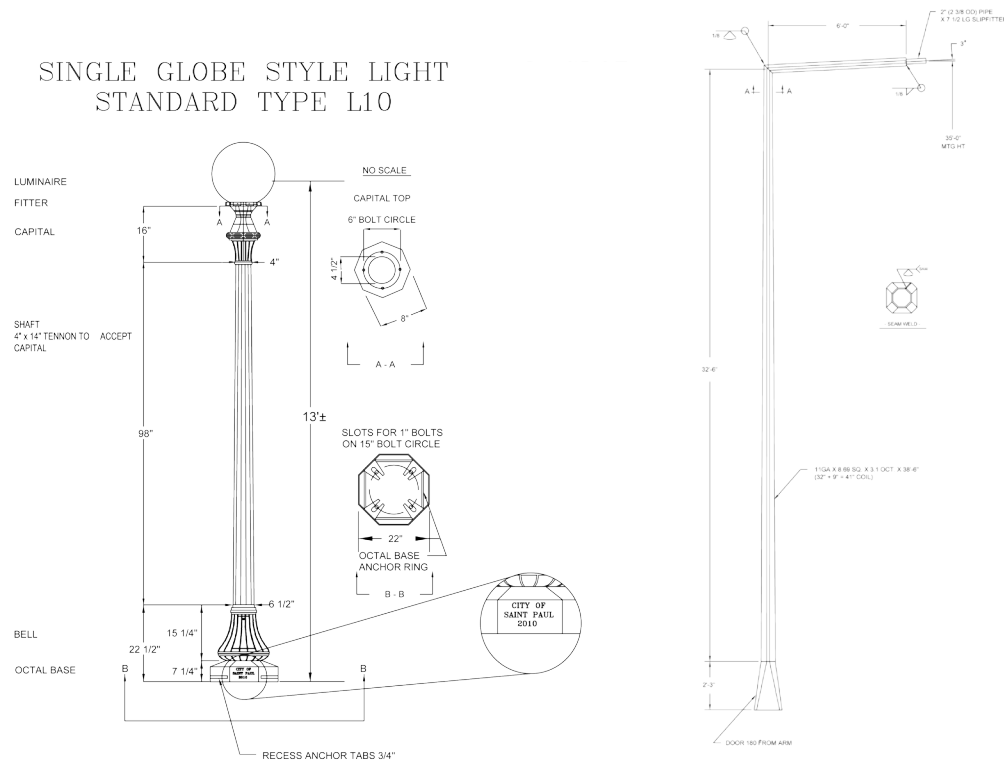
Café Seating

To accommodate a sidewalk café, the minimum frontage zone is 6 feet wide and the minimum boulevard/furnishing zone is 8 feet wide. Future segments of the Capital City Bikeway should include café seating where appropriate and feasible.



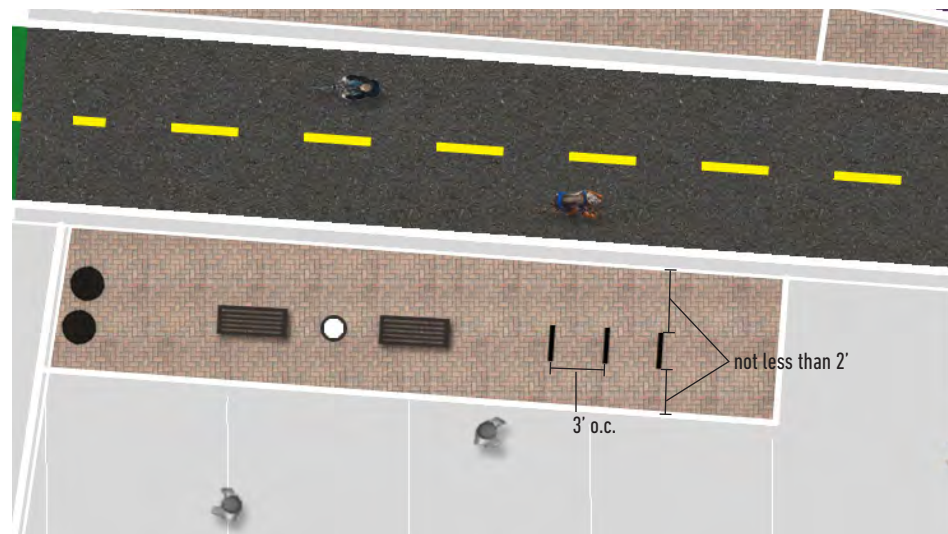
Street Lighting

The G-Series one globe pedestrian scale street lights are the City standard in downtown. In the Lowertown Historic District, the G-Series five globe is used at intersections, and the three globe along the length of a block with contributing buildings. The G-Series is the Capital City Bikeway standard. Typically, there should be 5-6 single globes per block, the first light set back approximately 30' from intersection, and the remaining spaced as equidistant as possible. The motor vehicle scale lighting, the Futura, is located at every intersection and midblock.



Bike Parking

Bicycle parking will be important to encourage people to stop and experience all that downtown Saint Paul has to offer. It should be placed at highly visible locations near destinations or future development locations on all segments of the Capital City Bikeway. It should be placed no closer than 2 feet from the edge of the bikeway or a pedestrian walkway. Fixtures should be placed no closer than 3 feet on center to adequately accommodate two bikes per fixture. Where possible, the hitch sleeve should be placed on parking meter signs as is typical on other streets in downtown Saint Paul. The Capital City Bikeway logo should be integrated into the hoop or hitch fixture.



Receptacles

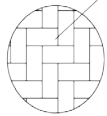
Trash and recycling receptacles should be placed wherever people may sit and congregate. The function of the receptacles must be simple from the user's standpoint, and for the maintenance crew emptying them. The materials for the receptacles should match and align with the other furnishing elements. They should also be placed in accessible locations where users are likely already stopped and at key destinations and gathering areas. Trash and recycling receptacles along the Capital City Bikeway should be consistent with City standards.

Recycling receptacle color



Pavers

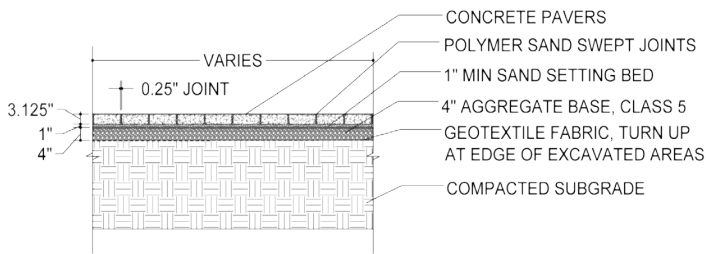
In the furnishing zones and seating areas outside the Lowertown Historic District, concrete pavers are used. This alerts people that this is a different area and to expect furnishings (e.g., seating, receptacles, parking meters). Pavers should be Anchor Block Holland Autumn Mix, or approved equivalent and placed in a herringbone pattern.



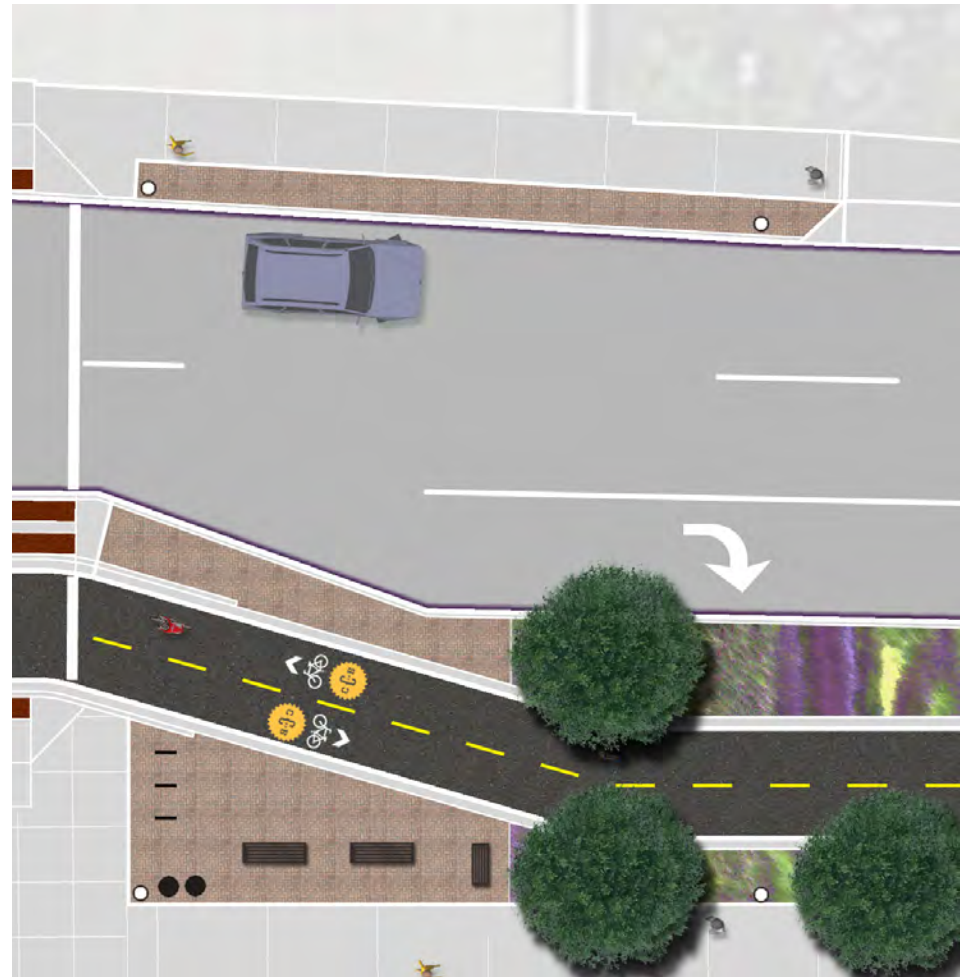
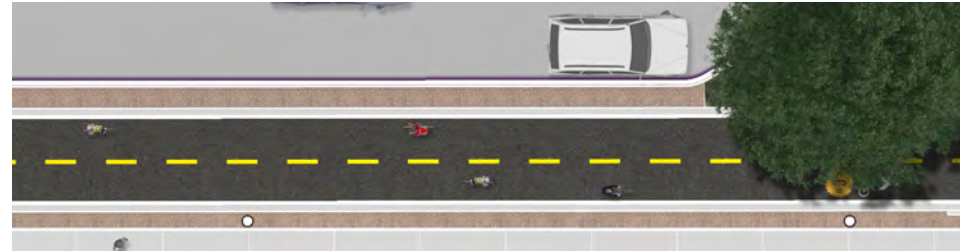
HERRINGBONE PATTERN FOR ALL OTHER PAVER LOCATIONS. SEE LANDSCAPING PLANS FOR PATTERN DIRECTION. JOINTS TO BE 90° AND PERPENDICULAR TO CURB EDGE, TYPICAL.

NOTE:

1. CONCRETE PAVER TO HAVE FINE AGGREGATE FACE WITH SMOOTH TEXTURE



L08 CONCRETE PAVERS
NTS



Wayfinding

Wayfinding assures people they are on the correct route and helps users reach their desired destinations. The Capital City Bikeway wayfinding system complements existing signage systems in the city, though is primarily focused on helping bicyclists navigate the Capital City Bikeway routes and connect to other key local, regional, and state bicycle routes. The signage within the wayfinding system meets the Manual of Uniform Traffic Control Devices (MUTCD) guidelines and is guided by the identity system described earlier.

Wayfinding Locations

Capital City Bikeway signage should be placed at key points along each corridor. Directional signage should be placed at major decision points such as bikeway intersections, or directing bicyclists to connecting routes (e.g., Samuel Morgan Regional Trail, Gateway State Trail). Signage indicating bikeway and sidewalk locations should be placed at every intersection to clearly direct people where to bike and where to walk. Pavement markings with the Capital City Bikeway logo should also be placed at intersections further distinguishing the bikeway from the sidewalk.

Figure 11 shows major and minor wayfinding locations and the following pages describe the approach to major and minor wayfinding types and locations. Major wayfinding sites are located where two major Capital City Bikeway routes intersect. Minor wayfinding sites are located at intersections of major and minor bikeways. 4th Street should also have wayfinding at intersections with major and minor bikeways, but the design of these signs should be completed with the 4th Street Market Street design process.

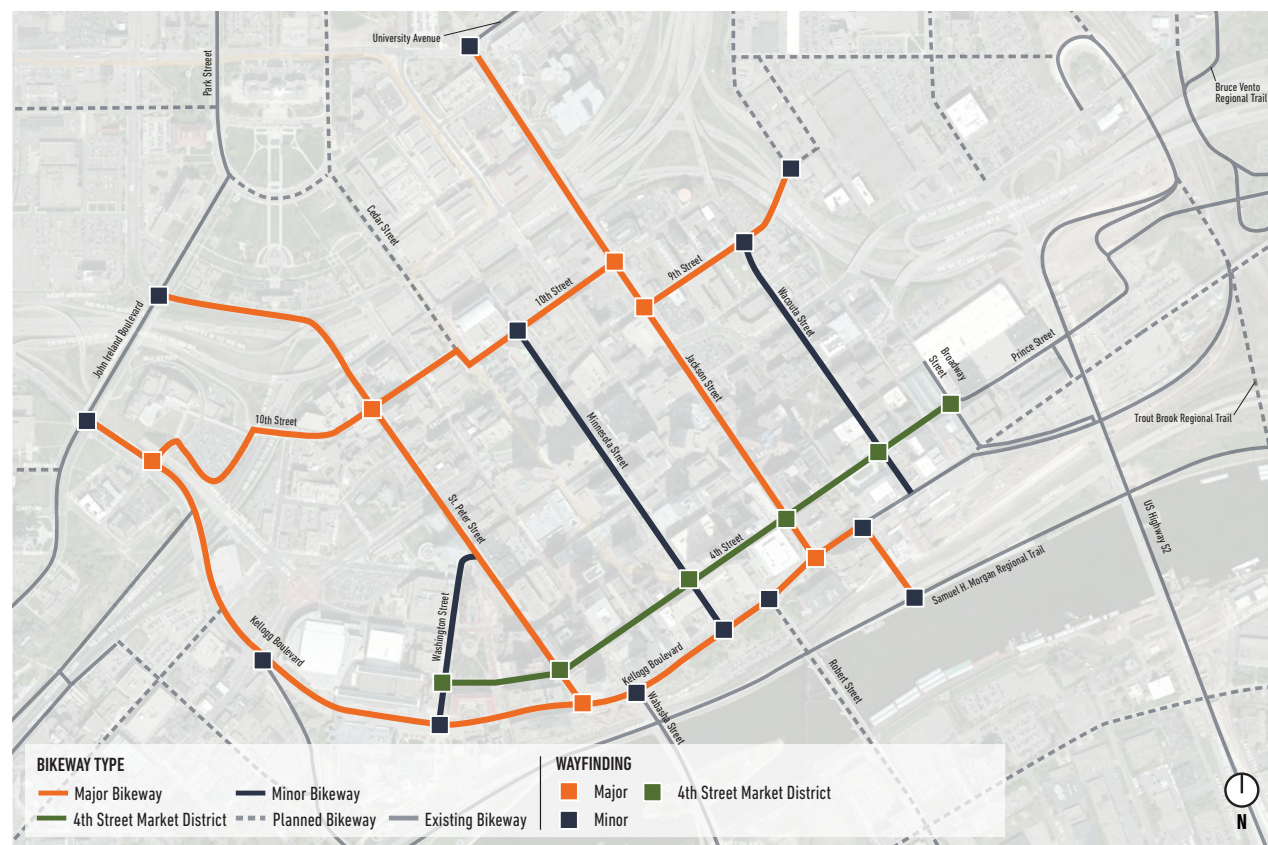


Figure 11: Capital City Bikeway Wayfinding Map

Major Wayfinding Locations

Four major wayfinding sites are located where two major Capital City Bikeway routes intersect (Figure 11). At these locations, urban kiosks should be placed and include information about the routes, regional connections, and key destinations in downtown Saint Paul. The graphics below depict different options of signage elements for major wayfinding locations.



Major wayfinding examples. For illustrative purposes only.

Minor Wayfinding Locations

Minor wayfinding are also located on major bikeways at locations where a major bikeway intersects with a minor, existing, or planned bikeway. At these locations, wayfinding consists of directional, operational, and reinforcement signage.

Directional signage provides direction to key connections such as the Gateway State Trail and the Samuel Morgan Regional Trail. Operational signage provides confirmation that the user is on the Capital City Bikeway routes, provides information for connecting segments of the Capital City Bikeway and clearly communicates where bicyclists and pedestrians should be. Operational signage also reminds people to look for cyclists at key conflict points (e.g., driveways, areas where bicyclists and pedestrians mix).



directional signage



operational signage



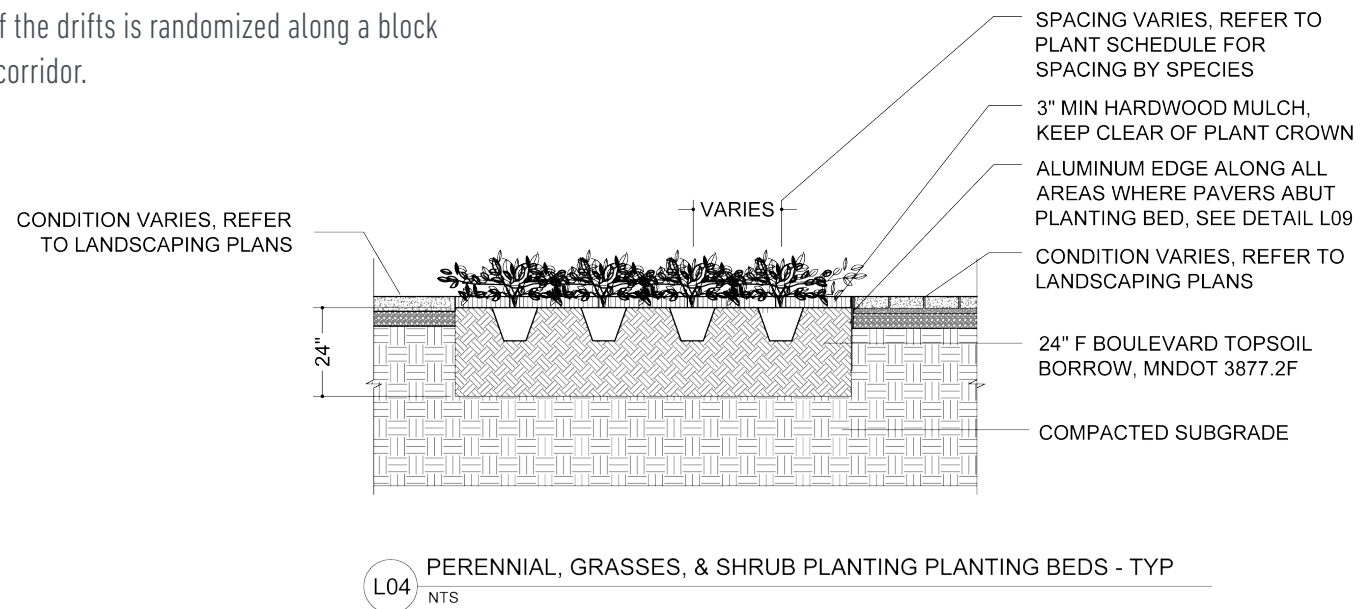
operational and reinforcement signage

Landscape Palette

Bikeway buffers that are 3 feet wide or more provide opportunities to include landscape elements such as perennials, shrubs, and trees. Planted buffers provide an opportunity to create visual interest along the corridor, soften the urban landscape, and deal with stormwater infiltration locally. The following sections describe the approach to perennial and shrub plantings, and tree plantings. The shrubs and perennials specified meet the appropriate height specifications articulated by the Saint Paul Street Design Manual.

Typical Planting Beds

In areas where buffers are 3 feet wide or more, and the subterranean conditions are not amenable to stormwater BMPs because of utilities, bridge decks, or bedrock, typical planting areas should be designed as part of the buffer. The typical planting beds provide opportunities for greening and softening the corridor and addressing stormwater, but do not include a subterranean drain tile system. The planting design for the typical planting beds is similar to the Stormwater BMPs, and includes large drifts of plants. The rhythm and size of the drifts is randomized along a block allowing for a unique experience along the corridor.



Typical Planting Bed Species



PLANT NAME: *Sporobolus heterolepis*, Prairie Dropseed

CHARACTERISTICS: Native perennial grass that grows in average, dry to medium, well-drained soils in full sun. Reaches 2-3' tall.

SEASONAL INTEREST: Fine-textured, hair-like, medium green leaves form an arching foliage mound.



PLANT NAME: *Nepeta x faassenii*, 'Walker's Low', Walker's Low Catmint

CHARACTERISTICS: Grows 24"-30" tall in average, dry to medium, well-drained soil in full sun to part shade.

SEASONAL INTEREST: Showy periwinkle blue flower spikes adorn fragrant mounds of gray-green foliage.



PLANT NAME: *Astilbe x arendsii* 'Beauty of Ernst', Astilbe

CHARACTERISTICS: Upright habit, rapid growth rate to 18" tall.

SEASONAL INTEREST: Light pink flowers on upright to slightly arching stems rising above the foliage. Leaves emerge green, mature to burgundy-purple and turn gold, orange and russet in fall.



PLANT NAME: *Astilbe japonica* 'Deutschland', Astilbe

CHARACTERISTICS: Clump-forming perennials which feature graceful, fern-like mounds 20-24" tall.

SEASONAL INTEREST: Lustrous green leaves and upright panicles of pure white flowers in late spring.



PLANT NAME: *Anemone sylvestris*, Anemone

CHARACTERISTICS: Grows 12-20" tall in loose soils.

SEASONAL INTEREST: Slightly fragrant flowers are borne above soft-textured blue-green foliage in late spring.



PLANT NAME: *Salvia nemrosa* 'mainacht', Salvia

CHARACTERISTICS: Clump forming. Grows in average, dry to medium, well-drained soil in full sun, 18" tall.

SEASONAL INTEREST: Deep violet-blue color provides excellent contrast in the perennial border.



PLANT NAME: *Rhus aromatica* 'Gro-Low', Gro-Low Fragrant Sumac

CHARACTERISTICS: Dense, low-growing, rambling shrub which spreads by root suckers and typically grows 12-24" tall.

SEASONAL INTEREST: Fragrant leaves turn attractive shades of orange and red in autumn.



PLANT NAME: *Spirea x bumalda* 'Magic Carpet', Spirea 'Magic Carpet'

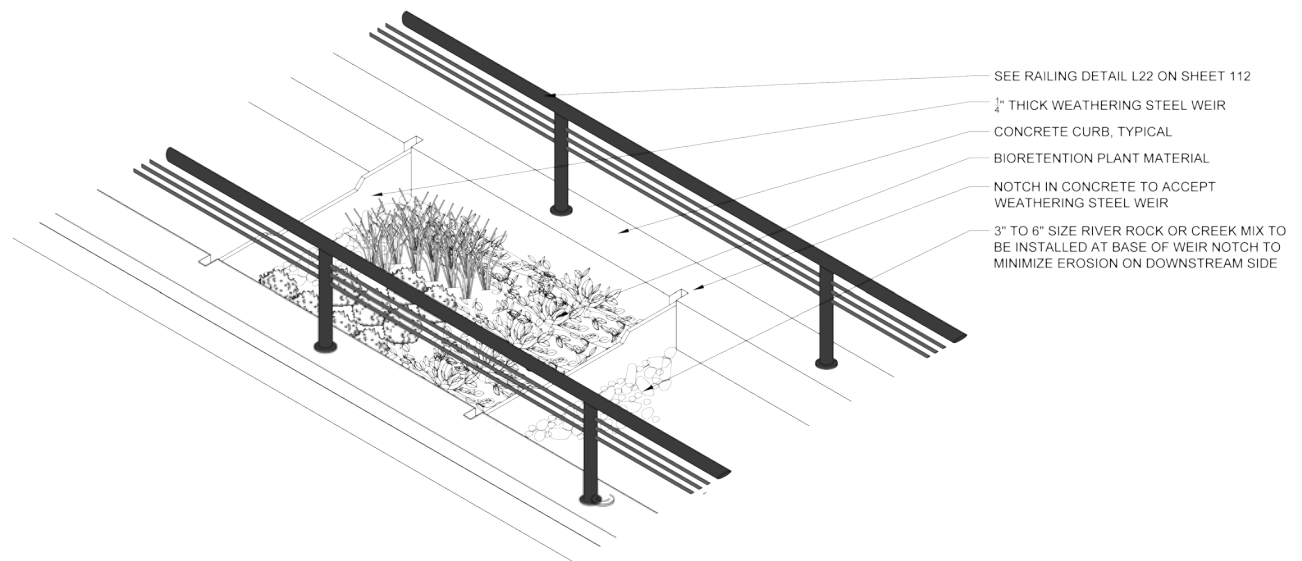
CHARACTERISTICS: Neat, compact mounded shrub, 18-24" tall.

SEASONAL INTEREST: Clusters of small pink flowers contrast with bright gold mature foliage that turns rich russet-red in fall.

Stormwater Best Management Practices (BMPs)

In areas where buffers are 5 feet or more and subterranean conditions allow for it, the Capital City Bikeway should incorporate stormwater BMPs (called Bio-Infiltration Basin Systems in the Saint Paul Street Design Manual). A Bio-Infiltration Basin System or stormwater BMP is a large scale, depressed landscaped feature intended to hold a specified amount of stormwater runoff from moderate to relatively high amounts of impervious surface. Stormwater is retained while it infiltrates into the soil below and then into the underground water conveyance system. Capital City Bikeway stormwater BMPs are designed to allow water from the motor vehicle travel lanes, the bikeway, and sidewalks to enter the basins. Curb cuts on the vehicle travel lanes allow for water to enter the basins. The sidewalks and bikeway are sloped so water flows into the basins.

Plant species are described on the following page. The planting design along the corridor includes large drifts of plants. The rhythm and size of the drifts is randomized allowing for a unique experience along the corridor.



L30 STORMWATER BMP
NTS

Stormwater BMP Species



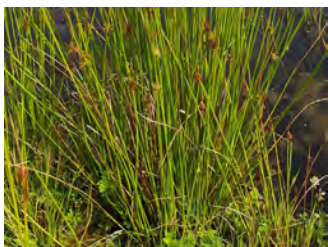
PLANT NAME: *Cornus sericea* 'Kelseyi', Kelsey Dwarf Dogwood
CHARACTERISTICS: Low growing deciduous groundcover 30" Tall. Adapted to moist, well-drained soil.

SEASONAL INTEREST: Bright green leaves and masses of white flowers appearing in late spring, red branches provide winter interest.



PLANT NAME: *Panicum virgatum* 'Shenandoah', Switchgrass
CHARACTERISTICS: Grows to 36" tall in average, medium to wet soils in full sun to part shade.

SEASONAL INTEREST: Foliage emerges bluish-green turning burgundy-red by late June. Reddish-pink cloud like flowers. Good winter interest.



PLANT NAME: *Juncus effuses*, Soft Rush
CHARACTERISTICS: Tolerates erosion and wet soil, 24-36" height.

SEASONAL INTEREST: Cylindrical upright green stems in spreading basal clumps.



PLANT NAME: *Carex vulpinoidea*, Fox Sedge
CHARACTERISTICS: Native sedge, grows in damp to very wet soils, 12-36" height.

SEASONAL INTEREST: Attractive seedheads, narrow grass-like leaves.



PLANT NAME: *Echinacea purpurea*, Purple Coneflower
CHARACTERISTICS: Clump forming native perennial, 24-36" height.

SEASONAL INTEREST: Showy, daisy-like, purple coneflowers, summer.



PLANT NAME: *Iris versicolor*, Blue Flag Iris
CHARACTERISTICS: Sword-shaped, blue-green leaves, 24-30" height.

SEASONAL INTEREST: Bold purple flowers in late spring.



PLANT NAME: *Liatris pycnostachya*, Prairie Blazing Star
CHARACTERISTICS: Grows to 24-48" tall in average, dry to medium, well-drained soils in full sun.

SEASONAL INTEREST: Round, fluffy, deep rose-purple flower heads. Strong vertical accent stems.



PLANT NAME: *Liatris spicata* 'Floristian White', Blazing Star
CHARACTERISTICS: Grows to 36" tall in average, dry to medium, well-drained soils in full sun.

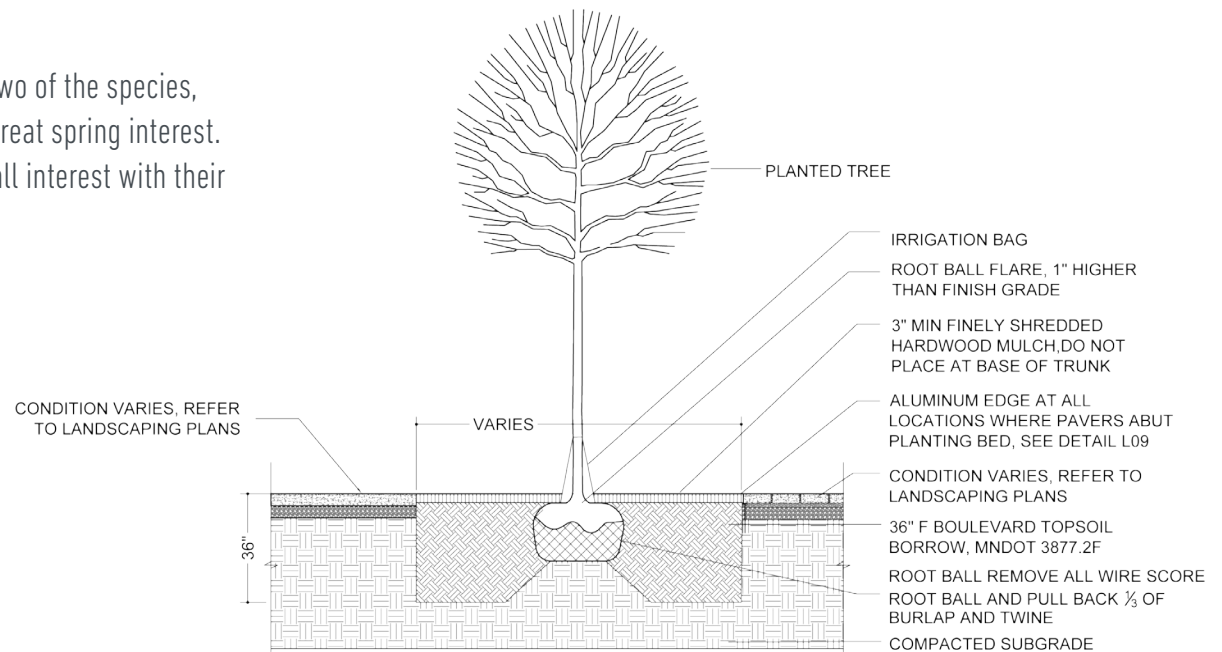
SEASONAL INTEREST: Multiple wands of creamy white flowers. Strong vertical accent stems.

Canopy and Ornamental Trees

Canopy and ornamental trees should be included along the Capital City Bikeway where feasible. Trees provide necessary shade and a sense of enclosure. Along the Capital City Bikeway, a variety of tree species are specified so that if one species suffers from a blight or other stressors, others may thrive and some of the tree canopy is retained. Similar to the perennial and shrub design, trees locations are randomized; particular attention was paid to sight lines and appropriate spacing given each block context.

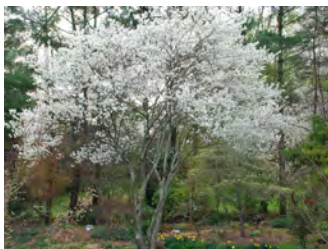
Canopy trees are typically 30 feet on center. The species have a minimum height of 40 feet and provide a significant canopy over the bikeway. Species are described on the following page.

Ornamental or small trees are typically 20-30 feet on center. Two of the species, japanese tree lilac and serviceberry, are fragrant and provide great spring interest. Two of the species, serviceberry and ironwood, provide great fall interest with their leaves turning vibrant reds, oranges, and yellows.



L01 TREE PLANTING IN PLANTING BED - TYP
NTS

Tree Species



PLANT NAME: Amelanchier x grandiflora 'Autumn Brilliance', Serviceberry

CHARACTERISTICS: Native tree, tolerates clay soil, 20-25' mature height.

SEASONAL INTEREST: Showy, slightly fragrant, white flowers in spring.



PLANT NAME: Gleditsia triacanthos f. inermis 'Skyline', Honeylocust 'Skyline'

CHARACTERISTICS: Pyramidal growth with a central leader. It is a thornless and nearly seedless variety that typically grows to 40-50' tall.

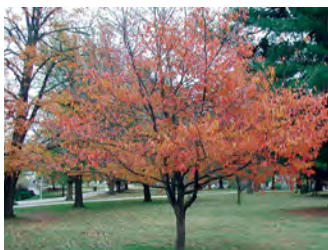
SEASONAL INTEREST: Leaves turn an attractive yellow in fall.



PLANT NAME: Gymnocladus dioica 'Stately Manor', Kentucky Coffee Tree 'Stately Manor'

CHARACTERISTICS: Large deciduous tree reaching 40-50' tall.

SEASONAL INTEREST: Yellow fall color.



PLANT NAME: Ostrya virginiana, Ironwood

CHARACTERISTICS: Deciduous native 30-50' tall.

SEASONAL INTEREST: Attractive sinuous bark. Yellow fall color.



PLANT NAME: Quercus bicolor, Swamp White Oak

CHARACTERISTICS: Medium sized, deciduous tree with a broad, rounded crown reaching 50-60' tall.

SEASONAL INTEREST: Fall color is yellow, but sometimes reddish purple.



PLANT NAME: Syringa reticulata 'Ivory Silk', Japanese Tree Lilac

CHARACTERISTICS: Native tree, tolerates clay soil, 20 to 25' mature height.

SEASONAL INTEREST: Fragrant white flower plumes late spring to early summer.



PLANT NAME: Ulmus 'Patriot', Patriot Elm

CHARACTERISTICS: Vase or fountain shaped arching branch structure. Tree reaches 40-50' tall. Resistant to Dutch elm disease. Tolerant of urban conditions.

SEASONAL INTEREST: Glossy green foliage, yellow fall color.

Public Art

As a destination for people walking and bicycling, the Capital City Bikeway presents an opportunity for a linear collection of monumental art works that currently has ten pieces and will only grow with each completed segment. There are a number of site-based opportunities for public art which should be part of future Capital City Bikeway planning and implementation efforts. In general, these opportunities are located at significant intersections, “gateways” to downtown landmarks or significant destinations, or places where the Capital City Bikeway connects to other trails. The experience along the bikeway will benefit from a variety of approaches to the creation of artworks. Some sections of the bikeway may benefit from a more subtle approach where public art is integrated with street infrastructure, which will help to knit the bikeway together. Public art is not limited to stationary installations or physical objects; it can also be in the form of sound, light, and performance based applications.

Overview of Considerations

Heritage Preservation

The Capital City Bikeway borders the Lowertown Historic District on Jackson Street and touches other historic resources throughout downtown. Many designated historic properties are adjacent to the Capital City Bikeway, and it is important that the design

and implementation of public art consider the historic context of downtown Saint Paul. Additional information about historic resources is located in Appendix D.

Budget and Maintenance

Site-based art demands durable, simple-to-maintain artworks that are subject to the parameters of the infrastructure project. Integrated art elements can extend the reach of a limited budget by becoming part of the fabric of a building, lighting element, street furniture, infrastructure, paving, or other aspect of a construction project. The Public Art Ordinance Program Guidelines and Technical Manual address the special characteristics for site-based and integrated art and both documents serve as guides for the development of public art along the Capital City Bikeway network.

Existing Public Art

There are many public art installations throughout Saint Paul. A number of them are located on or in close proximity to Capital City Bikeway routes.

Integrated artworks that become part of the fabric of the bikeway or that serve a functional purpose will be the most appropriate approaches to take in the design of artwork for the bikeway. Recent City Art projects, such as Everyday Poems for City Sidewalk, have emphasized integrating art into street infrastructure. Limited right-of-way widths and funding for artwork can limit opportunities for large-scale or free-standing artworks.

A substantial number of existing public art installations are located near the Capital City Bikeway, including:



Ice Palaces

ARTIST: Janet Lofquist
LOCATION: 10th Street & LRT Station



Light Wall & Illuminated Benches

ARTIST: Robert Smart
LOCATION: 10th Street & Robert Street



Saint Joseph, bless and protect our doctors and nurses

ARTIST: Nicholas Legeros
LOCATION: 10th Street & St. Peter Street



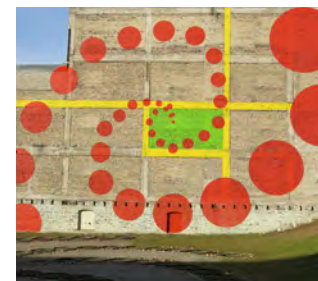
Hamm Plaza Fountain

ARTIST: Jackie Ferrar
LOCATION: Ecolab Place
St. Peter Street & 6th Street



Peanuts Sculptures

ARTIST: Tivoli Too
LOCATION: Landmark Plaza
St. Peter Street & 6th Street



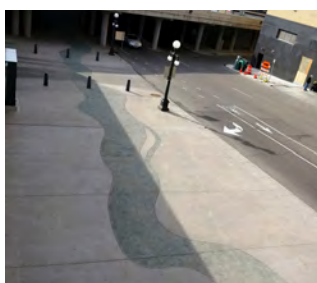
Urban Flower Fields

ARTIST: Amanda Lovelee
LOCATION: Pedro Park
10th Street & Robert Street



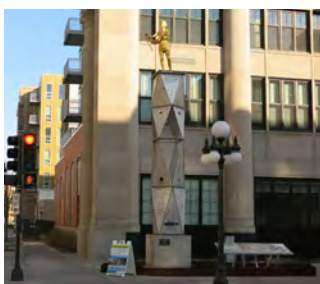
La Nuova Vita

ARTIST: Munguia & Contreras
LOCATION: St. Peter Street & 4th Street



Sibley Flow

ARTIST: Marjorie Pitz
LOCATION: Sibley Avenue & Kellogg Boulevard



Spirit of the Mississippi River

ARTIST: Myklebust & Sears
LOCATION: Minnesota Street & 10th Street



Protagoras by Charles

Ginnever
LOCATION: Kellogg Boulevard & Robert Street

Public Art Guidelines

The Capital City Bikeway provides great opportunities to incorporate art into the heart of downtown. The following are ideas for art integration on segments of the Capital City Bikeway.

Site-Based Public Art

There are four types of site-based public art recommended for the Capital City Bikeway: Gateways, Interactive Art, Landmarks/Focal Points, and Wayfinding. Several examples of existing public art are located along or near the Capital City Bikeway. Existing public art types and locations are shown in Figure 12, as well as proposed locations for potential new public art installations.

Gateways

Gateways are opportunities to mark the entrances and exits to Capital City Bikeway routes. They can take the form of pergola structures, or enhancing existing underpasses with light based art. A significant art opportunity exists at the railroad bridge where Jackson Street and Sibley Street intersect with Warner/Shepard Road, connecting downtown to the Mississippi River.

Underpasses: The provision of good lighting along all portions of the bikeway is an important design goal for the project. This is particularly true where the bikeway goes through underpasses. These locations currently have poor lighting, are unwelcoming, and



Gateway example of light and mural art in an underpass, Kim Beck's Blue Skies. Photo by Ed Massery.



Site based public art example.

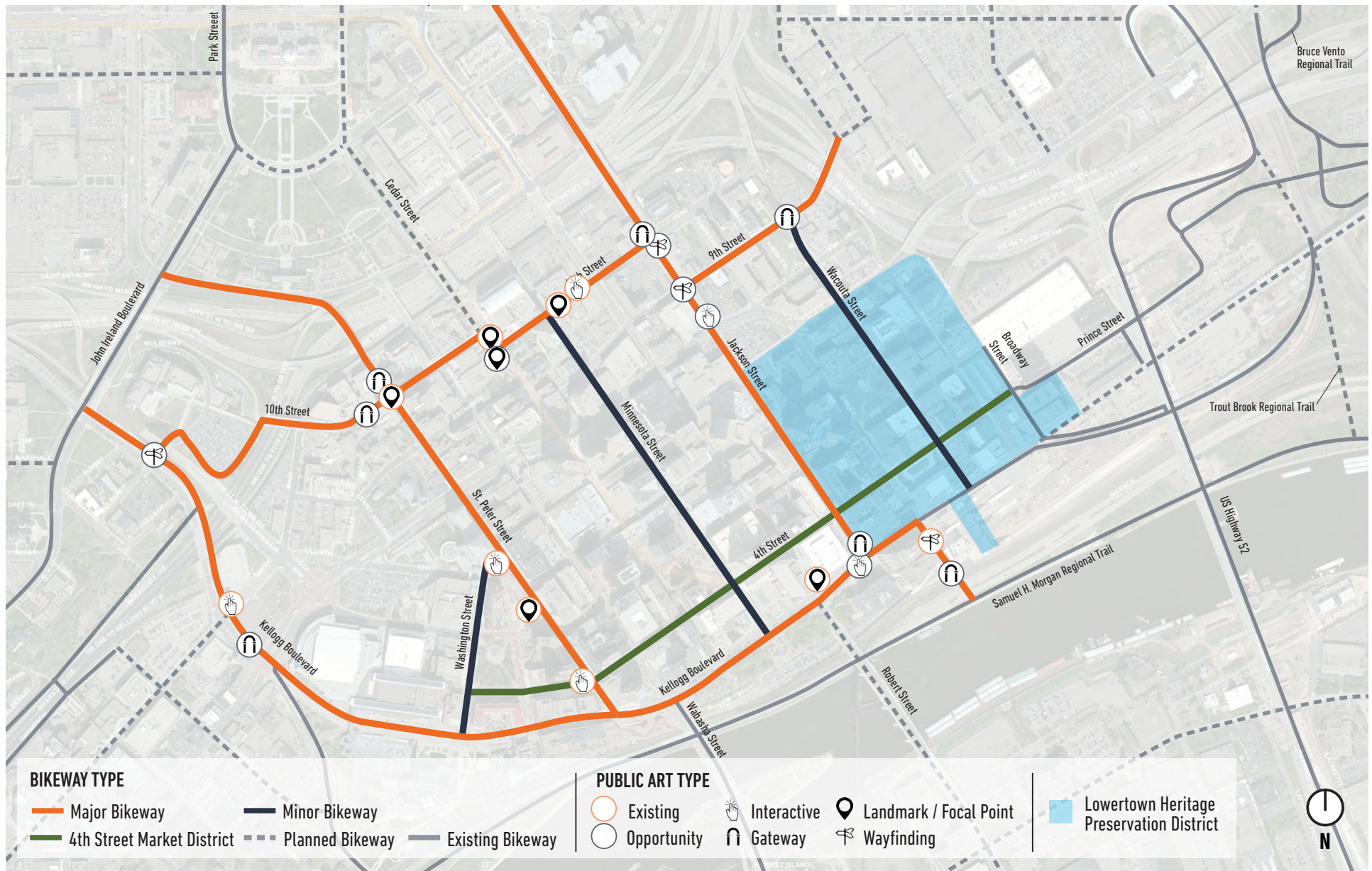
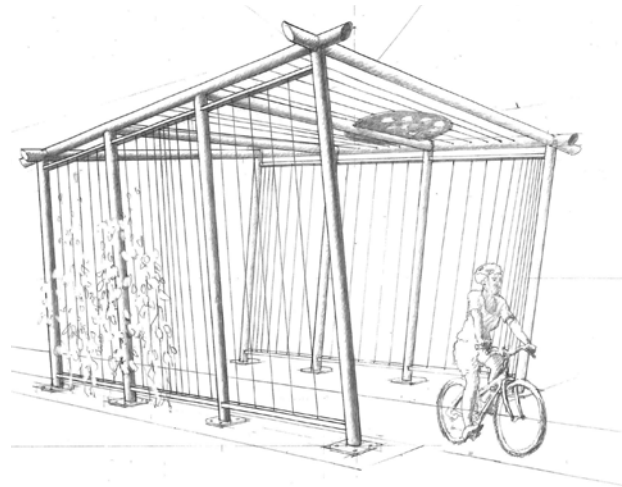


Figure 12: Public Art Map

feel unsafe. Light-based artworks can be integrated within infrastructure elements or can be free-standing; they can mitigate undesirable conditions in these locations and can create memorable placemaking and wayfinding elements. Light-based artworks can effectively increase the sense of safety on a street, and are especially effective during wintertime, when nighttime comes earlier. Light-based artworks are recommended for the underpass at Sibley Street between Kellogg Boulevard and Warner Road, and on 10th Street under St. Joseph's Hospital. A permanent interactive architectural light installation at Sibley Street and Warner Road will feature motion detectors that will activate changes in light color as people walk or bike through the underpass. This dynamic lighting installation will evoke a sense of movement while guiding people to the Mississippi River, transforming a dark concrete underpass to an attractive gateway between the river and downtown.

Pergolas: The pergola structures, which are intended to be gateways into downtown along the various segments of the Capital City Bikeway, are potential art opportunities. The “green screen” trellis material could be artist-designed, or portions of the structures could include art elements. Suitable materials and fabrication techniques might include woven stainless steel or bronze wire mesh, water-jet cut stainless steel

or bronze plate, fabricated steel or bronze, and cast elements in the form of bronze or glass insets. It can include vine plantings and should incorporate lighting for nighttime interest.

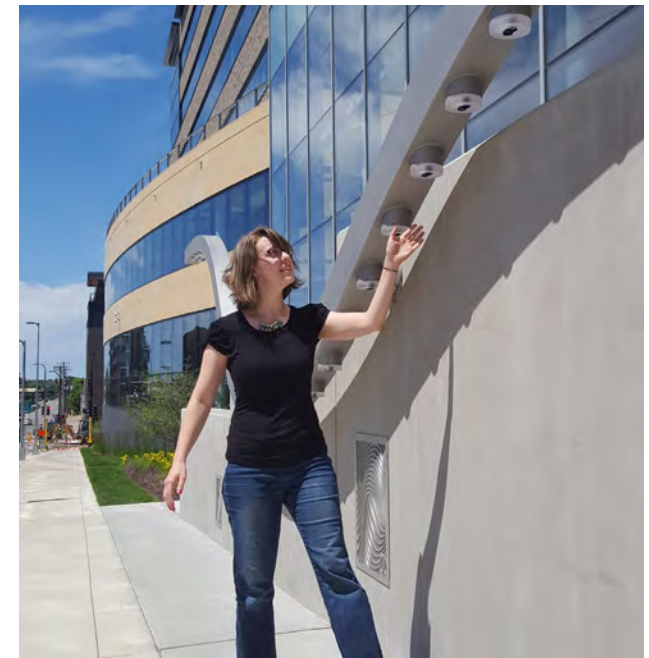


Site based public art example: Concept Rendering of Capital City Bikeway Pergola.

Interactive

Interactive art provides experiential opportunities to engage with artistic installations. The Capital City Bikeway should be experienced as both a path and a place; that is, a destination people go to for a distinct experience whether traveling through or staying for a longer duration. Interactive art is one way to provide such an experience. Interactive art can be as simple as a sculpture that encourages people to touch or

feel it (i.e., Cloud Gate in Millennium Park, Chicago, IL), or reacts with passers-by (i.e., Science Museum of Minnesota Musical Stairs). There are two key spots for interactive art opportunities along Jackson Street: the northeast corner of the intersection of Jackson and 7th Street, and the northwest corner of the intersection of Jackson and Kellogg where a right turn free flow lane is being removed. Additionally, interactive art can be created by playing with sightlines and alignments; the odd element in an unexpected site, and art elements which become part of the path, district, or neighborhood identity.



Interactive art example. Sidewalk Harp, Jen Lewin Studio, Minneapolis, MN.

Focal Point/Landmark

Focal point/landmark artworks can create destinations or meeting places along the path, highlight important historic or natural sites, identify a neighborhood or district, signify entry to a segment, or mark a significant transition from one segment to the next. Focal point artworks can help to establish the bikeway as a special place.



Focal Point/Landmark example. Myklebust+Sears, Heritage4Charlotte, Charlotte-Douglas International Airport, Charlotte, North Carolina.

Integrated Public Art

Integrated artworks that become part of the fabric of the bikeway or that serve a functional purpose will be the most appropriate approaches to take in the design of artwork for the bikeway. Recent City Art projects, such as Everyday Poems for City Sidewalk, have emphasized integrating art into street infrastructure. Limited right-

of-way widths and funding for artwork can limit opportunities for large-scale or free-standing artworks.

The two main areas recommended for integrated artwork along the Capital City Bikeway are on the paved buffer areas and on sidewalks. This may include surfaces/claddings, such as pavements, precast, and poured-in-place elements. These types of integrated artworks may allow an expansion of the public

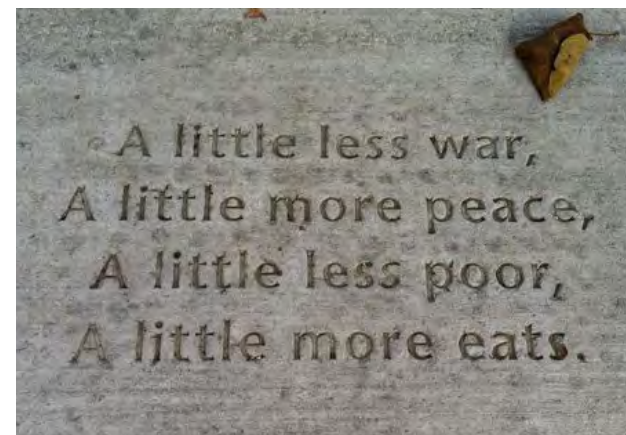


Integrated art example. Myklebust+Sears, Fox theatre, Stockton, CA.

art budget if artworks serving the same functional purpose are designed, and the funds allocated for their purchase can be transferred to the art budget.



Ephemeral art that appears when it rains. Peregrine Church.



Integrated art example. Marcus Young, Everyday Poems for City Sidewalk, Saint. Paul, MN.

BIKEWAY IMPLEMENTATION PLAN

The City of Saint Paul plans roadway reconstruction and funding 5 years in advance of construction. As streets are due for reconstruction, implementation of the major bikeways should be considered in the budget and plan. As roads are repaved and maintained, the minor bikeway routes should be considered for implementation using pavement marking and signing as needed. Combining bikeway construction with roadway reconstruction will provide lower construction costs and reduce road closures within downtown Saint Paul. The following is a suggested implementation plan for the Capital City Bikeway and minor bikeway routes in downtown Saint Paul.

Major Bikeways

Jackson Street

Jackson Street is the first segment of the Capital City Bikeway to be constructed. The roadway pavement on Jackson Street is in need of repair and is driving the reconstruction of the road, while also creating an opportunity to implement a protected bikeway along Jackson Street. The protected bikeway along Jackson Street will fill a key gap in the bicycle network and ultimately connect the Sam Morgan Regional Trail with the Gateway State Trail.

Jackson Street will be reconstructed between 11th Street and Kellogg Boulevard, as well as a short portion of Kellogg Boulevard between Jackson Street and

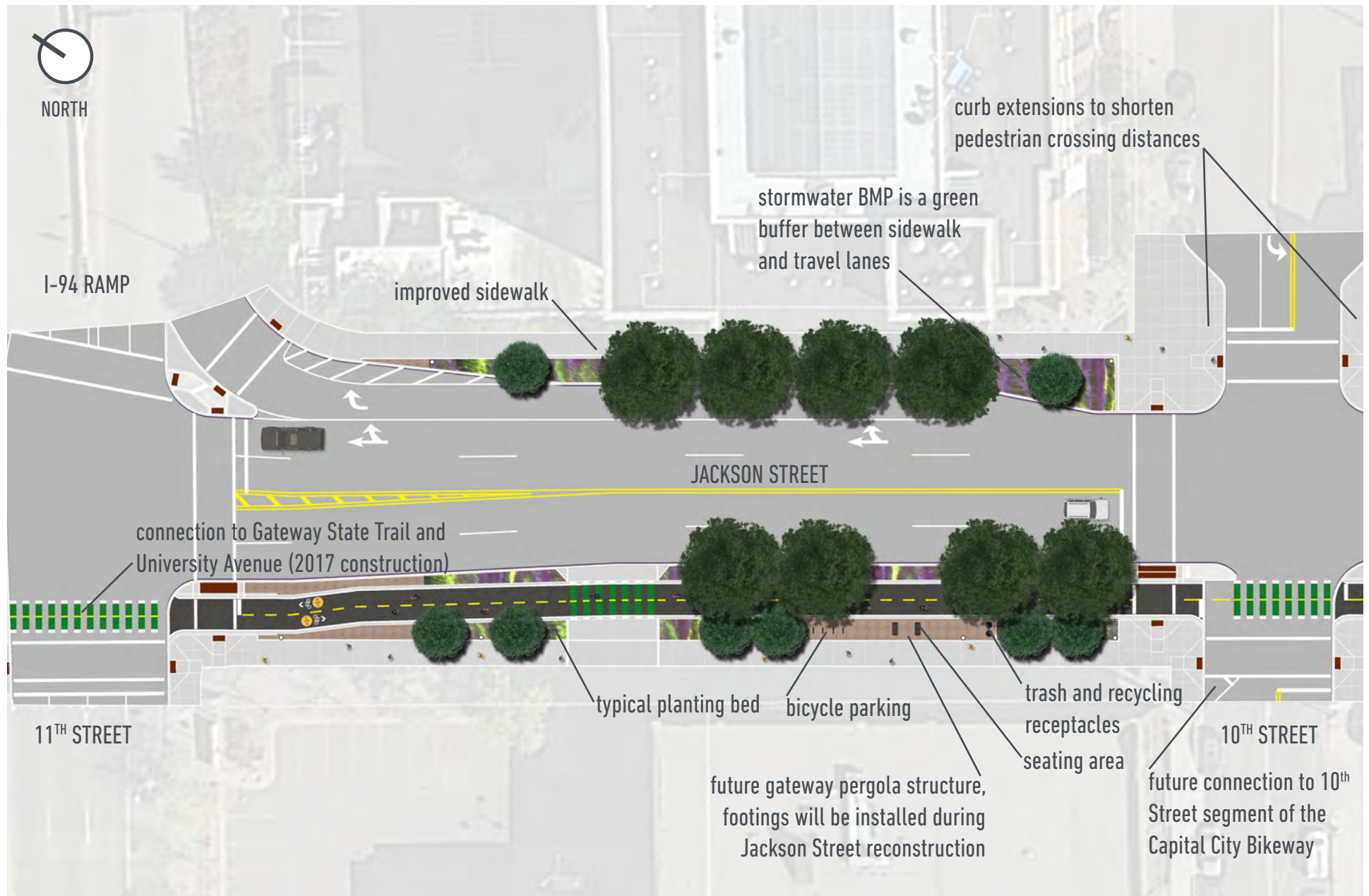
Sibley Street. The artistic trail on the east side of Sibley Street from Kellogg Boulevard to Warner Road will provide the connection to the Sam Morgan Regional Trail.

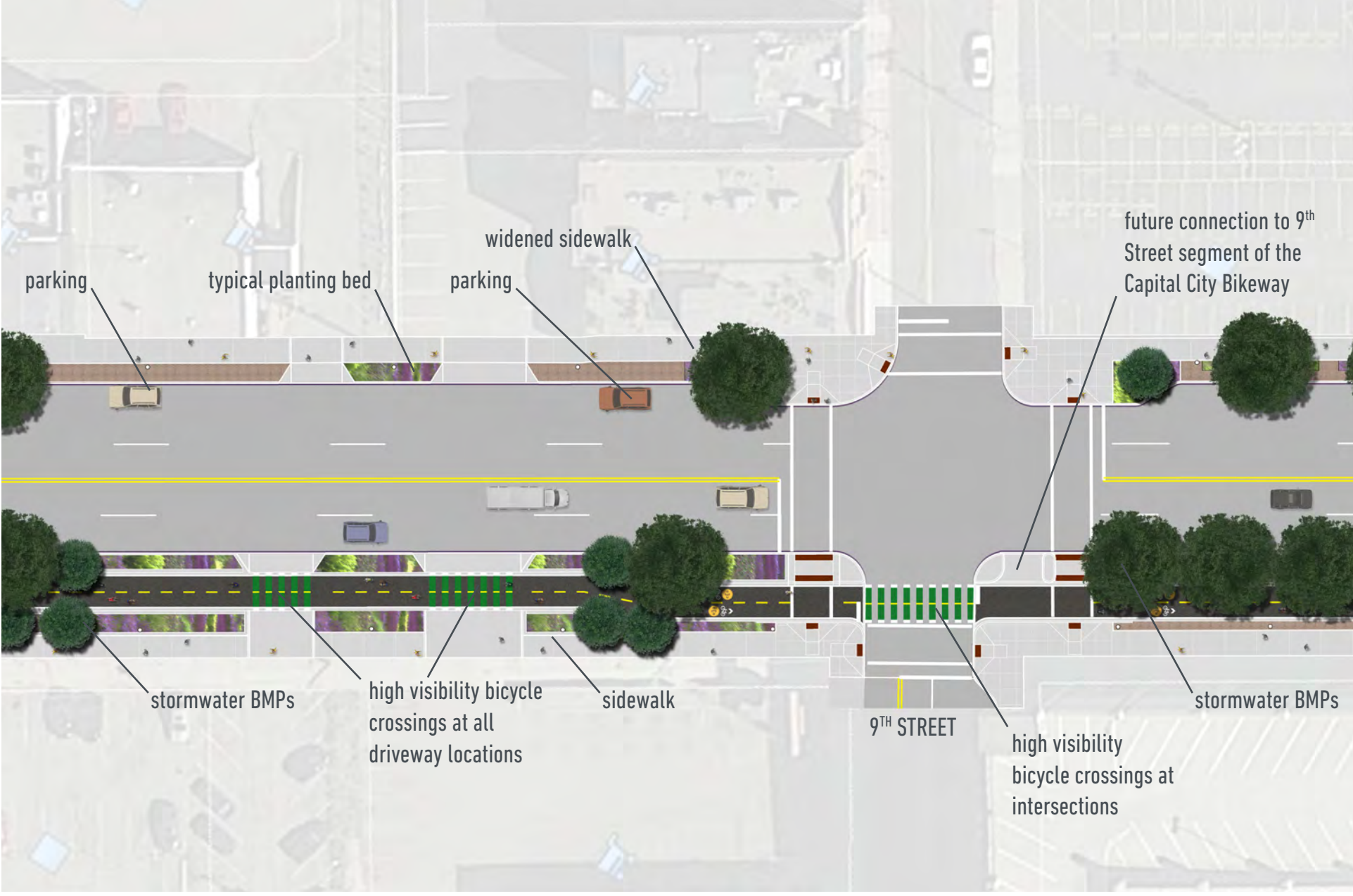
Jackson Street will be reconstructed over two construction seasons in 2016 (Warner Road to 7th Place) and 2017 (7th Place to 11th Street and Kellogg Boulevard between Jackson Street and Sibley Street).

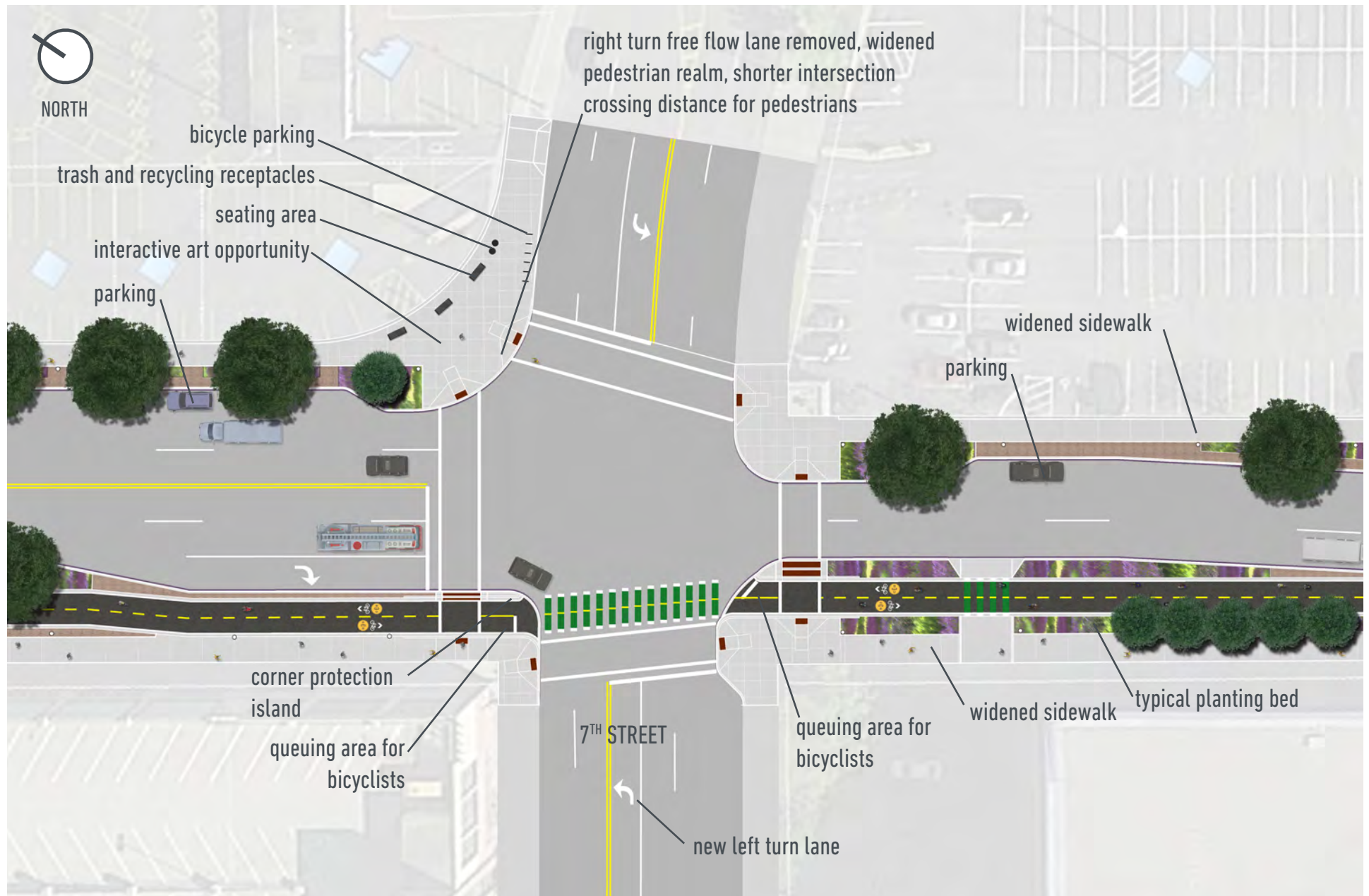
As part of a separate City project, the bikeway will be constructed on Jackson Street from 11th street to University Avenue in 2017. Construction began in spring 2016, starting with underground utility work. The total length of the first segment of the Capital City Bikeway (Jackson Street plus the short segments on Kellogg Boulevard and Sibley Street) will be just over one mile.

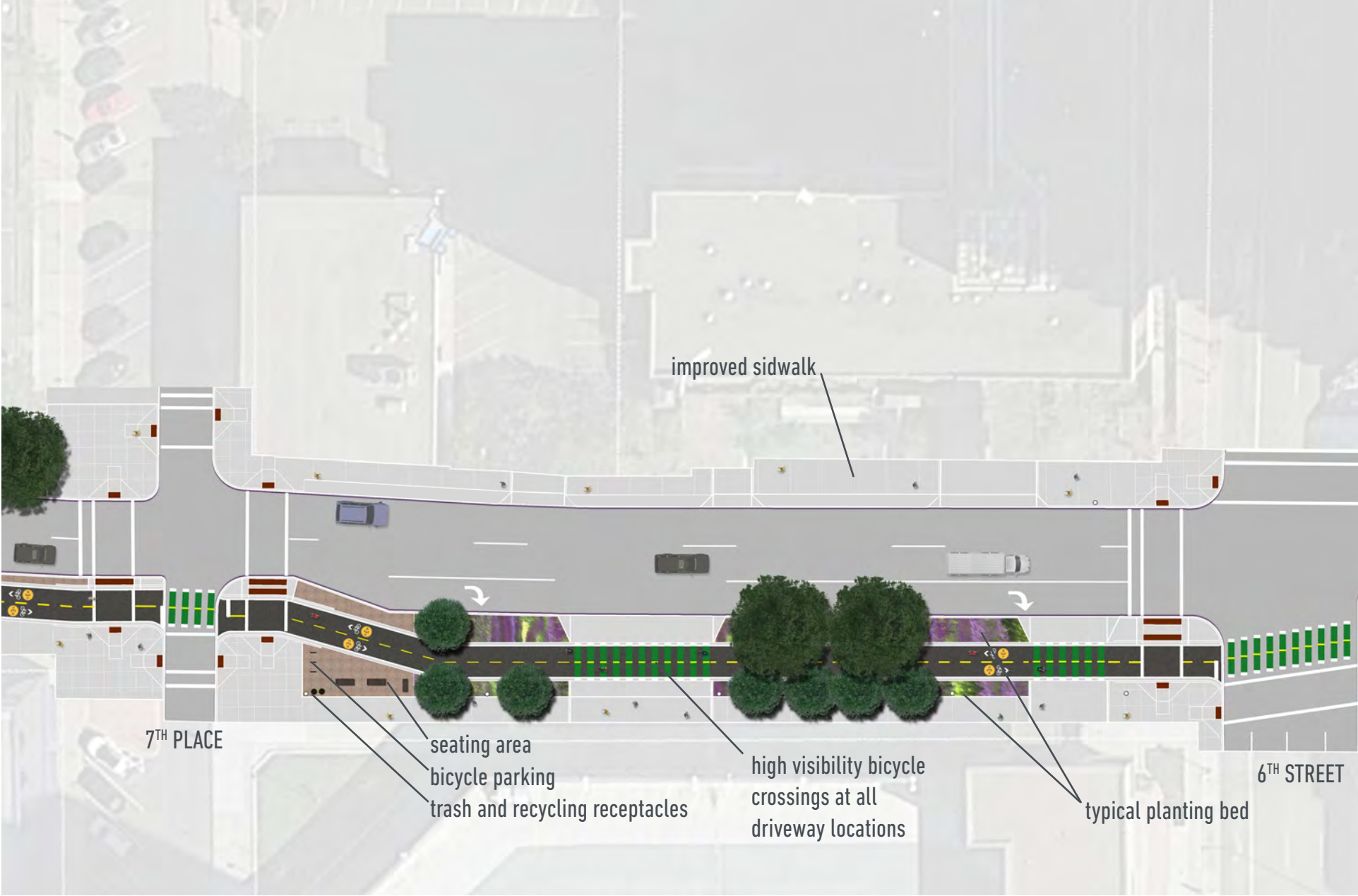


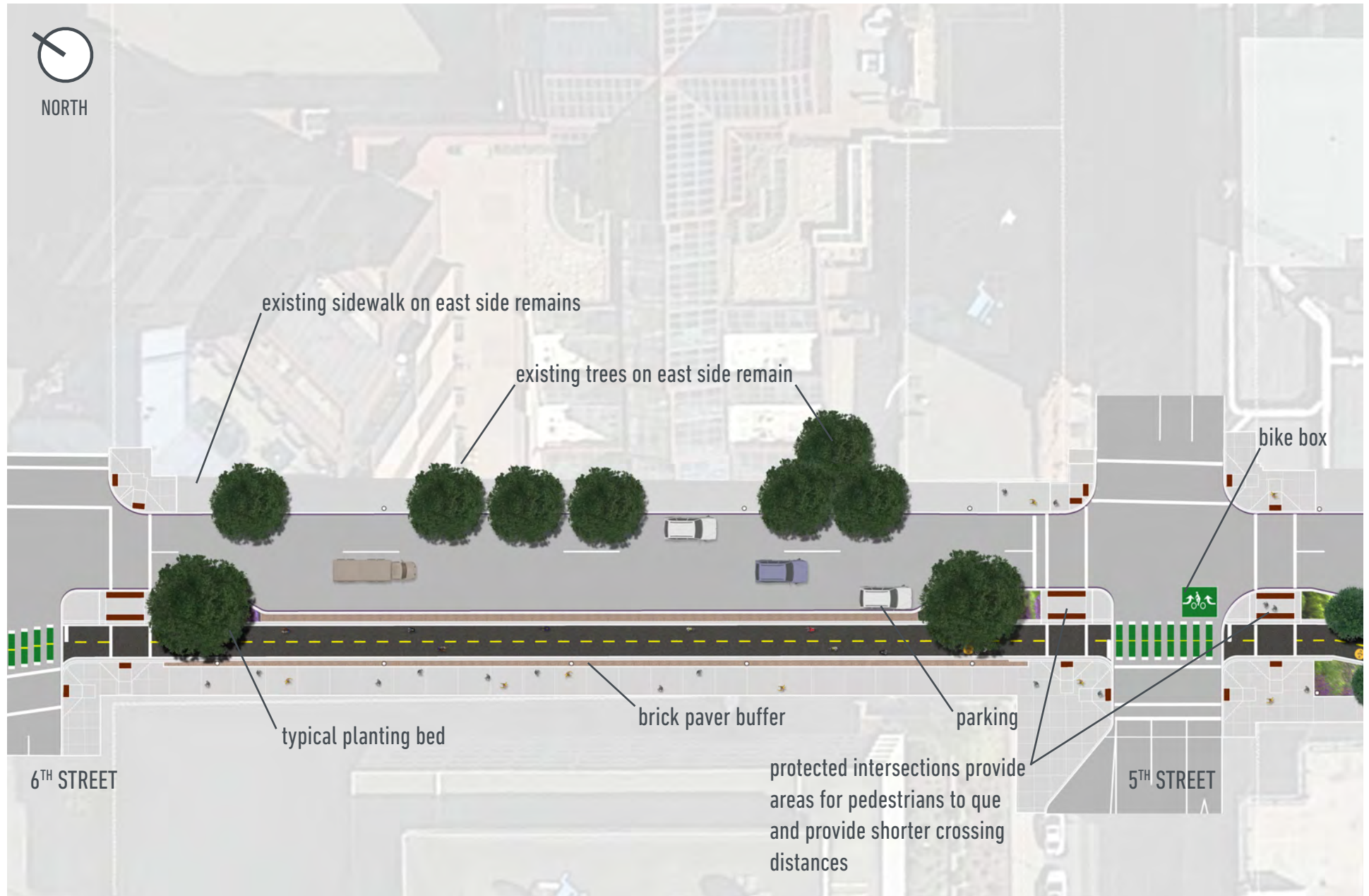
JACKSON STREET

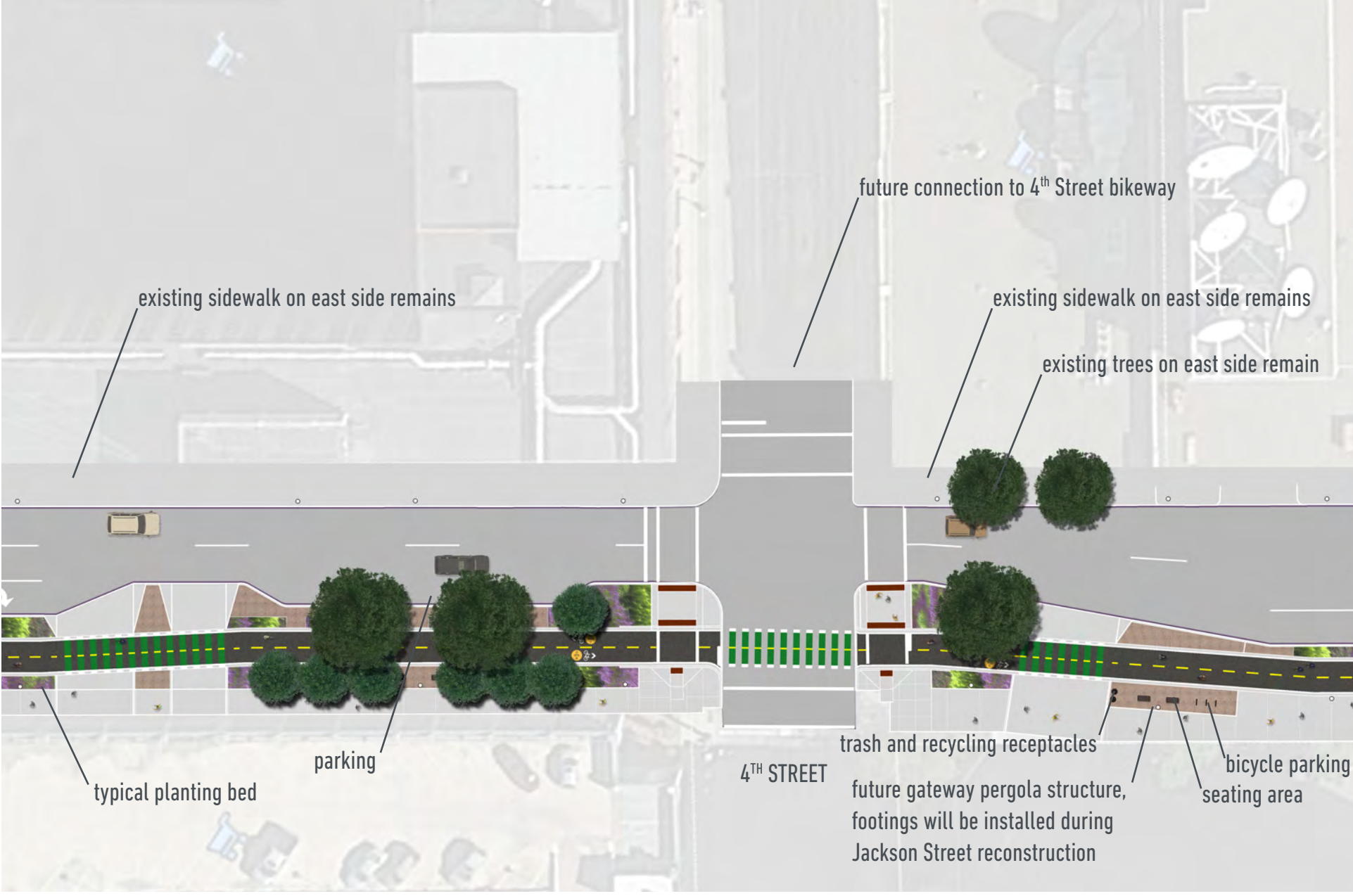


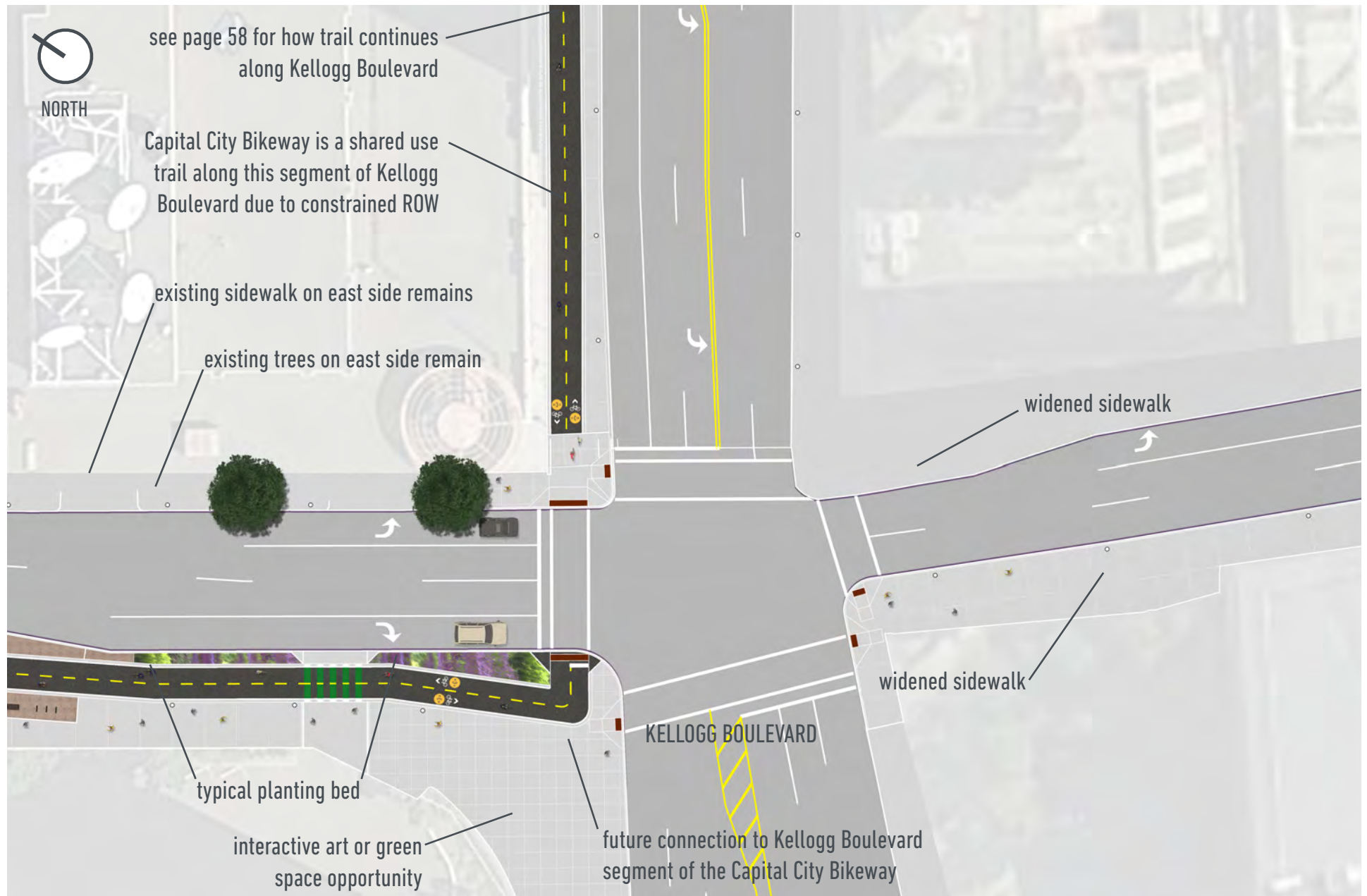


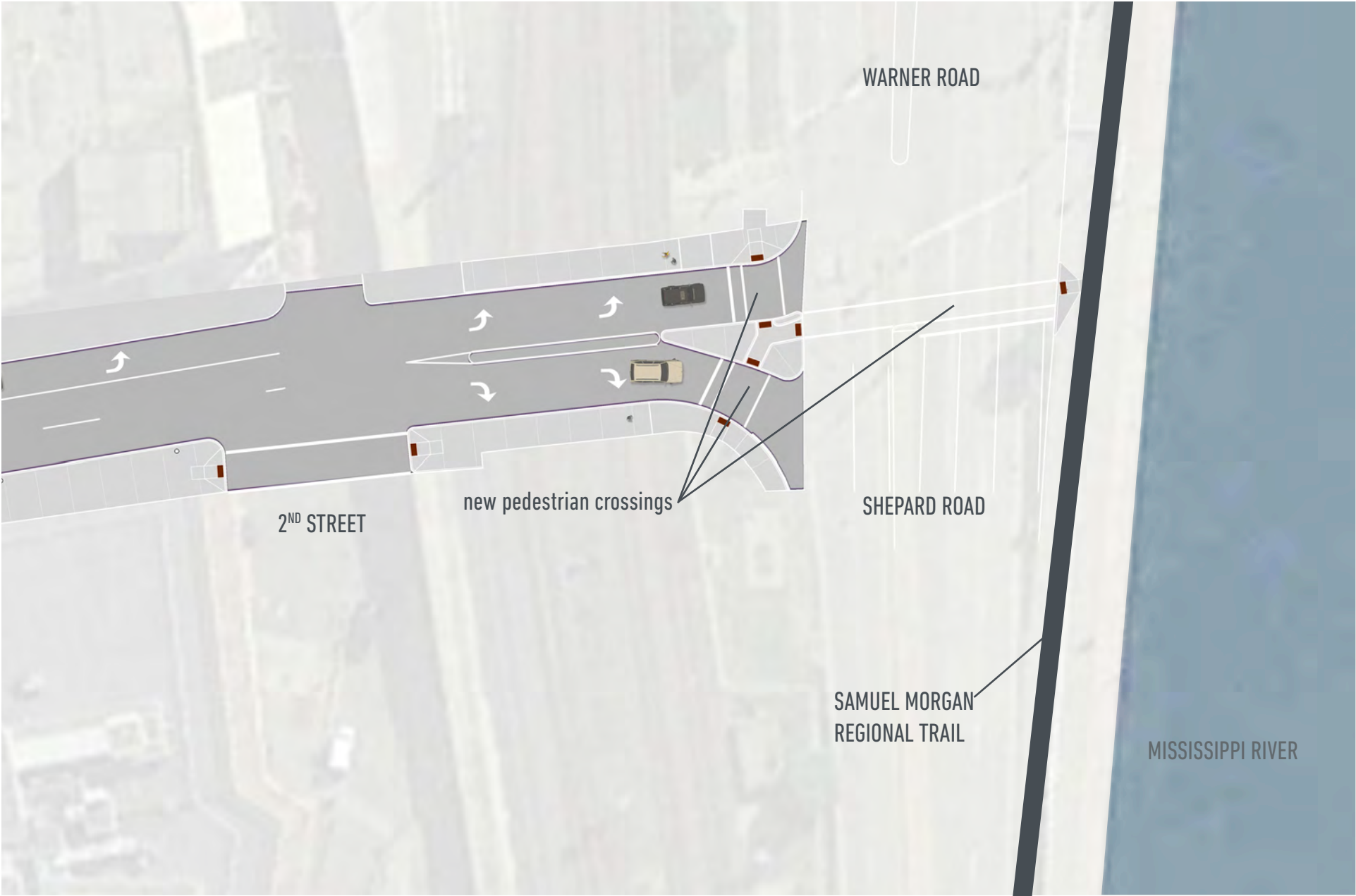




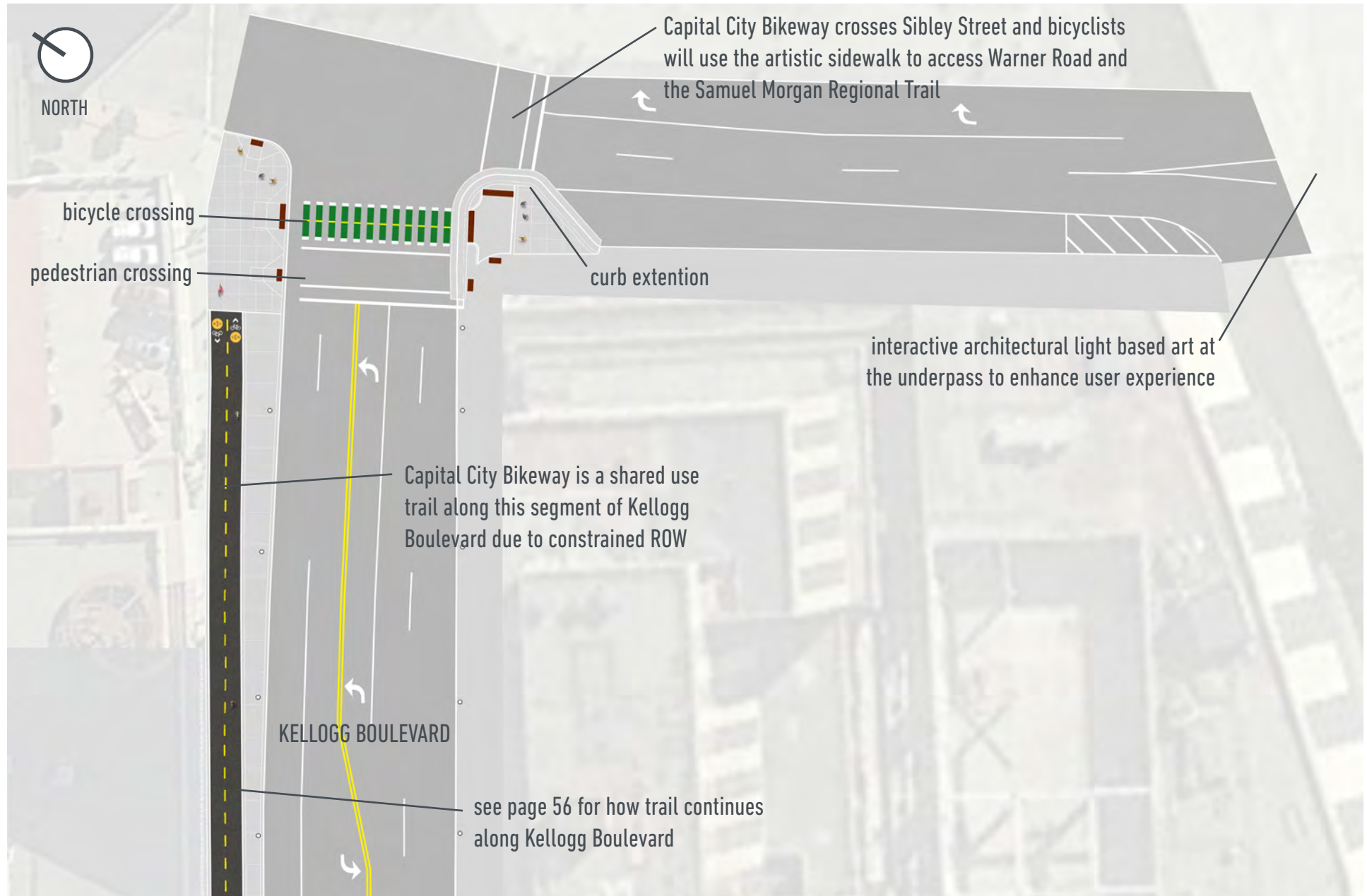






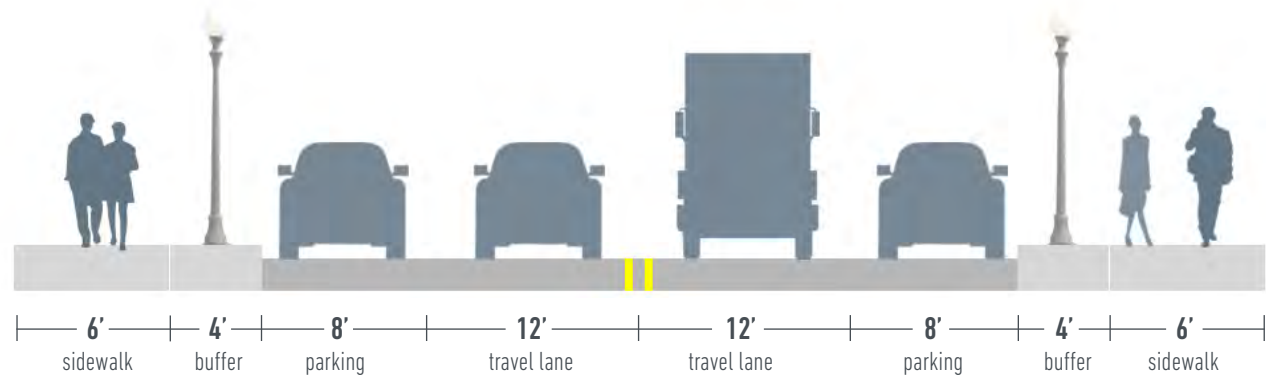


KELLOGG BOULEVARD AND SIBLEY STREET



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Existing Conditions

**9th Street / 10th Street**

This segment of the Capital City Bikeway provides a connection through the northern portion of downtown. The bikeway provides a connection from Kellogg Boulevard via a new trail through the History Center to Broadway Street by reconstructing 9th Street and 10th Street.

Long Term Conceptual Design

The bikeway along 9th Street/10th Street will largely be located on the south side of the street. It will begin on the south side of 10th Street between the History Center and Cedar Street to create a connection to the History Center parking lot without crossing the road. To the east of Cedar Street, the bikeway is recommended to be located on the north side of 10th Street until Jackson Street to better accommodate fire truck access in and out of the fire station located on the north side of 10th Street. The bikeway would then connect with the Jackson Street bikeway for one block, and continue east on 9th Street on the south side of the roadway, reducing conflicts with motor vehicles accessing the I-35E on ramp at Broadway Street, and providing easier access for bicyclists to Wacouta Commons Park. Parking is removed from both sides of the street to allow for an enhanced pedestrian realm and opportunities

for planted buffers, public seating, and outdoor café space.

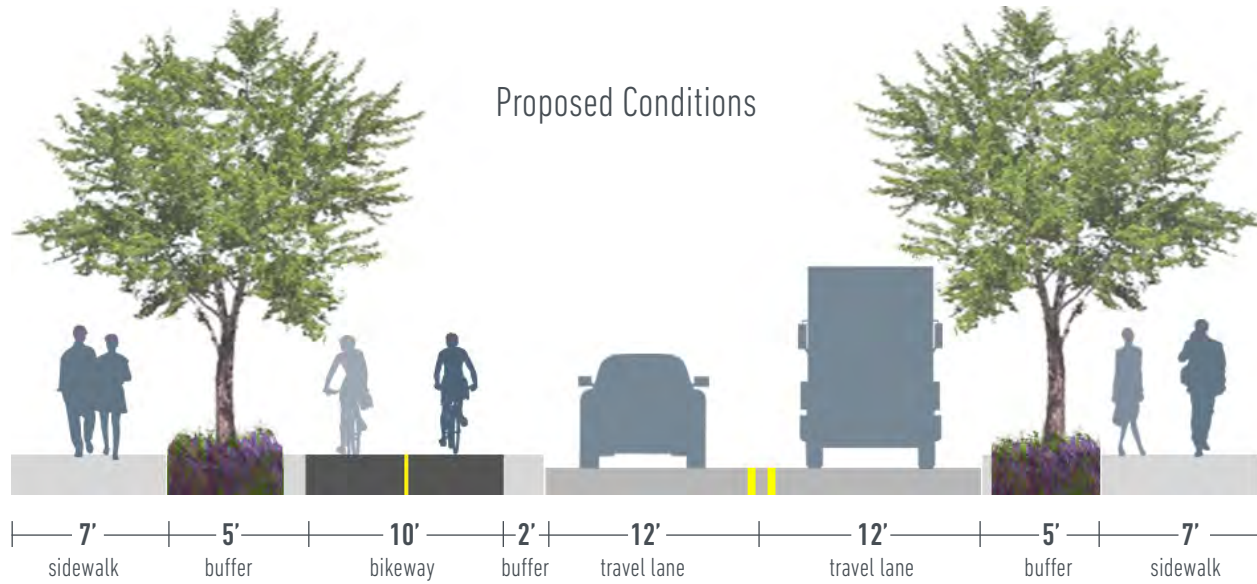
Interim Design

An interim design plan was developed for 9th Street/10th Street to test the impact of removing parking on 9th Street/10th Street before a full reconstruction of the roadway that removes all parking is planned, designed, and funded. The bikeway is recommended to be located on the same side of the street as the long term conceptual design. The bikeway will be implemented by removing parking on one side of the roadway to make space for an 8 foot protected bikeway. The interim design will feature a buffer with flexible posts to provide separation between motor vehicles and the two-way bikeway located at street level. Parking impacts should be monitored and evaluated throughout, and modifications to the final design can be made based on evaluation results.

To see a cross section of the interim design, see page 69.

For detailed 30-scale plan drawings of the long term and interim designs, refer to Appendix E.

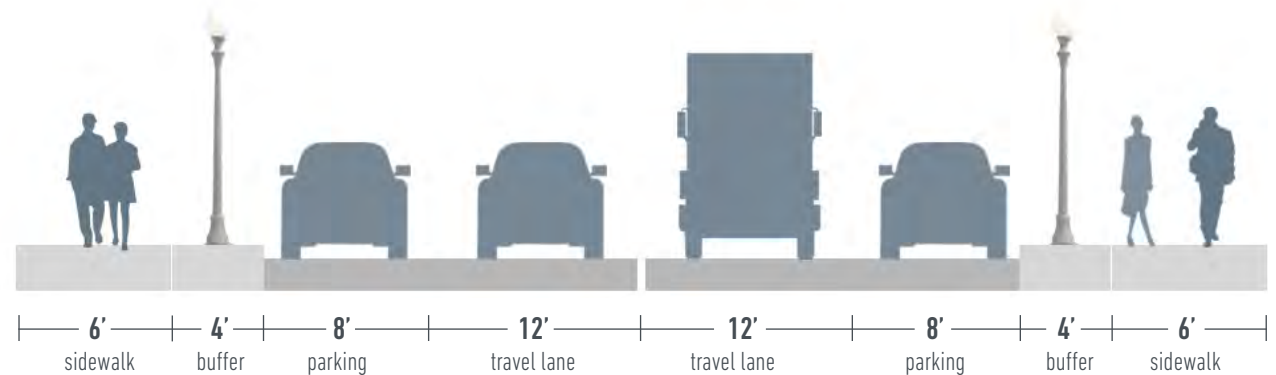
Proposed Conditions



9TH/10TH STREET



Existing Conditions

**St. Peter Street****Long Term Conceptual Design**

This segment of the Capital City Bikeway connects the Capitol area to and through the west side of downtown along St. Peter Street. Two options for the bikeway on St. Peter Street are recommended for further consideration before selecting the preferred option. The two options would both feature a two-way, 10 foot, sidewalk level bikeway on the west side of the street, with a 4 foot buffer between the bikeway and the sidewalk, and a 2 foot buffer between the bikeway and the roadway. The two options focus on alternative configurations of the travel lanes, parking areas, and pedestrian zone on the east side of the street.

Option A

Option A would reduce the roadway to one 16 foot travel lane, and provide a flexible 8 foot area for loading zones, valet parking, metered parking, and additional sidewalk cafés. East of the flexible 8 foot area, a 10-18 foot sidewalk café space is recommended, with a 4 foot buffer between the sidewalk café space and the flexible 8 foot area. This option would only have one travel lane, but it would feature loading zones and parking throughout the segment to allow for delivery and drop-off areas that serve the restaurants and businesses along the street. The wider sidewalk café

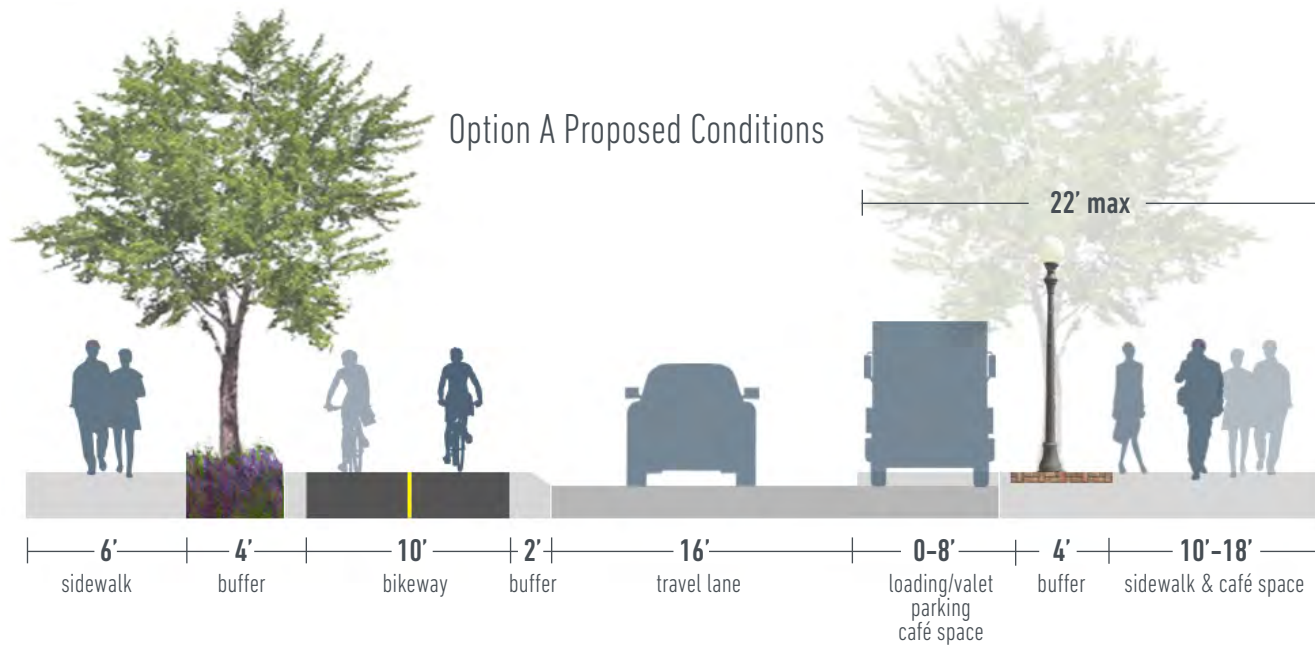
spaces would reduce pedestrian conflicts or “pinch points” along the sidewalk and provide for enhanced street vitality. For detailed 30-scale plan drawings, refer to Appendix E.

Pros

- » Wider sidewalk space for sidewalk cafés and sidewalk around street cafés
- » Parking and loading/valet zones maintained along the corridor
- » Width provides enough space for a stalled vehicle to pull to the side of the road
- » Slowed motor vehicle speeds
- » Green buffers possible along both sides of the street (depending on utilities)
- » More opportunities for curb extensions to reduce pedestrian crossing distance

Cons

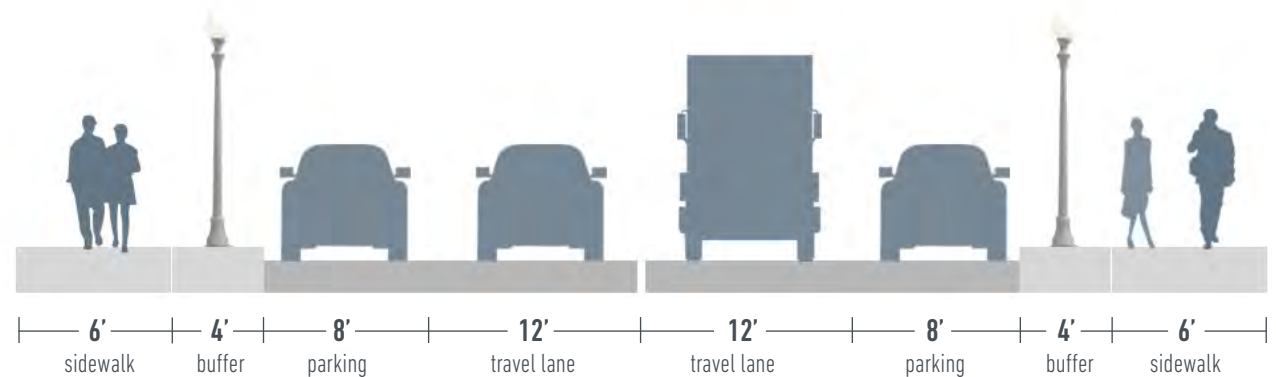
- » Larger or emergency vehicles may need to mount the curb to the bikeway to navigate around stalled or stopped vehicles
- » Less protection for bicyclists by using mountable curb along corridor
- » MSA variance may be required for one travel lane



ST. PETER OPTION A



Existing Conditions



St. Peter Street

Long Term Conceptual Design

Option B

Option B has two 11 foot travel lanes, a 4 foot buffer zone, and a 12 foot sidewalk and sidewalk café space. Option B would have one additional travel lane, but the sidewalk café space would be limited to 12 feet in all areas. It would not feature any dedicated loading and valet parking areas.

Pros

- » Green buffers possible along both sides of the street (depending on utilities)
- » Slowed motor vehicle speeds given narrowed lanes along the corridor
- » More protection for bicyclists by using vertical curb
- » MSA variance may only be required for lane width and curb reaction

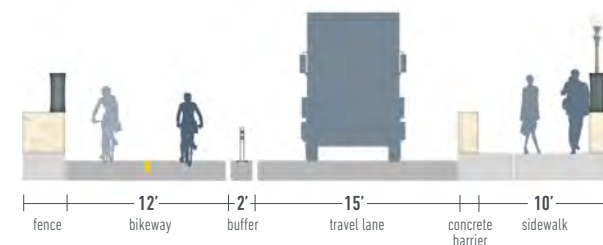
Cons

- » No parking lane or loading/valet zones maintained
- » No additional sidewalk café space in locations of existing cafés

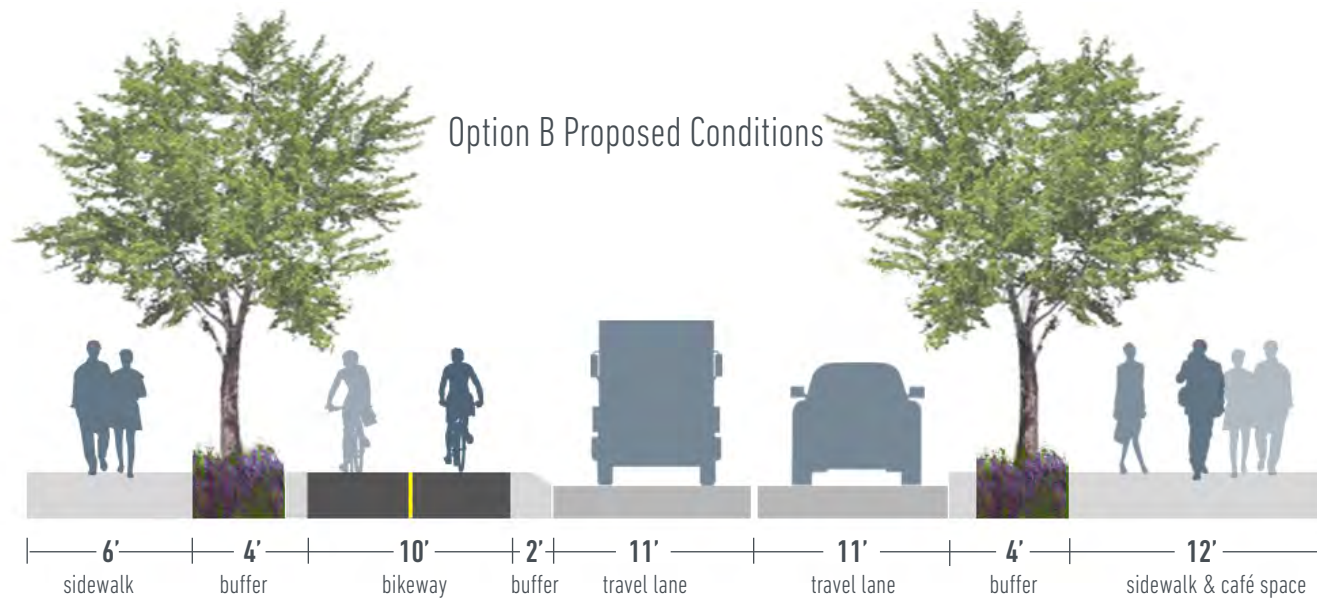
Interim Design

A design plan was developed for an interim bikeway on the St. Peter Street bridge crossing I-94 and I-35E as the existing structure is relatively new. Several concepts have been considered to implement an interim bikeway on St. Peter Street between John Ireland Boulevard and Kellogg Boulevard. The interim design may feature one-way or two-way bikeways for some or all of the alignment, pending further engineering investigation and funding availability.

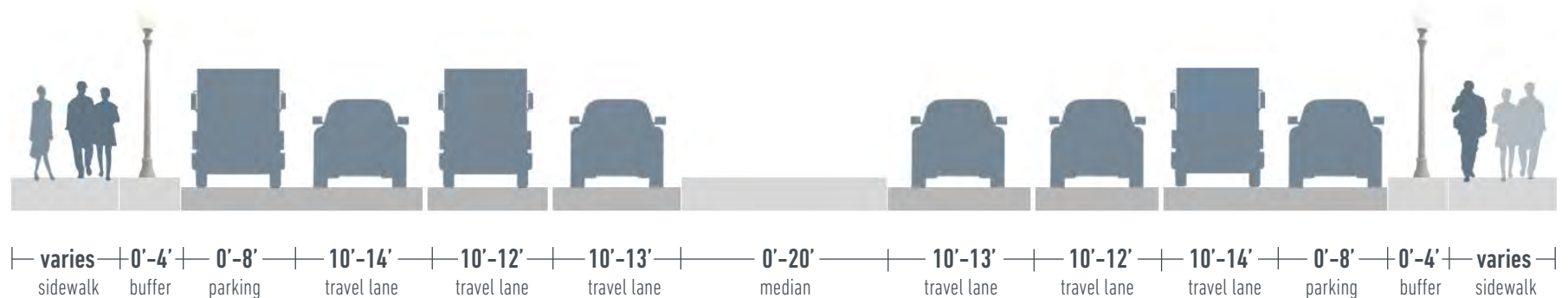
Interim Design - St. Peter Street Bridge



For detailed 30-scale plan drawings of interim design on the St. Peter Street bridge, refer to Appendix E.



Existing Conditions



Kellogg Boulevard

Long Term Conceptual Design

This Capital City Bikeway segment provides a connection from the far northwestern edge of downtown to and through the southern portion of downtown. The bikeway on Kellogg Boulevard is recommended to be on the east side of the street from John Ireland Boulevard to 7th Street and on the north side of the street from 7th Street to Sibley Street.

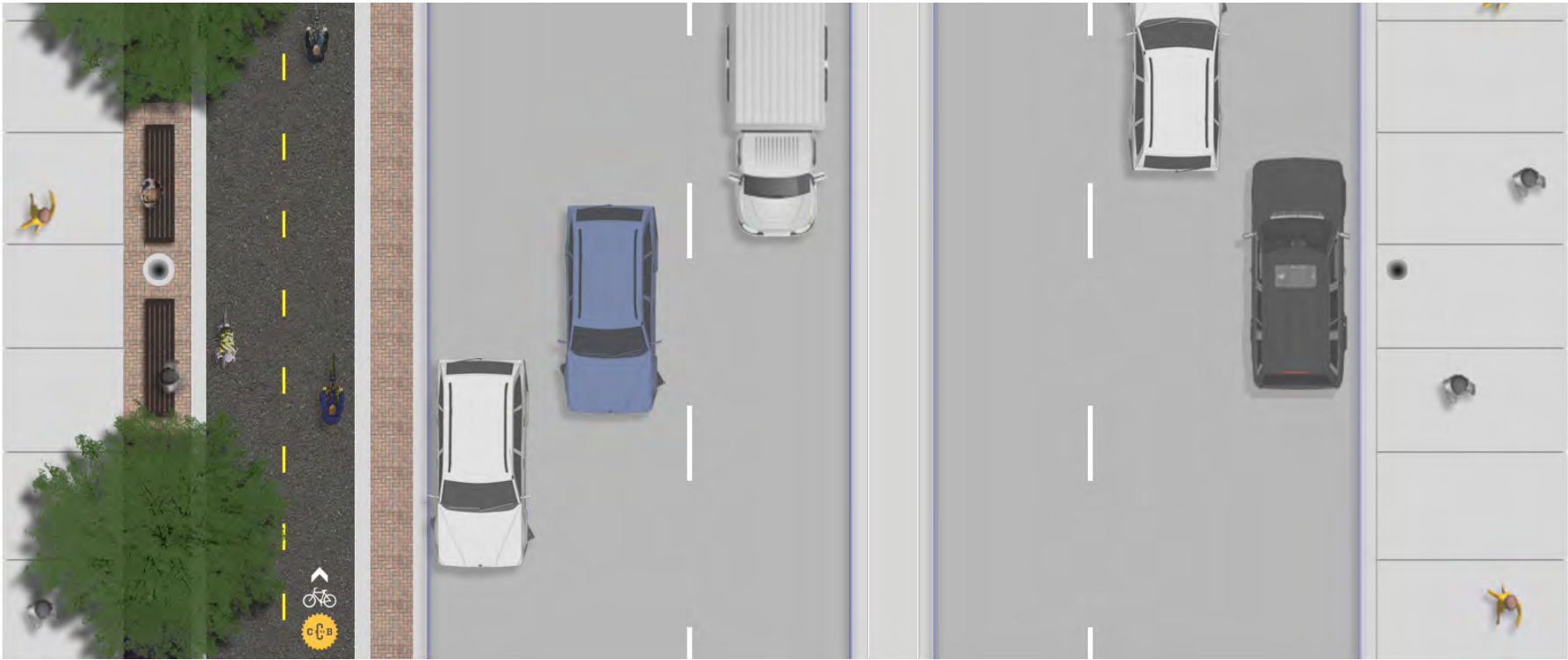
The design of the bikeway respects and accommodates the loading and drop off areas along Kellogg Boulevard, which are located near the Xcel Energy Center, the River Centre, and the InterContinental Hotel. Two westbound travel lanes are provided throughout the corridor, with left turn lanes at Robert Street and Wabasha Street. Removing parking and the dedicated right turn lanes on the north side of Kellogg Boulevard is necessary to provide the space for the two-way, sidewalk level protected bikeway. The right-of-way along Kellogg Boulevard varies significantly. Detailed 30-scale design drawings are shown in Appendix E.



Proposed Conditions



8'-12'	0'-6'	8'-10'	2'-4'	0'-8'	11'-12'	11'-12'	0'-20'	11'-12'	11'-12'	0'-8'	8'-20'
sidewalk	buffer	bikeway	buffer	parking	travel lane	travel lane	median	travel lane	travel lane	parking	existing sidewalk



Minor Bikeways

The Saint Paul Bicycle Plan establishes a new bicycle network functional classification system, which classifies each corridor of the proposed bicycle network as a major or a minor bikeway. According to the Saint Paul Bicycle Plan, the distinguishing features between the two bicycle network functional classifications include “the level of investment anticipated on each corridor, the connections to major attractions or trip

generators, the relative number of anticipated users, the trip and facility length and connectivity to other bikeways or jurisdictions, and the appropriate modal balance relative to the competing needs of the multi-modal transportation system”. The anticipated function of minor bikeways is to provide neighborhood level connectivity to the major bikeway network.

A common theme raised by the community was a desire for a bicycle network that connects to and within downtown. The minor bikeways help to provide a more complete network of bike facilities in downtown Saint Paul. See Figure 13 for the location of the minor bikeways.

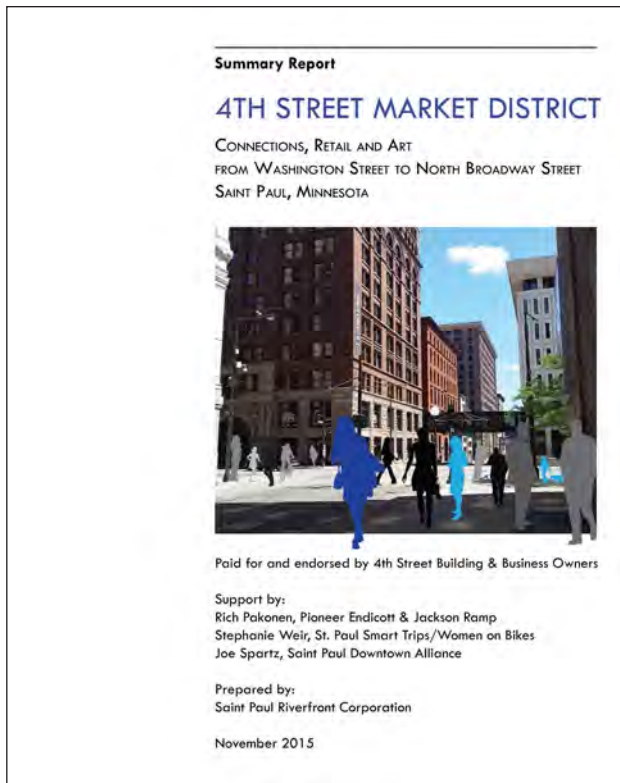
The following are minor bikeways of downtown:

- » **Minnesota Street – 10th Street to Kellogg Boulevard**
This planned minor bikeway is recommended to be a one-way, buffered bike lane on the west side of the street. Detailed 30-scale design drawings are available in Appendix E.
- » **Washington Street – St. Peter Street to Kellogg Boulevard**
- » **Wacouta Street – 9th Street to Kellogg Boulevard**

4th Street Market District

Conceptual Design

In 2015, the Saint Paul Riverfront Corporation prepared the 4th Street Market District Summary Report, which was funded and endorsed by 4th Street building and business owners. The report describes a vision for 4th Street to be transformed into a thriving market district, and an additional east-west bikeway and pedestrian thoroughfare in downtown. The 4th Street Market District report describes a connected corridor along 4th Street from the RiverCentre on Washington Street to CHS Field on Broadway Street. Recommendations from the report include enhanced bikeway and pedestrian connections, shared spaces, amenities, wayfinding, increased and enhanced street level retail, and the addition of public art to create interesting spaces and community identity. See Appendix F for the 4th Street Market District Summary Report.



Cover of the 4th Street Market District Summary Report

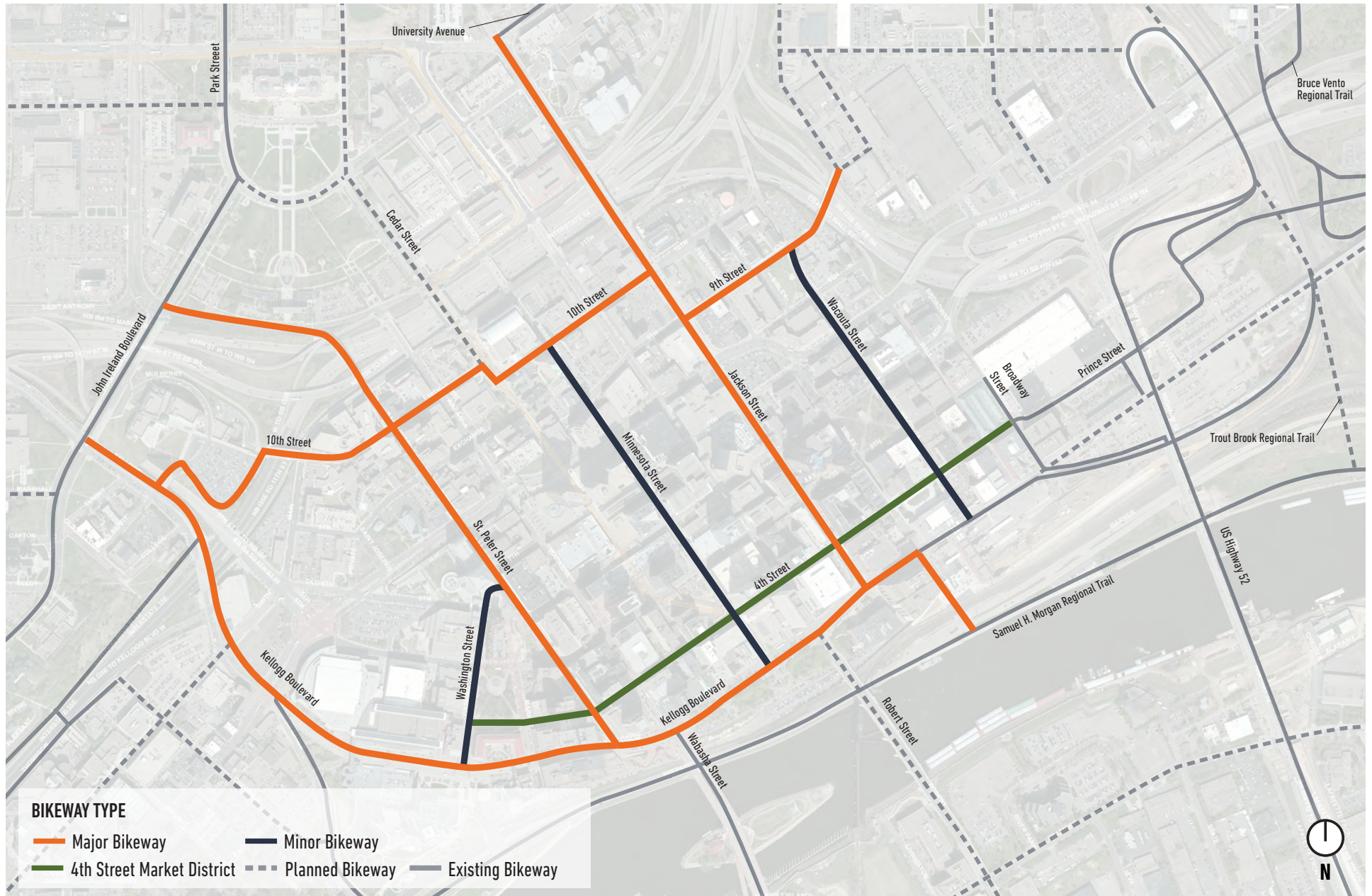


Figure 13: Capital City Bikeway Network Map

Phasing Plan and Cost Estimates

Funding for implementing the Capital City Bikeway has been secured for Jackson Street and one block of Kellogg Boulevard. Funding for the phased implementation of the entire network will come from a variety of sources that may include the City budget, state and federal grants, and Municipal State Aid. Planning level cost estimates are provided for the Capital City Bikeway network, interim bikeway facilities, and a bikeway on Minnesota Street (Figure 14). The graphics on page 69 show existing conditions, interim treatment, and long term proposed conditions as a phasing example.

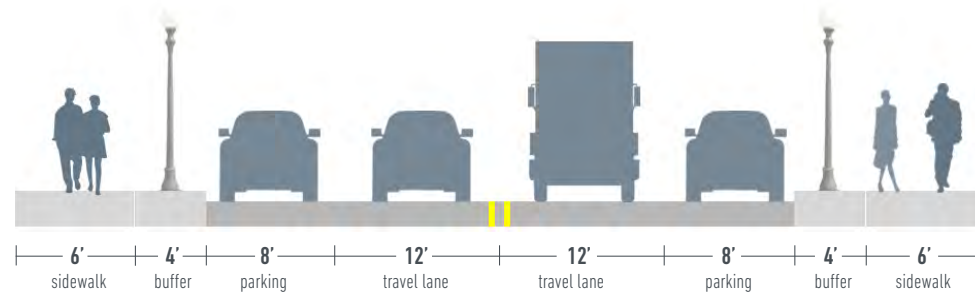
Timeframe	Street Name	Street Segment	Bikeway Classification	Vertical Separation Method	Long Term or Interim Treatment	Implementation Scale	Budget	Funding Status
2016	Jackson Street	Shepard/Warner Road to 7th Place	Major Bikeway	Curb	Long Term	Full street reconstruction	\$ 7,750,000	In-place
2017	Jackson Street	7th Place to 11th Street	Major Bikeway	Curb	Long Term	Full street reconstruction	\$ 7,750,000	In-place
	Jackson Street	11th Street to University Avenue	Major Bikeway	Curb	Long Term	Bridge modification, Full Street Reconstruction north of 12th Street	\$ 6,000,000	In-place
	Kellogg Boulevard	Jackson Street to Sibley Street	Major Bikeway	Curb	Long Term	Protected Bikeway on north side of street	\$ 500,000	In-place
2020 - 2021	9th /10th Street	History Center driveway to Broadway Street	Major Bikeway	Flexible Posts	Interim	Pavement markings, flex posts, and signage (Only)	\$ *660,000	Propose for CIB
	12th / St. Peter St	John Ireland Boulevard to Kellogg Blvd	Major Bikeway	Flexible Posts	Interim	Pavement markings, flex posts, and signage (Only)	\$ *440,000	Propose for CIB
	Minnesota Street	Kellogg Boulevard to 10th Street	Minor Bikeway	None	Interim	Pavement markings, flex posts, signage, asphalt overlay, sidewalk repairs	\$ *1,200,000	Propose for CIB
	4th Street	Minnesota Street to Broadway Street	Mixed Use	TBD	Interim	Pavement markings, flex posts, and signage (Only)	TBD	TBD
2020+	Kellogg Boulevard	John Ireland Boulevard to 7th Street	Major Bikeway	Curb	Long Term	Partial to full street reconstruction (no bridge reconstruction)	TBD	TBD
	History Center	Kellogg Boulevard to driveway on 10th Street	Major Bikeway	Curb	Long Term	Trail construction	TBD	TBD
	Kellogg Boulevard	7th Street to Jackson Street	Major Bikeway	Curb	Long Term	Full street reconstruction (no bridge reconstruction)	TBD	TBD
	St. Peter Street	John Ireland Boulevard to Kellogg Boulevard	Major Bikeway	Curb	Long Term	Full street reconstruction (no bridge reconstruction)	TBD	TBD
	9th Street/10th Street	History Center driveway to Broadway Street	Major Bikeway	Curb	Long Term	Full street reconstruction (no bridge reconstruction)	TBD	TBD
	4th Street	Washington Street to Minnesota Street	Mixed Use	TBD	Long Term	TBD	TBD	TBD

* 2018 dollars. Public Works will partner with advocacy groups to request funding in the 2020-21 CIB Budget process.

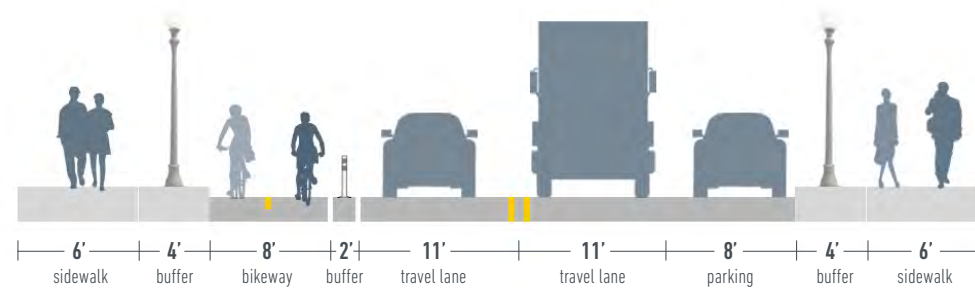
Figure 14: Capital City Bikeway Phasing Plan and Cost Estimates

9th Street / 10th Street

Existing Conditions



Interim Design



Proposed Conditions

