



Summit Avenue Regional Trail Master Plan

Saint Paul, MN | 2022

DRAFT IN
PROGRESS

Contents

01 Introduction and Planning Framework

- 5 Statement of Need
- 8 Introduction
- 9 Planning and Framework
- 10 Previous Planning Documents
- 18 Project Context
- 30 Related Projects and Agencies
- 31 Master Plan Schedule
- 32 Demand Forecast

02 Community Engagement

- 35 Summary of Engagement
- 36 Equity Analysis
- 41 Demographic Analysis
- 44 Public Engagement
- 60 Focused Engagement

03 Existing Conditions

- 63 Organization and Themes
- 64 Project Context
- 66 Historical Sites and Districts
- 68 Mississippi River Corridor Critical Area
- 70 Natural Resources
- 72 Mature Tree Canopy and Greenspace
- 78 Circulation, Connectivity, and Access
- 82 Roadway Characteristics
- 84 Traffic Analysis
- 88 Existing Conditions by Segment

04 Master Plan

- 103 Plan Approach
- 104 Project Vision
- 106 Development Concept
- 151 Accessibility
- 152 Wayfinding
- 153 Sidewalks and Pedestrian Infrastructure
- 155 Furnishings and Amenities
- 156 Public Art Process
- 157 Greenspace and Tree Canopy
- 158 Conflicts

05 Implementation

- 160 Project Phasing
- 160 Partner Engagement
- 161 Project Costs
- 163 Boundaries and Acquisition Costs
- 164 Operations and Maintenance
- 165 Natural Resources and Stewardship Plan
- 167 Public Services
- 168 Public Awareness

06 Appendix

- Project References
- Technical Memorandums
- Meeting notes



Acknowledgments

Design Advisory Committee*

***NOTE:** Organizations listed reflect those of which project staff reached out to as part of the Design Advisory Committee process. The degree to which participants engaged in the process varied by organization.

Acknowledgment does not reflect an organization's endorsement of the regional trail master plan.

Summit Hill Association
Capitol River Council
Macalaster-Groveland Community Council
Union Park District Council
Summit-University Planning Council
Friends of Saint Paul and Ramsey County
Parks and Trails
Disability Hub MN
Saint Paul Bicycle Coalition
Summit Avenue Residential Preservation Association (SARPA)
Grand Ave Business Association
Rondo Center of Diverse Expression
Saint Paul Youth Commission
Lexington-Hamline Community Council
Governor's Residence
Summit Manor Reception House
University of St. Thomas
Macalaster College
Saint Paul College
Hidden River Middle School
Mitchell Hamline School of Law
Cathedral of Saint Paul
Ramsey Hill Association
Saint Paul Parks Conservancy

Technical Advisory Committee

City of Saint Paul
Parks and Recreation
Forestry
Operations and Maintenance
Transportation Planning and Safety
Civil Engineering and Street Design
Structural Engineering
Planning and Economic Development (PED)
Heritage Preservation Commission (HPC)
Natural Resources
Real Estate
Bolton & Menk, Inc
Minnesota Department of Transportation (MnDOT)
State Historic Preservation Office (SHPO)
Department of Natural Resources (DNR)
National Park Service (NPS)
Capitol Region Watershed District (CRWD)
Capitol Area Architectural and Planning Board (CAAPB)
Ramsey County
Metropolitan Council
Metropolitan Environmental Services
Metro Transit
Community Development

Project Team

City of St. Paul

Andy Rodriguez (*Parks and Recreation Director*)

Parks and Recreation Design and Construction

Mary Norton
Brett Hussong
Katie Hamerlinck
Alice Messer

Public Works

Reuben Collins
Barb Mundahl
HunWen Westman
Jimmy Shoemaker
Eric McCarthy

Parks and Recreation Forestry

Rachel Coyle
Zach Jorgensen

Consultant Team

Bolton & Menk

Scott McBride
Maddie Dahlheimer
Cody Christianson
Mikaela Isaacson
Renee Barnes



Introduction and Planning Framework

Statement of Need

A notable parkway within the City of Saint Paul, Summit Avenue has been an important civic thread for recreation and transportation since its inception in the late 1800s. A parkway characterized by its grand boulevards and distinctive residential architecture, formally designed to create a continuous park-like experience from downtown Saint Paul to the Mississippi River. As described in the City's 1986 'Summit Avenue Plan', Summit Ave. is "a major, critical spoke in the City's structure, providing the community both form and beauty."

This critical spoke has been a part of local and regional planning fabric for decades. The parkway experience shaped from these visionary plans creates recreational opportunities every day for many people along a green oasis in the City of tree-lined boulevards and wide green space medians.

Embedded in this parkway experience, the City of Saint Paul Parks and Recreation Department looks towards the future of recreation by planning for a regional trail across the City. This trail would move people along Summit Avenue, Kellogg Blvd. and Eagle Parkway, creating connections between the Mississippi River Blvd. Trail to the Sam Morgan Regional Trail.

The Summit Avenue Regional Trail

IN
ESS

A Parkway Connection Across the City

Statement of Need

Local Bikeway

The local, on-street bikeway on Summit Avenue is one of the most heavily used bicycle routes in Saint Paul.¹ The bicycle lanes on Summit were introduced in the early 1990s making them some of the oldest bike lanes in the City.

The paved roadway space is currently striped on-street to create bicycle lanes, positioning the bicyclist between moving vehicles and parked cars. Creating the Summit Ave. Regional Trail would create a protected trail space, separating vehicles and bicyclists to increase comfort and perception of safety in a way that can suit all users and abilities.

Traffic along Summit Ave. ranges from 3,500 – 11,000 vehicles per day.² Federal, state, and local industry standards reflect recommendations to provide separated bicycle facilities when the number of average vehicles per day exceeds 6,500.

The Summit Avenue corridor has experienced a number of crashes along its approximately 4.5 mile length route from East River Blvd to Kellogg Blvd. Within a ten-year timeframe between 2012 to 2021 there has been a total of 31 bicyclist involved

crashes along the corridor (or 3 per year on average), 90% of which resulted in an injury or fatality.³

While the nature and circumstances of crashes vary, the less time a vehicle and pedestrian or bicyclist can potentially share the same space as a vehicle, the less opportunity there is for conflict.

¹ : Saint Paul Public Works Pedestrian and Bicycle Traffic Count | <https://www.stpaul.gov/departments/public-works/transportation-and-transit/bike-saint-paul/pedestrian-and-bicycle-traffic>

² : MnDOT Traffic Forecasting and Analysis | <https://mndot.maps.arcgis.com/apps/webappviewer/index.html?id=7b3be07daed84e7fa170a91059ce63bb>

³ : MnDOT and Ramsey County Crash Data Reporting | see appendix

Include photo(s) of local bikeway conditions

Statement of Need

Existing Roadway

Pavement conditions in the corridor reflect a variety of surface conditions and in many segments, a high-priority for either resurfacing or street reconstruction.

As infrastructure in the corridor is replaced, the City of Saint Paul would look for opportunities to coordinate improvements to the regional trail with the larger roadway improvements to the entire corridor. Developing a regional trail along Summit Ave. would be an opportunity to coordinate infrastructure improvements while creating a significant recreational parks amenity for the region.

Safety

Update text



Introduction

Project Purpose

Summit Avenue has been an integral part of the St. Paul community since the mid-1800s, and remains one of the most iconic and historic areas of the city. Over time, the purpose and use of this corridor has evolved with the needs of the community. This master plan aims to anticipate future needs of the corridor and plan implementation strategies that will maintain and preserve the iconic elements of Summit Avenue.

Project goals include:

- Evaluate and identify a regional trail alignment on Summit Avenue to improve recreation experience and safety for all users.
- Identify ways to balance the character of Summit Avenue when modernizing infrastructures including but limited to trees, greenspace, parking, vehicles, recreation, and historical designation.
- Improve connectivity and public access to parkland.
- Support the evolving needs of users to create a more resilient, people-oriented corridor.

Organization and Themes

The master plan includes analysis and recommendations at three scales:

- Regional Scale: includes the city of Saint Paul and adjacent cities; considers connections and access to regional amenities and existing transportation throughout the area
- Corridor Scale: focuses on the Summit Avenue corridor and adjacent streets
- Segment Scale: the corridor has been broken into seven segments to provide a more detailed look at each unique segment of Summit Avenue

Major themes explored within the master plan include:

- Regional greenspace amenities
- Mature canopy and greenspace
- Circulation, connectivity, and access
- Parking
- Historic and cultural context



Fig. 1-1 | Segments A-G within the Summit Avenue corridor

Planning and Framework

Metropolitan Council

The Metropolitan Council facilitates planning and funding for regional park and trail facilities including the proposed Summit Avenue Regional Trail corridor. A key objective for the Metropolitan Council within the Regional Parks System is preservation and restoration of natural resources to provide opportunities for recreation, stress reduction, and social interaction. As outlined in the Metropolitan Council 2040 Regional Parks Policy Plan, regional trails¹:

- serve the entire metropolitan area
- are developed for one or more varying modes of nonmotorized recreational travel
- are a sufficient length to serve as a link between two or more regional parks
- connect public interest destinations
- serve as a backbone to local trail networks with regional trail functioning much like a regional highway
- include sufficient corridor width to protect natural resources
- are off-road facilities; on-road facilities are acceptable when off-road trails are not feasible
- should not duplicate an existing trail
- should be placed where the trail treadway will have no adverse impact on the natural resources base

Regional trails are categorized further into

Destination Trails and Linking Trails. These facilities meet all of the above characteristics and are distinct in that:

- **Regional Destination Trails** or Greenways are a sufficient length and highly scenic to be considered standalone destinations. They are preferably adjacent to high quality natural areas. Destination trails are visually separated from the road system (more than 50% off-road)
- **Regional Linking Trails:** when feasible, should attempt to connect to population, economic and social centers along its route. May be on-road separated facilities. The proposed Summit Avenue Regional Trail is a regional linking trail connecting the Mississippi River Boulevard Trail to the Samuel H. Morgan Regional Trail via downtown Saint Paul.

Regional Trail Search Corridor

The Summit Avenue Regional Trail has been designated as a regional trail search corridor in the Metropolitan Council's 2040 Regional Parks Policy Plan. Search corridors intend to connect regional park and trail amenities to one another. A key purpose of this document is to define an alignment for the Summit Avenue Regional Trail in order to achieve the goals set out in the 2040 Regional Parks Policy Plan.

.....
1 : 2040 Regional Parks Policy Plan | [https:// metro council.org/METC/files/40/40d78518-295b-474e-a26c-e85f62b9e706.pdf](https://metro council.org/METC/files/40/40d78518-295b-474e-a26c-e85f62b9e706.pdf)

Previous Planning Documents

Existing planning documents adopted by the City provide parameters on how the Summit Avenue Regional Trail fits into the larger vision for the City. These planning documents are outlined below.

2040 Comprehensive Plan¹

St. Paul's Comprehensive Plan is a document meant to guide development in St. Paul for the next 20 years. It includes policies to address physical development, focusing on racial and social equity, aging in community, community/public health, economic development, sustainability/resiliency and urban design. Key sections of the document are highlighted below.

Celebrating Parks is one of the core values shaping the comprehensive plan for the City. Summit Avenue with its wide vegetated medians is characterized by many as a linear park. The alignment and design elements of the regional trail will support this character and use.

Community/Public Health is listed as a focus area of the comprehensive plan. The existing corridor serves as both an active transportation and recreation corridor enabling people to meet their daily physical activity needs. Enhancing this aspect with the regional trail will expand this function of the corridor and the geographic reach of the recreational user. Implementation of the

bike and pedestrian plans (outlined below) are included with the draft policy (policy # T-24 and T-25) to support community health for all.

Summit Avenue is identified as a major collector with an existing on-road bikeway. Additionally, it has been identified as a Regional Bicycle Transportation Network (RBTN) Tier 2 Corridor.

Regional Bicycle Transportation Network

The goals of the RBTN include establishing an arterial network of on-street bikeways and off-road trails throughout the metro area to accommodate bicycle trips connecting regional destinations.

Tier 1 and Tier 2 priority corridors are identified based on where they can most effectively promote active transportation mode choices (biking, walking, transit) and where supporting travel demand exists.

The **Transportation** chapter identifies the following goals. Notes on the subsequent policies which are applicable to this master planning process are included.

1. Investment that reflects the City's priorities
 - » T-3: Design per the following model hierarchy: pedestrians, bicyclists, transit, other vehicles
2. Safety and accessibility for all users
 - » T-7: Implement intersection safety improvements including pedestrian countdown times, leading pedestrian signal intervals, and other elements to lower motor vehicle speeds
 - » T-10: Design sidewalks, trails, and transit stops for personal safety (real and perceived)
 - » T-13: When street design changes involve the potential loss of on-street parking spaces, prioritize safety for all transportation modes. Explore mitigation of lost spaces where feasible and practical.
3. A transportation system that supports access to employment and economic opportunity.
4. True transportation choice throughout the city, with a shift from single-occupant vehicles toward other modes.
 - » T-24: Implement the Bicycle Plan
 - » T-25: Implement the pedestrian plan
5. Sustainable and equitable maintenance models.
6. Environmentally-sustainable design.

Previous Planning Documents

- 6. Environmentally-sustainable design.
- 7. Functional and attractive Parkways.
 - » T-41: Maximize space for recreation and landscaping uses with Parkway rights-of-way, and prioritize recreation and landscaping in Parkway design in order to maintain a park-like feel, particularly on the Grand Round.
- 8. A system that responds to technology and shapes its implementation.

1:City of Saint Paul 2040 Comprehensive Plan | https://www.stpaul.gov/sites/default/files/2022-01/CSP_2040_CompPlan_FinalAdopted_101521.pdf



Fig. 1-2 | 2040 Comprehensive Plan

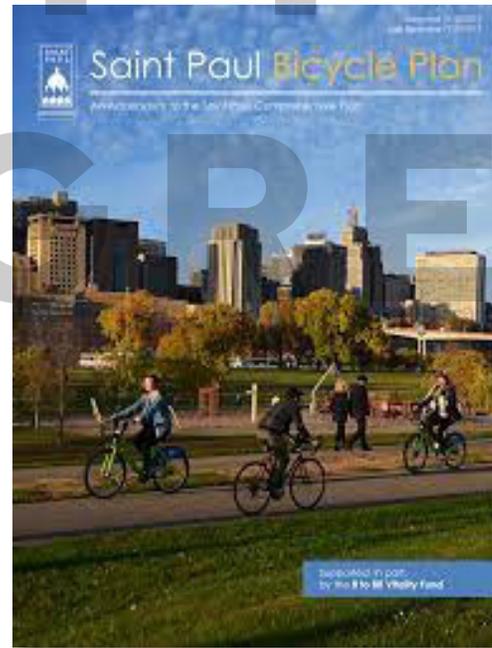


Fig. 1-3 | 2015 Bicycle Plan

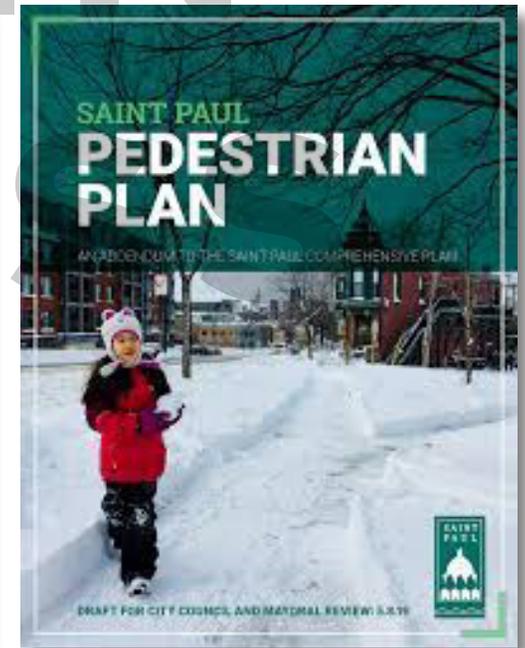


Fig. 1-4 | 2019 Pedestrian Plan

Previous Planning Documents

The *Parks, Recreation, and Open Space* chapter identifies the following goals. Notes on the subsequent policies which are applicable to this master planning process are included.

1. Equitable allocation of programs, resources and amenities.
2. People, programming and spaces responsive to changing needs.
 - » PR-9: Use customer and resident feedback on needs, satisfaction and trends to improve park experience, advance equity and bring in new users
3. Environmental and economic sustainability.
 - » PR-19: Improve the environmental sustainability and resiliency of parks through strategies such as shared, stacked-function green infrastructure; best management practices in stormwater management; increased tree canopy; increased plant diversity and pollinator-friendly plantings
4. A healthy network of community partnerships.
5. Strong and accessible connections.
 - » PR-35: Prioritize safety and equity when filling gaps in the trail and bikeway system to ensure seamless connections throughout the city for pedestrians and bicyclists of all ages and abilities.
 - » PR-36: Integrate parkways and trails with the city's broader transportation

network to provide convenient and safe access to the park system.

- » PR-38: Improve and encourage pedestrian and bicycle connections between park facilities and other significant destinations, such as lakes and rivers, schools, transit facilities and Neighborhood Nodes.
- » PR-39: Emphasize safety, convenience and comfort when designing new trails or rebuilding those that already exist.
- » PR-40: Provide interpretive elements to educate users about unique aspects of the park system
- » PR-41: Provide consistent wayfinding signage in each project or park so that it is recognizable as part of the broader City system.
- » PR-44: Support facility improvements that better connect neighborhoods to the Mississippi River

2015 Bicycle Plan¹

Summit Avenue currently has in-road striped bike lanes from Mississippi River Boulevard to John Ireland Boulevard and, according to the 2015 Saint Paul Bicycle Plan, is a major bikeway. In the plan, Summit Avenue is categorized as an *in-street separated lane* which includes bike lanes, buffered bike lanes, one-way cycle tracks, or two-way cycle tracks.

Regional trail corridors are intended to provide for recreational travel along linear pathways for bicyclists, pedestrians, and other users throughout the metropolitan area. Regional trails must be designated by the Metropolitan Council and are intended to pass through or provide connections between components in the Regional Parks System. Regional trails are defined in the Metropolitan Council's Regional Parks Policy Plan. Regional parks and trails identified in the Regional Parks Policy Plan are eligible for other funding sources.

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

¹ : Saint Paul Bicycle Plan | <https://www.stpaul.gov/sites/default/files/Media%20Root/Public%20Works/Saint%20Paul%20Bicycle%20Plan.pdf>

Previous Planning Documents

The Saint Paul Bicycle Plan identifies the existing regional trail, other linear trails that pass through regional parks, planned regional trails, and regional trail search corridors. The regional trail search corridors include Summit Avenue. The Metropolitan Council requires implementing agencies to prepare a master plan document for all planned regional trails. Regional trail search corridors are defined by the Metropolitan Council in the Parks Policy Plan.

Action Item 6.5.1

Actively pursue designation and development of additional regional trails...Identify regional trail alignments within the regional trail search corridors and prepare regional trail master plans for trails where alignments are known.

*Note: the City of St. Paul is currently updating the Bicycle Plan. Coordination between that planning document and this master plan will guide development of the Summit Avenue Regional Trail.

2019 Pedestrian Plan²

The Saint Paul Pedestrian Plan addresses citywide walking needs such as connecting the sidewalk system, providing safer ways to cross streets and education and enforcement programs to support safe

walking. It includes recommendations to achieve the plan's vision: Saint Paul is a walking city—we are more healthy, resilient and connected when walking is safe and appealing for all.

Saint Paul community members have identified three priorities for making walking safer and easier:

- Crossing busy streets
- Filling sidewalk gaps
- Improving snow and ice removal

Summit Avenue from Hamline Ave to Lexington Pkwy and from St Albans St to John Ireland Blvd are identified as medium priorities based on census tracts for sidewalk investment. There are no priority segments of Summit Avenue identified as sidewalk gaps.

The following actions are included in the Saint Paul Pedestrian Plan to improve pedestrian safety and comfort at busy street crossings.

1-1. Plan, design, build and maintain the city's transportation system in a way that prioritizes walking first, followed by bicycling and transit use and lastly other vehicles.

1-2. Advocate for a statewide reduction in urban speed limits as part of the city's legislative agenda.

1-3. Follow best practices for marking crosswalks. Convert crosswalks marked with parallel bars to high-visibility crossings to improve visibility of crosswalks. Whenever possible, use durable crosswalk marking materials.

1-4. Ensure visibility of pedestrian crossings. Review street lighting, sign placement, street furniture, bus shelters, foliage growth, and parking restrictions at intersections as part of all reconstruction projects and requests for crossing improvements.

1-5. Establish a consistent process for reviewing, improving and prioritizing pedestrian crossings. Review and update policies as necessary to incorporate best practices and national guidelines. Apply these policies to all projects and requests that include crossing improvements.

1-6. Reduce pedestrians' exposure to motor vehicles and lower street design speeds. Pursue changes in street designs that lower design speeds and reduce roadway crossing widths.

1-7. Coordinate with transit providers and the Saint Paul Bicycle Plan to ensure pedestrian solutions complement bicycling and transit needs.

² : Saint Paul Pedestrian Plan | <https://www.stpaul.gov/sites/default/files/Media%20Root/Public%20Works/Saint%20Paul%20Pedestrian%20Plan%206.13.19%20Compressed.pdf>

Previous Planning Documents

1-8. Develop a program to proactively implement infrastructure improvements in high crash risk locations. Conduct a Pedestrian Systemic Safety Analysis to identify the highest risk locations for pedestrian crashes. Develop a prioritized list of candidate pedestrian safety improvements on high-risk streets and a five-year plan for implementation.

1-9. Dedicate additional funding to improve pedestrian crossings in conformance with best practices and support on-going maintenance of these treatments.

1-10. Provide regular crossing opportunities on collector and arterial streets, prioritizing streets in High Priority Areas for Walking Investments.

1-11. Work with partners to support safe walking environments through initiatives like Crime Prevention through Environmental Design, lighting improvements, neighborhood walks, and trash cleanup.

1-12. Identify resources to improve on-going maintenance of existing crossing facilities, including snow and ice removal at crossings, crosswalk markings and replacement of flexible traffic posts in temporary crossing improvements.

2-1. Design streets in accordance with Saint Paul's Street Design Manual to promote a

comfortable walking environment on all street types in Saint Paul.

3-1. Pursue opportunities to install and maintain interim pedestrian crossing improvements using low-cost materials.

3-2. Review and update the Saint Paul Department of Public Works Temporary Pedestrian Access Route (TPAR) policy (originally adopted 2014) to define requirements for TPAR implementation and mandate use of best practices identified by Public Right-of-Way Accessibility Guidelines. Proactively inspect TPARs and enforce contractor compliance with city policy.

3-3. Maximize impact of capital projects through coordination with partner jurisdictions such as Ramsey County, MnDOT and Metro Transit. Define internal structure for managing external partnerships and identifying opportunities to maximize use of resources during capital projects

Saint Paul Climate Action & Resilience Plan¹

This plan outlines a series of strategies to achieve the City's ultimate goals of carbon neutrality by 2050 and a 50% reduction in carbon emissions by 2030. Transportation is noted in the document to be the largest source of carbon emissions, and that reducing carbon emissions is critical to meeting the City's resiliency goals.

The plan highlights the need for improved and additional bicycle and pedestrian infrastructure to ensure that communities are connected by a diverse range of transportation modes. The plan states a specific goal of ensuring that "85% of Saint Paul residents have safe access to protected active transportation facilities", with a target of constructing 300 miles of new bikeways by 2050. Key initiatives also recommend prioritizing protected bicycle facilities over unprotected or shared bicycle lanes.

¹ : Saint Paul Climate Action & Resilience Plan
<https://www.stpaul.gov/sites/default/files/Media%20Root/Mayor%27s%20Office/Saint%20Paul%20Climate%20Action%20%26%20Resilience%20Plan.pdf>

Previous Planning Documents

Neighborhood Plans

The Summit Avenue Regional Trail corridor is located within six of St. Paul's 17 districts. The district councils or other community organizers have led the process for creating or revising district and small areas plans.

The districts that surround the Summit Avenue corridor and their corresponding district or community plans are listed below, along with excerpts from their district or community plans that support the vision of the Summit Avenue Regional Trail:

⑧ **Summit-University (District 8) Plan**

« <https://www.stpaul.gov/DocumentCenter/View6/9165.pdf> »

- Create an environment in which traveling from one place to another is safe and convenient for all modes of travel including walking and biking.
- Encourage businesses to make parking lots available to others during non-peak or on-business hours.
- Develop strategies that provide for safe and efficient walking and biking within the neighborhood.

⑨ **District 9 Area Plan**

« <https://www.stpaul.gov/DocumentCenter/View4/66861.pdf> »

- Link the community of West 7th to the amenities and opportunities within and

outside of the community.

- Respect the Mississippi River as a community asset, limit new building on the river and seek opportunities to connect the neighborhoods to the riverfront.
- Improve connections between parks to create a system of greenways.

⑬ **Union Park Community Plan**

« <https://www.stpaul.gov/sites/default/files/Media%20Root/Planning%20%26%20Economic%20Development/Union%20Park%20District%20Plan%202016.pdf> »

- Support improved means for pedestrians and bicyclists to reach transit lines safely.
- Support the implementation of the City of Saint Paul's bicycle plan in a way that maximizes effectiveness for all users of the right-of-way.
- Support efforts to create a safer biking environment by promoting strategies such as separated lanes, more visible striping, off-street bicycle paths, and lower vehicular speed limits on shared roads.

⑭ **Macalaster-Groveland Community Plan**

« https://www.stpaul.gov/sites/default/files/Media%20Root/Planning%20%26%20Economic%20Development/D14_MGCC_PLAN_FINAL_ADOPTED_Flat.pdf »

- Preserve and enhance existing parks and greenspaces.

- Increase use/ease of nonmotorized transportation.
- Advocate for the connection of districts' bike paths to the citywide network.
- Find creative solutions to new non-motorized transportation infrastructure.
- Dedicate more bike routes within the district and City.
- Partner with local businesses to encourage alternative transportation use
- Support the implementation of comprehensive citywide bicycle policies that are easily adaptable to a growing bicycle community.

⑮ **Summit Hill/District 16 Neighborhood Plan**

« <https://www.stpaul.gov/DocumentCenter/View7/Summit%2520Hill%2520Plan%2520Summary-District%252016.pdf> »

- Preserve the pedestrian-friendly, historic residential and commercial character of the Summit Hill neighborhood by providing a healthy balance of transportation options.
- Improve pedestrian safety and improve the quality of pedestrian and bicyclist experience.

Previous Planning Documents

⑰ Downtown Saint Paul Development Strategy

« <https://www.stpaul.gov/DocumentCenter/View/3104.pdf> »

- Downtown Saint Paul will have a first-class, balanced, integrated transportation system that supports its economic vitality, mixed-use character and quality of life.
- Bicycle access to, within and through downtown will be enhanced.
- Improve the connection from adjacent bicycle trails to downtown streets

In addition to these, design and planning guidelines for the two historical districts that overlay Summit have been developed:

- Historic Hill District Guidelines
- Summit Avenue West District Guidelines

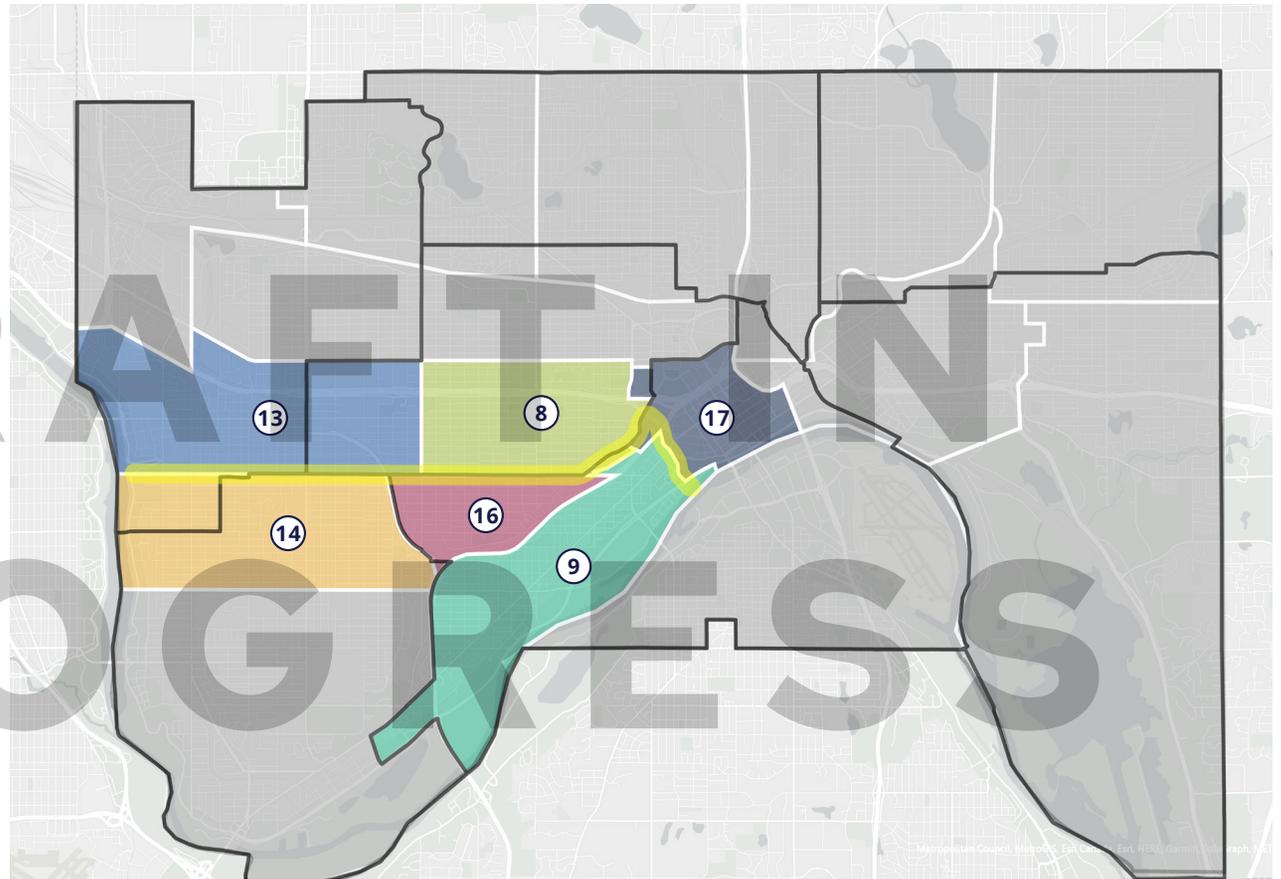


Fig. 1-5 | Saint Paul Neighborhoods and Wards



Project Context

The project area encompasses approximately a 5.5-mile corridor along Summit Avenue, Kellogg Boulevard, and Eagle Parkway, beginning at Mississippi River Boulevard and ending at Shepard Road.

The proposed Summit Avenue trail facility provides a connection to Mississippi River Blvd Trail at its west end, and Samuel H. Morgan Regional Trail on the east end. The proposed facility also intersects with the bike trail at Ayd Mill Rd, and provides a potential future connection with Lexington Pkwy, a designated regional trail search corridor.

- *Text about connections to other regional parks and trail*
- *Regional amenity - importance of east/west connection here (equity, accessibility, and connection to downtown)*

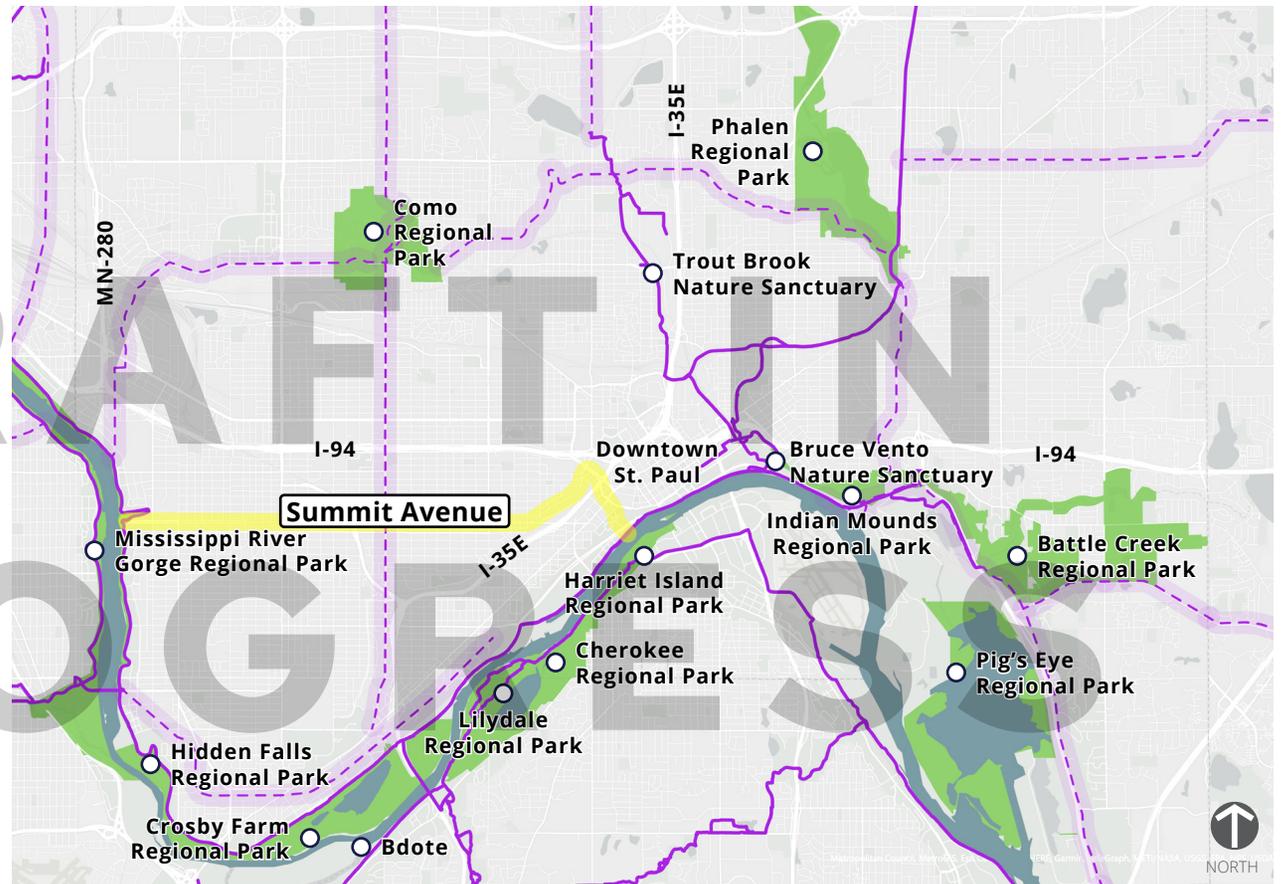
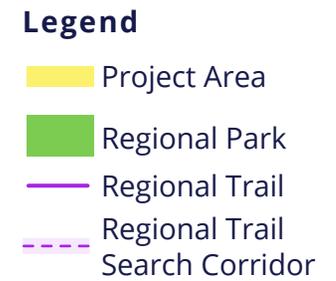
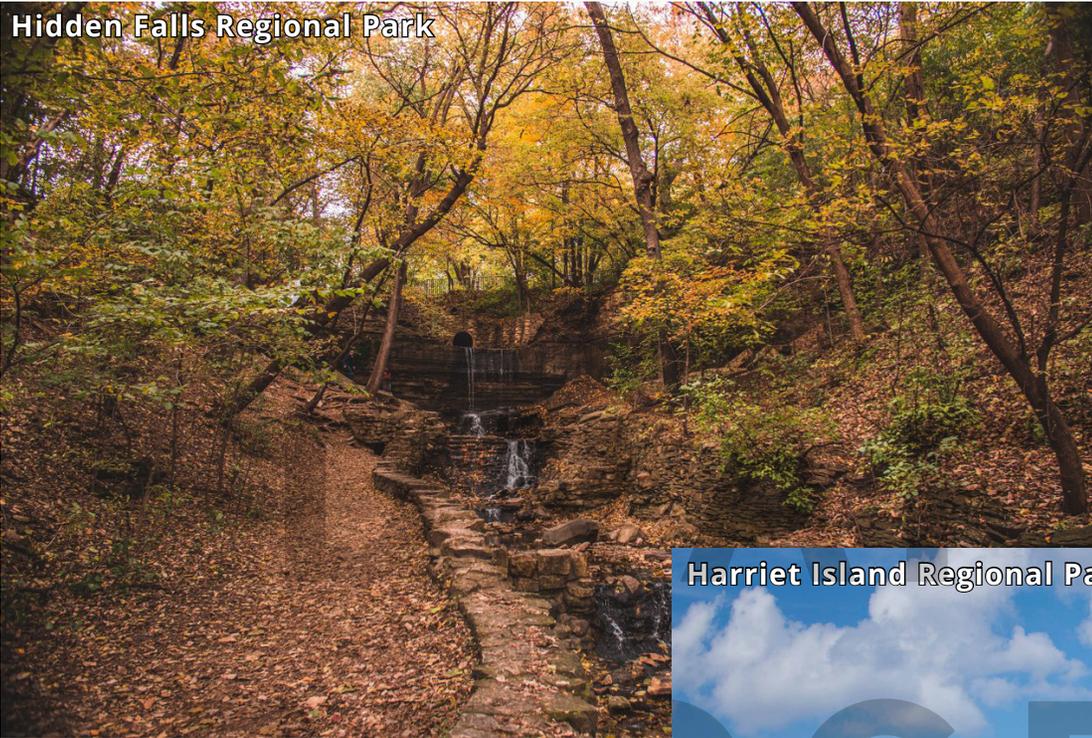


Fig. 1-6 | Regional Park and Trail Amenities



Hidden Falls Regional Park



Downtown Saint Paul



Harriet Island Regional Park



Sam Morgan Regional Trail



Project Context

Mississippi River Corridor Critical Area (MRCCA)

The Mississippi River Critical Corridor Area (MRCCA) is a joint state, regional, and local program that provides coordinated land use planning and zoning regulations for the section of the Mississippi River within the seven-county region. The MRCCA was designated a state critical area in 1976 to protect its natural, cultural, and scenic resources through development standards issued in government land use plans and zoning ordinances.¹

The Summit Avenue Regional Trail touches the MRCCA at the eastern and western most edges of its alignment. The required MRCCA chapter in the City's Comprehensive Plan includes the following guidance on *Open Space & Recreational Facilities*:²

- **Policy CA-35.** Maintain and expand public access to the river's edge
- **Policy CA-36.** Maintain and expand open space and recreational facilities along the river, connect them with one another as part of the Great River Passage, and connect them to adjacent neighborhoods.
- **Policy CA-38.** Encourage the creation, connection, and maintenance of open space, recreational facilities, and other public connection to the Mississippi River

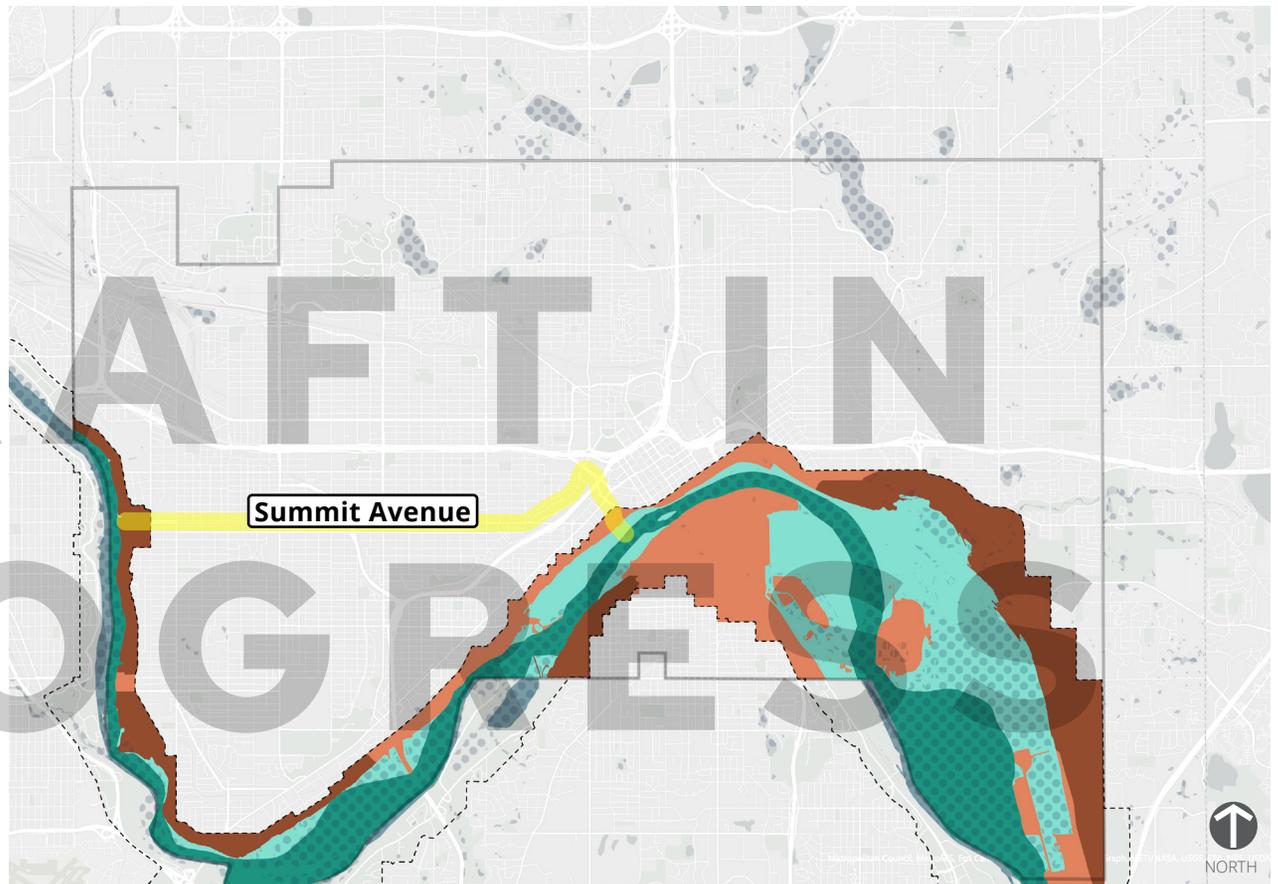


Fig. 1-7 | MRCCA and Project Site

Legend

- | | | | |
|---|----------------------|---|---------------------------|
|  | Project Area |  | Urban Diversified Overlay |
|  | MRCCA Boundary |  | Urban Open Overlay |
|  | Floodway Overlay |  | Delineated wetland |
|  | Flood Fringe Overlay | | |

DRAFT IN PROGRESS

Include photo at area within MRCCA

1: MnDNR | https://www.dnr.state.mn.us/waters/watermgmt_section/critical_area/index.html

2: Mississippi River Corridor Critical Area
https://www.stpaul.gov/sites/default/files/2021-05/CA_Chapter_FinalAdopted_110920.pdf

Project Context

Project Segments

In this Master Plan, the Summit Avenue corridor is broken into segments based primarily on roadway characteristics driven by public right-of-way widths.

Segments A and C are characterized by a wide grass median and a 200' ROW. Segment B is the only segment in the corridor with a double median condition, with two-way traffic in the center lane, and two one-way frontage roads on the north and south sides of the 200' ROW. The segments east

of Lexington have no median, with the exception of sporadic medians at larger intersections near Kellogg Blvd. Generally, these eastern segments have a 100' ROW.

Each of these segments also has its own distinct character including park-like residential areas, institutional zones, historical corridors, and urban sections as the corridor enters downtown. The master plan examines each segment and considers the differences between them and how those differences influence the proposed trail.

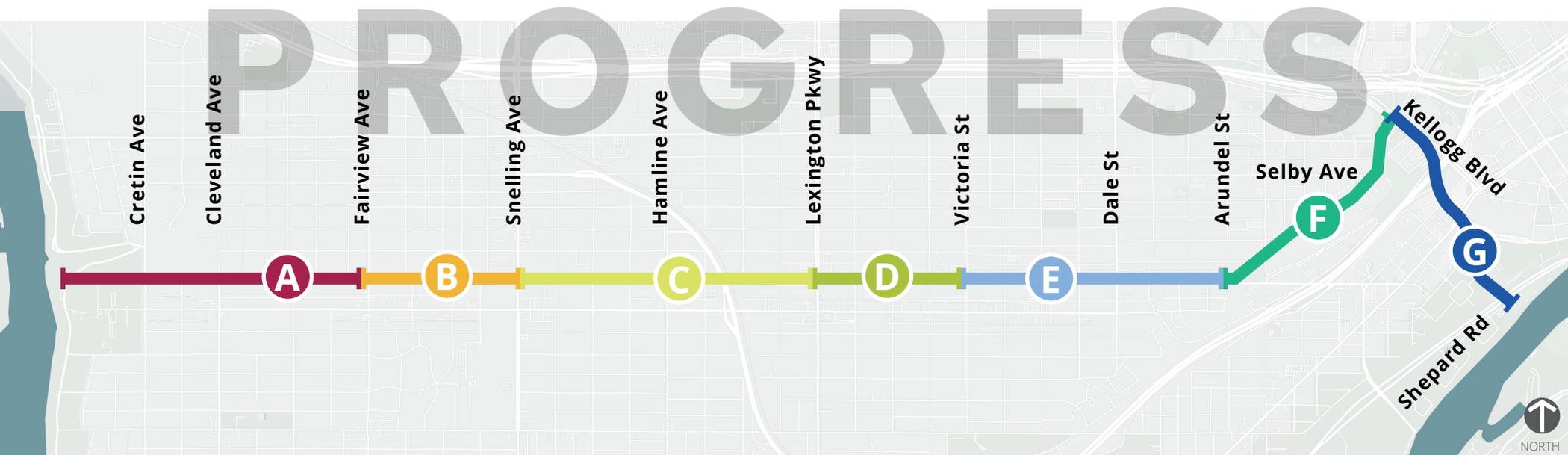


Fig. 1-8 | Summit Avenue Regional Trail - Segment Map

Project Context

Historical Context

Summit Avenue is one of the most iconic public spaces in the Twin Cities with national recognition. Incorporating a regional trail connection between the Mississippi River to Downtown St. Paul through this historic corridor requires careful consideration and sensitivity of the corridor context to create a value-adding amenity.

The following historic districts overlay Summit Avenue:

- **National Register of Historic Places** (National Park Service - NPS)
 - » West Summit Avenue Historic District: Summit Avenue between Lexington Parkway and Mississippi River Boulevard (corridor segments A-C)
 - » Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Lexington Parkway to the intersection with Dayton Avenue (corridor segments C-F)
- **State Historic District** (State Historic Preservation Office - SHPO)
 - » Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Ayd Mill Road to the intersection with Marshall Avenue (corridor segments C-F)
- **Local Historic Districts** (City of St. Paul Historic Preservation)
 - » West Summit Avenue Historic District: Summit Avenue between Lexington

Parkway and Mississippi River Boulevard (corridor segments A-C). *The extents of the local and national districts vary slightly, but include the same corridor segments as part of this trail master plan.*

- » Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Lexington Parkway to the intersection with Dayton Avenue (corridor segments D-F)
- Historic Sites: Historic sites along the corridor include:
 - » Dr. Ward Beebe House, 2022 Summit Avenue (local and nationally listed)
 - » Pierce and Walter Butler House, 1345-1347 Summit Avenue (local and nationally listed)
 - » Irvine, Horace Hill, and Clotilde House (Governor’s Mansion), 1006 Summit Avenue (local and nationally listed)
 - » F. Scott Fitzgerald House (Summit Terrace), 587-601 Summit Avenue (local, state, and nationally listed)
 - » Burbank-Livingston-Griggs House (James C. Burbank), 432 Summit Avenue (local, state, and nationally listed)
 - » James J. Hill House, 240 Summit Avenue (local, state, and nationally listed)
 - » Cathedral of Saint Paul, 239 Selby Avenue/225 Summit Avenue (nationally listed)

Laws and Responsibilities

Federal, state, and local laws can guide the work that occurs within or adjacent to the historically significant properties. These laws also dictate the parties that should be involved in decisions regarding the work within these properties.

Federal Laws and Guidance

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies consider the effects of undertakings/projects involving historic properties. An undertaking can be any construction project the federal government provides money to, permits, or has jurisdiction over. Therefore, a project with a federal tie must adhere to Section 106 regulations. Since the Summit Avenue area has been researched intensely, most of the regulations that relate to Assessment of Effects on historic properties will be the most useful. An Effect is defined as “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.” In addition to the NHPA guidance, the National Park Service (NPS) provides guidance on how to limit adverse effects of new construction within the boundaries of historic properties within their Standards for Rehabilitation, specifically Standard 9 but also expanded to be more specific on their website¹. Additionally, the NPS has developed guidance specifically for

Project Context

Cultural Landscapes². In the broadest sense a cultural landscape is a historically significant property that shows evidence of human interaction with the physical environment. Even though the historic districts discussed below were listed prior to a formal definition of cultural landscapes by the NPS, it is important to take these guidelines for their treatment into consideration. The NPS guidance provided below will aid in the discussion about new features or designs that could be incorporated into the historic districts. If a project has a federal nexus, the designated federal agency will need to participate in review of the undertaking and decide on whether proposed actions will cause an adverse effect to the National Register properties.

State Laws

The Minnesota Historic Sites Act (MS 138.661-138.669) states that the state, state departments, agencies, and political subdivisions (which responsible government unit [RGU], i.e. cities or municipalities) have a responsibility to protect the physical features and historic character of the properties listed in the National Register or in the State Register. If a project only has state or local involvement, the State Historic Preservation Office (SHPO) would be consulted regarding the undertaking, determine appropriate treatments, and seek ways to avoid, minimize, and/or mitigate any adverse effects on the designated or listed properties.

Local Laws

Lastly, if a city has adopted a historic designation for districts or individual properties, they may have their own guidelines written in the municipal code that provide guidance regarding protecting the physical features and historic character of these properties. Specifically, the City of St. Paul's Code of Ordinances Chapter 74, Articles I and II relate to the district's Summit Avenue West Heritage Preservation District and Heritage Hill Historic Preservation District, respectively.³ The focus of the ordinance are the structures within the district rather than the streetscape, but there are a few references to public infrastructure, new construction, landscaping, and signs that will be valuable in guiding design within the districts. As specificity and details of the plan are finalized, Heritage Preservation Commission (HPC) staff will provide guidance through plan review and comment.

Character Defining Features

Historic Hill District

The Historic Hill District encompasses many more streets than just Summit Avenue and the bulk of the focus of this nomination is on the substantial structures in this district. For this early nomination character defining features are not called out directly, especially not in relation to the streetscape. The nomination is split into areas and "Area 2" is reserved just

for the sixteen-block segment of Summit Avenue from Kellogg Boulevard to Lexington Parkway. The historic context does say that Summit Avenue was and still is home to large mansion-type residential properties on spacious lots. Summit Avenue was the first offshoot from the main downtown area, and it provided excellent building sites on the bluff's edge. The nomination also points out it was undeveloped and a clean slate for development with plenty of space to build large homes.⁴ It is expected that with these large homes, associated landscape and streetscape would also be very important. Other resources help to determine that the street width was planned early on. The 1888 and 1903 Sanborn Maps for Summit Avenue shows a 100-foot avenue. In comparison, adjacent streets Grand Avenue to the south was 80 feet and Portland Avenue to the north was 66 feet. A review of other streets in Saint Paul on these maps indicate that 66 feet was the normal street width.⁵ Thus the layout of Summit Avenue was unique and distinctive, relative to surround roadways, from a very early timeframe within the city.

¹ : National Park Service | <https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>

² : National Park Service | <https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm>

³ : The National Register listing names the Heritage Hill Historic Preservation District as Historic Hill District.

⁴ : National Park Service | <https://npgallery.nps.gov/GetAsset/a8ab70fe-59a3-4d80-b71f-181710588c01>

⁵ : National Park Service | <https://npgallery.nps.gov/GetAsset/a8ab70fe-59a3-4d80-b71f-181710588c01>



▲ *James J Hill House, ca. 1905*
Credit: Minnesota Historical Society

Project Context

West Summit Avenue Historic District

The West Summit Avenue Historic District encompasses mainly the parcels fronting Summit Avenue. This nomination was completed in the early 1990s and offers more insight into the character-defining features of the streetscapes. In the description of the property types found in the district it notes that the district includes “the parkway and its electric lighting stretching from Lexington to Mississippi River Boulevard, one marble sidewalk, wrought iron and/or brick fences, brick piers, a monument, a flagpole, and miscellaneous outbuildings.” It goes on to call out the “most visually distinguishing feature of the avenue is its width and median boulevard.” From Lexington to mid-block west of North Saratoga Street and from just east of North Wheeler Street to Mississippi Boulevard, Summit Avenue maintains a 200-foot-wide street with a median encompassing 90 feet of that width. The nomination goes on to state that this wide boulevard was accomplished by a group of citizens in 1886 who organized as the Summit Avenue Boulevard and Park Association to widen the street. Property owners along this stretch gifted the land to the city to accomplish this. The boulevard was started the next year. This interest in a boulevard also has its roots in the hiring of H.W.S. Cleveland, who consulted for the City of St. Paul on the outline of the park system in the city. Cleveland noted Summit Avenue as an

excellent area for such a parkway with wide boulevards and he advocated that these were superior to isolated and discrete neighborhood parks.⁶ Considering the interest in the public to create a street that was grand and noteworthy, Summit Avenue did experience some neglect in the beginning years as noted in park board annual reports from 1898, 1901, and 1903, but by 1907 it was noted that the avenue was in good condition and trees were trimmed. It remained a dirt road until sometime around 1913-1924 when it was completely paved.⁷ Granite curbing is not called out in the nominations but was widely used throughout St. Paul and is still used in portions of Summit Avenue. If an inventory of the remaining granite curb along Summit has not been completed recently, it is recommended that is done before any work on the street is performed.

After a review of these sources, it is clear that the character-defining features are:

- The width of Summit Avenue
 - » 100 feet between Kellogg Blvd and Lexington Pkwy
 - » 200 feet between Lexington Pkwy and Mississippi River Blvd
- Maintaining the 90-foot median where it exists between Lexington Pkwy and Mississippi River Blvd
- If granite curbs or marble sidewalks do still exist, these should be considered character-defining features and incorporated back into place if possible.

- Maintaining the general rhythm of trees and manicured lawn/vegetation in the median and on the boulevards.

Heritage and Cultural Preservation

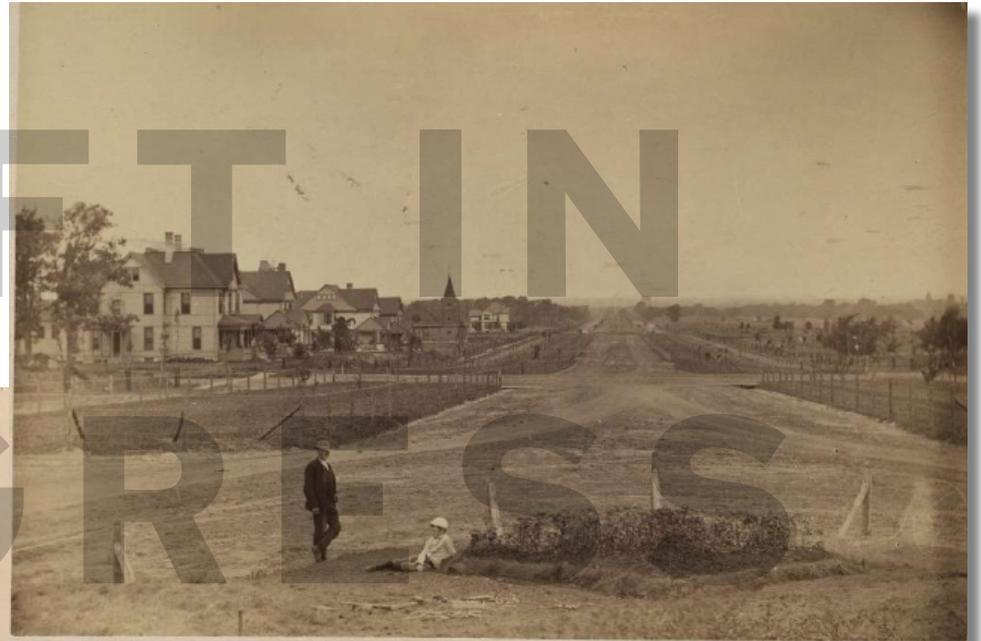
Saint Paul Comprehensive Plan

The City’s Comprehensive Plan outlines strategies for heritage and cultural preservation within Saint Paul: “The City’s activities associated with the preservation, rehabilitation, restoration, and reconstruction of historic and cultural resources should be sustainable and equitable; improve the quality of life for all residents and visitors; guide public and private investment; express a sense of place and pride; celebrate the racial, ethnic, and cultural diversity of the community; and be embraced in all facets of the City’s work”.⁸ The Plan emphasizes a process that is educational and inclusive, and that is integrated with other components of the Comprehensive Plan.

⁶ : <https://npgallery.nps.gov/GetAsset/109d6f44-c9af-4cb2-8f63-4ad938f772f0>
⁷ : <https://npgallery.nps.gov/GetAsset/109d6f44-c9af-4cb2-8f63-4ad938f772f0>
⁸ : https://www.stpaul.gov/sites/default/files/2022-01/CSP_2040_CompPlan_FinalAdopted_101521.pdf



◀ View of Summit Ave from rooftop,
looking northwest, circa 1900
Credit: Minnesota Historical Society



▲ View of Summit Ave. near Macalester
College, looking west, 1890
Credit: Minnesota Historical Society



◀ View of Summit Ave. looking west,
circa 1900
Credit: Minnesota Historical Society

Project Context

Pre-European Settlement

Dakota Tribal land

Saint Paul stands on the ancestral, traditional, and contemporary Dakota homelands.

As we consider that the many legacies of violence, displacement, migration, and settlement has brought us to current day, we commit to understanding, respecting, supporting, and advocating for Indigenous People and for this land.

Let this land acknowledgment be more than a reminder. Let it be a marker in time of dedicating ourselves to be better and do better. Through this land acknowledgment, let us lead to make changes which respect history.

1880s

First major wave of home construction along Summit Avenue

Summit Avenue Improvement Association formed to encourage property owners along Summit Ave to donate their land adjacent to the roadway to widen the public ROW, creating the iconic park-like median

1890s

City of St. Paul creates single- and double-family residential zoning district along Summit Avenue

1805

Under orders from Thomas Jefferson, Lt. Zebulon Pike purchases a tract of land from the local Dakota tribe that consists of nine miles of land along the Mississippi River, including present day Summit Avenue.

1887

Cable car line constructed on Selby Avenue

1887

James J. Hill House constructed

1862

US-Dakota War

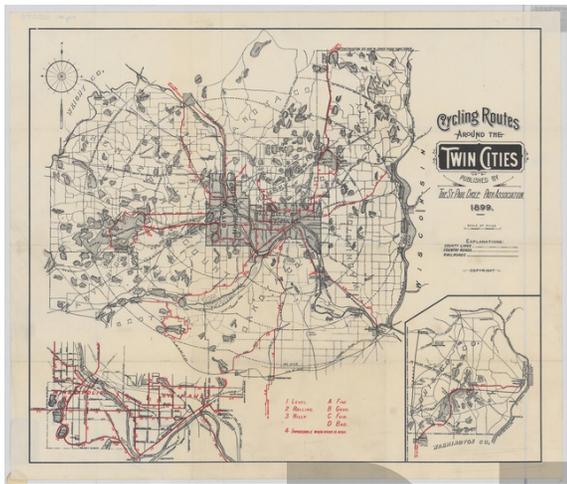
1855

First house of Summit Avenue built by Edward Duffield



1890

First streetcar in St. Paul constructed on Grand Avenue



1890s

National "Bike Boom" - bikes became safer, lighter, and more affordable. St. Paul residents advocated for more bike routes through the city

"Other cities have constructed cycle paths earlier in the history...but few, if any have such routes which are more enjoyable or picturesque than will be that which the wheelmen of St. Paul are to build..." "All the way it runs through a beautiful country, and for the most part over roads of long standing, where the foundation is already firm enough for the ideal cycle path."

Excerpt from the St. Paul Daily Globe, May 10, 1896

1986

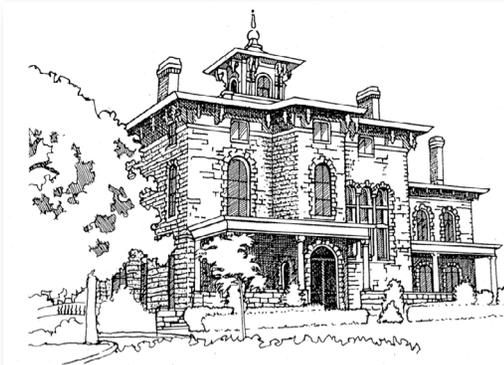
The "Summit Avenue Plan" is developed by City Planning and Economic Development

1929-1933

Great Depression: Construction of new homes on Summit Avenue slows significantly during this time period

1976

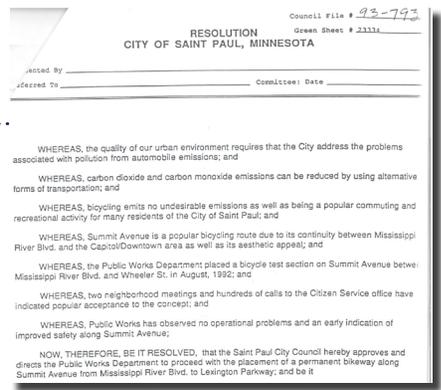
Creation of Historic Hill National Register District



Historic Hill Heritage Preservation District - Guidelines for Design Review

1993

City of St. Paul implements on-street bike lanes on Summit Avenue



2008

The American Planning Association (APA) names Summit Avenue as one of its 10 Great Streets

Future

Construction and implementation of master plan elements

2022

Development of Summit Avenue Regional Trail Master Plan to guide future development along the Summit Avenue corridor

Related Projects and Agencies

Saint Paul Public Works

Summit Avenue Reconstruction (Lexington Pkwy - Victoria St)

The scope and timing of construction activities between Lexington Pkwy and Victoria St are currently under review in an effort to coordinate the recommendations of this master plan with design and implementation of roadway improvements and trail implementation along the corridor.

Capital City Bikeway

The Capital City Bikeway is a planned network of bicycle facilities through downtown Saint Paul. A segment of the bikeway is planned on the north side of Kellogg Blvd between John Ireland Blvd and Sibley St. This facility is planned to be a two-way protected bikeway on the south side of Kellogg Blvd. Coordination between the Capital City Bikeway and the Summit Avenue Regional Trail will be explored through the alignment concepts.

Summit Avenue Resurfacing

St. Paul Public Works has a mill and overlay (resurfacing) project planned for 2022 on Summit Avenue between Snelling Avenue and Lexington Avenue.

Grand Avenue Reconstruction

Planned for construction in 2024, the Grand Avenue Reconstruction project includes work on Grand Avenue from Snelling Ave to Fairview Ave to address safety issues for pedestrians and vehicles at intersections along the corridor, specifically near the Macalaster College campus. Community engagement will begin in 2022 with the opportunity to coordinate with the planning and engagement efforts for this master planning process.

Ayd Mill Road (completed 2020)

The Ayd Mill Road Improvement Project implemented a new 3-lane street design and a new shared pedestrian and bicycle trail along the east side of Ayd Mill Road between Interstate 35E and Selby Avenue.

Master Plan Schedule

FALL - WINTER 2021

PHASE 1: CORRIDOR EVALUATION

Corridor inventory and analysis

Reach out to stakeholders and community members

Identify corridor opportunities and constraints

Community outreach events

Web survey

WINTER - SPRING 2021/2022

PHASE 2: DESIGN AND DIRECTION

Begin conceptual design ideas

Identify focus areas and key intersections

Gather input and feedback from technical and community groups

Continue online engagement

Technical Advisory Committee Meeting #1

Design Advisory Committee Meeting #1

SUMMER 2022 - WINTER 2023

PHASE 3: FINAL MASTER PLAN AND APPROVALS

Develop corridor trail concepts for feedback

Draft master plan document for review and public comment

Refine Master Plan

Approval Process includes:

- Heritage Preservation Commission (HPC)
- Saint Paul Transportation Commission
- Saint Paul Parks Commission
- Saint Paul City Council
- Metropolitan Council Parks and Open Space Commission

Continue online engagement

Technical Advisory Committee Meeting #2

Design Advisory Committee Meeting #2

Demand Forecast

Today, Summit Avenue is one of the most used locations for both cyclists and pedestrians. Data collected in 2019 reports that several segments of Summit Avenue are some of the most popular walking and biking destinations in the City.

2019 Data:¹

Top bicycling locations in St. Paul:

1. Marshall Ave Bridge
- 2. Summit Ave east of Fairview Ave**
3. Ford Pkwy Bridge
4. Marshall Ave west of Cleveland Ave
5. Mississippi River Blvd south of Emerald St.

Top walking locations in St. Paul:

- 1. Summit Ave east of Cleveland Ave**
2. Cleveland Ave south of Summit Ave
3. Mississippi River Blvd south of Jefferson Ave
- 4. Summit Ave east of Fairview Ave**
- 5. Summit Ave east of Western Ave**

The Metropolitan Council also conducted a 2019 report estimating use of the Regional Parks system, including both regional parks and trails. Key findings from this report include:²

- An estimated 63.3 million visits were made to the Regional Parks System. This is a 6.3% increase over 2018 and the most estimate visitation on record.
- Summer 2019 visitors included approximately 12,000 scooter-riders,

and 387,000 cyclists. The regional system includes almost 400 miles of trails, with annual trail use reaching over 15 million visits.

Looking at overall population trends within the Twin Cities Metropolitan region, a 2021 report from the Metropolitan Council predicts that between 2020 and 2050:³

- The Twin Cities region will gain 818,000 residents
- Black, Latino, and Asian populations will more than double
- The population of residents over 75 years old will double by 2030, and triple by 2050

The study also estimates that by 2050, 44% of Twin Cities residents will be people of color, and that 22% of Twin Cities residents will be over the age of 65.

Comparable Trails

To anticipate trail usage for the Summit Avenue Regional Trail, demand and use trends from other trails with similar characteristics have been evaluated.

Trail Name	Annual Users (2019)
Samuel H. Morgan Regional Trail	575,000
Robert Pira Regional Trail	XX
Mississippi River Boulevard Trail	XX

¹ : Saint Paul Public Works Pedestrian and Bicycle Traffic Count | <https://www.stpaul.gov/departments/public-works/transportation-and-transit/bike-saint-paul/pedestrian-and-bicycle-traffic>

² : Metropolitan Council Play Features | <https://metro council.org/Parks/Publications-And-Resources/PARK-USE-REPORTS/Annual-Use-Estimates/PlayFeatures-Visits-to-the-Regional-Park-System-in.aspx#:~:text=An%20estimated%2063.3%20million%20visits,most%20estimated%20visitation%20on%20record.&text=The%20top%2Dvisited%20regional%20park,with%20about%203.8%20million%20visits.>

³ : Metropolitan Council MetroStats | <https://metro council.org/Data-and-Maps/Publications-And-Resources/MetroStats/Land-Use-and-Development/Twin-Cities-Forecasted-to-Reach-Four-Million-Resid.aspx#:~:text=The%20Twin%20Cities%20region%20will,population%20to%204%2C001%2C000%20in%202050.&text=Black%2C%20Latino%2C%20and%20Asian%20populations,doubling%20between%202020%20to%202050.>



HELP PLAN THE FUTURE OF SUMMIT AVENUE!

SHARE YOUR IDEAS!

SUMMIT AVENUE REGIONAL TRAIL MASTER PLAN

The Master Plan process will review Summit Ave. and develop a guide for future improvements within City right-of-way.

Timeline
Fall 2021 - 2022

Connect with your District Council

Join the conversation

www.engagstpaul.org/summit

TAKE SURVEY HERE!
Scan the QR code or visit engagstpaul.org/summit

QR CODE

If you need this translated or in an alternative format, please call us at 651-266-6100.
 ¿Necesita esta traducción? Comuníquese con nosotros al 651-266-6100.
 Ma u baahan tahay tarjamaadan Nago soo waaq 651-266-6100.
 rau qhov no xhais los? Hu rau pob nrawnn 651-266-6100.

SAINT PAUL Parks and Recreation
 MORE INFORMATION
www.stpaul.gov/summitmasterplan



Community Engagement

Summary of Engagement

DRAFT IN PROGRESS

- Summarize common themes from all engagement events
- Synthesize (is possible) key themes from different user groups - adjacent residents vs regional users, users by age/race/ability, etc.
- How did the engagement guide the recommendations of the master plan?

P R O G R E S S

***NOTE:** Organizations listed in this chapter reflect those of which project staff reached out to as part of the Design Advisory Committee process. The degree to which participants engaged in the process varied by organization. **Acknowledgment does not reflect an organization's endorsement of the regional trail master plan.**

Equity Analysis

As defined by the Metropolitan Council, the equity analysis is “a process to examine who benefits and who is affected by the development of the resources in terms of race, ethnicity, national origin, income, ability, age, and other pertinent character to the analysis will identify communities that may be underserved by the Regional Parks System, and the impacts on these communities”. Answers to the following questions help determine if the master plan has met these requirements:

1. Project Data:

a. Scope: What are the boundaries and demographics of the public engagement area?

Response in progress

b. Context: What is known about future stakeholder, underserved populations, and how the region's history created present-day inequitable outcomes?

- In general, The City of Saint Paul, Ramsey County, and the greater region is growing more racially and ethnically diverse and has a growing population of elderly people.
- The City's Comprehensive Plan estimates that the population of Saint Paul will grow by 30,000 residents between 2020 and 2040. Between 2000 and 2015 the percentage of people of color living in Saint Paul increased from 36%-46%, a

trend that also suggests that Saint Paul became majority people of color in 2017. Ramsey County has increased from 13% people of color in 2000 to 30% people of color in 2014, and it is projected to be 45% people of color by 2030. In 2010, 24% of the region's population were people of color. By 2040, that number will be at 40%.

- Ramsey County is projected to experience a 48% increase in residents 65 and older between 2015 and 2030, and another 10% increase in this age group between 2030 and 2040. The Metropolitan Council projects that those age 65 and older will be the fastest growing segment of our region's population, doubling in absolute numbers by 2030 and becoming one of in five of the region's residents by 2040.
- **Racial Covenants:** Racial covenants are clauses that were inserted into property deeds to prevent people who were not White from buying or occupying land¹. Real estate developers and urban planners implemented covenants under the idea that “mixed-race residential areas were hazardous and should be eliminated”¹. The use of racial covenants in the Twin Cities region has contributed to continuing racial inequities, particularly as they relate to homeownership. 78% of White families own homes in the Twin Cities, while only

25% of Black families are homeowners. Although racial covenants were deemed unenforceable by the Supreme Court in 1948, property records still include the language used in the covenants.

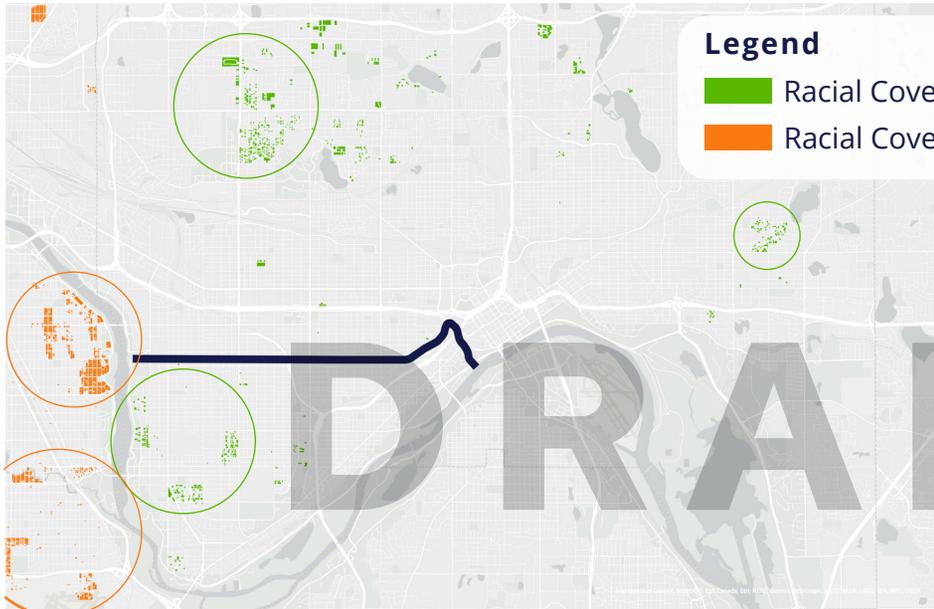
Much of this data comes from the Mapping Prejudice project, based in the University of Minnesota Libraries. To date, the project has transcribed 80,000 property deeds in Hennepin and Ramsey counties and is continuing to process records from other cities around the U.S.

- Other discriminatory housing practices such as zoning and redlining have been used in tandem with racial covenants to restrict homeownership among non-White people. Between 1935 and 1940, federal agents of the Home Owners' Loan Corporation assigned grades to different areas of cities across the U.S. to reflect “mortgage security”, cities receiving a grade from A (minimal risk to banks) to D (considered hazardous)². These practices were informed by racial discrimination and made homeownership for non-White people more difficult.

¹ : <https://mappingprejudice.umn.edu/racial-covenants/what-is-a-covenant>

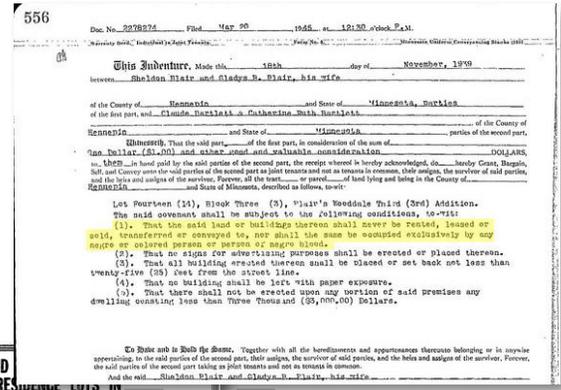
² : <https://dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58&text=intro>

³ : <https://www.startribune.com/the-racist-covenants-embedded-in-ramsey-county-deeds/600182442/>



Legend

- Racial Covenant - Ramsey County
- Racial Covenant - Hennepin County



BIG SALE ALL DAY SATURDAY AUG. 9TH AND FROM 8 A. M. TO 8 P. M. OF CHOICE RESERVE LOTS IN

FRANKSON'S COMO PARK ADDITION

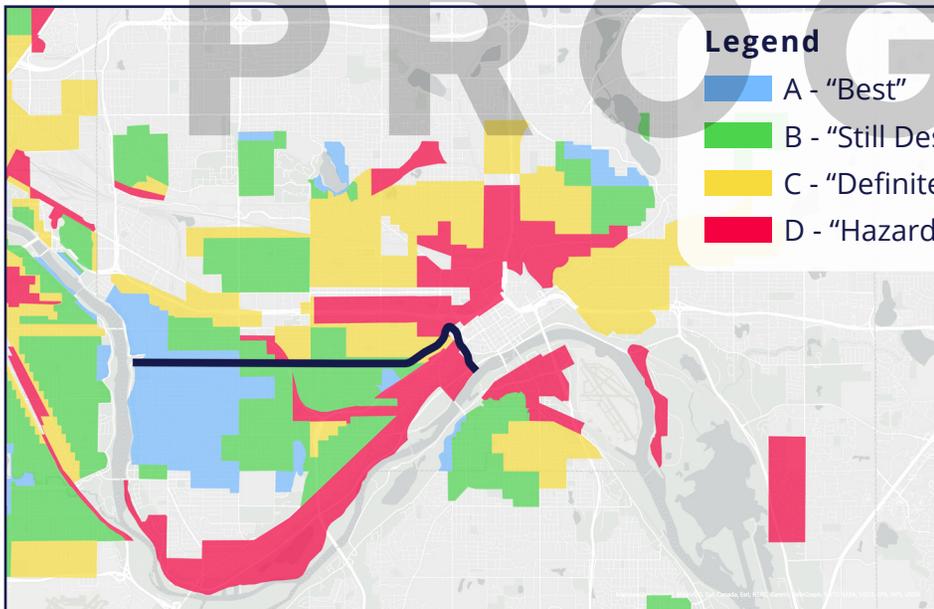
YOU CANNOT AFFORD TO MISS THIS OPPORTUNITY, CAN YOU?
For this is unquestionably one of the most desirable and the most beautiful tracts ever planned and offered for sale in the Twin Cities. These lots are very rapidly selling, so if you want selected locations come early Saturday and make your selection.

"A RENTED HOME IS NOT A HOME"
Don't forget my recitations—read them again: First, that no gravel shall be removed from said lots except such as is used in the erection, construction or alteration of buildings on the premises. Second, that no building shall be erected upon said premises nearer than 30 feet from the front line, and the top of the same foundation shall be at least three and a half feet above the sidewalk grade, and that no building shall be erected for occupancy as a dwelling house, or occupied as such which shall cost less than \$2,000 to \$5,000, or more, or temporary structure for occupancy, nor be erected and occupied upon the rear ends of said lots or on any other portion of said lots, or on any portion of any paper buildings or what is commonly designated as shacks shall be erected on said premises or any part thereof.

Also Please Remember **Prices and Terms** **How to Get There**
\$400 PER LOT AND UP
Except Sunday from 8 A. M. to 8 P. M.
OFFICE ON GROUNDS
For Sale by THOMAS FRANKSON, Owner

Racial covenants embedded in property deeds²; real estate developers advertised racial covenants in new neighborhoods³

Fig. 2-1 | Regional Racial Covenants | Ramsey and Hennepin Counties¹



Legend

- A - "Best"
- B - "Still Desirable"
- C - "Definitely Declining"
- D - "Hazardous"

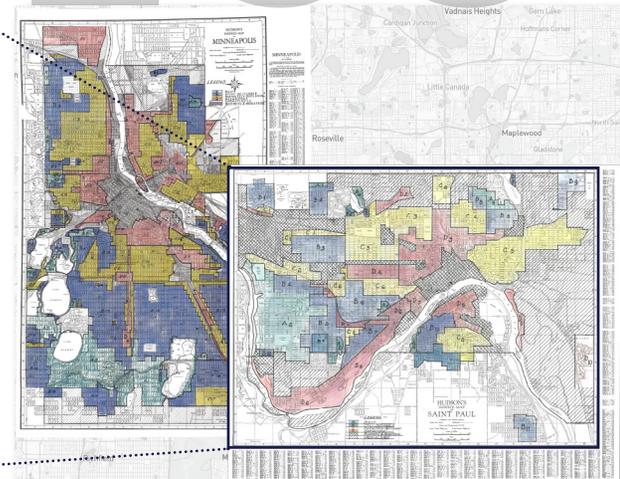


Fig. 2-2 | Redlining in the Twin Cities Metropolitan Area² Original Redlining Maps - Saint Paul and Minneapolis³

Equity Analysis

2. Public Engagement and Participation:

a. Participants: Which stakeholders discussed in 1b contributed to the planning effort?

Response in progress

b. Engagement: What engagement, outreach, and communication was conducted for stakeholders described in 2a?

Response in progress

c. Public Participation: What did you learn from the engagement conducted in 2b?

Response in progress

3. Evaluation Summary:

a. Transparency: How did this public participation from 2c impact the decisions and policies made?

Response in progress

b. Accountability: How will the planning effort create better outcomes?

Response in progress

Focused Engagement efforts are in progress that will inform components of the Equity Analysis.

- Community Event participation
- User Survey identifying barriers to use
- Follow-up stakeholder meetings

Equity Analysis

DRAFT IN

This page intentionally left blank

PROGRESS

Equity Analysis

Metropolitan Council Regional Parks Equity Toolkit

Developed by the Metropolitan Council, the Equity Toolkit is a series of questions used to clarify and explain how regional parks are addressing issues around equity. Per Metropolitan Council, equity is defined as “expanding access to opportunity for people of all races, ethnicities, incomes, abilities, and national origins”. The questions included in the kit are as follows:

1. What is the population breakdown for your jurisdiction by race, ethnicity, age, national origin, ability status, and income?
2. Which population segments above are currently underserved by the regional parks system?
3. Which of the underserved populations identified will this project better serve?
4. What specific aspects of this project will help to better serve the targeted populations identified?
5. Exactly how will you verify the target populations are better served?

prosperity, livability, and sustainability. Thrive MSP 2040 states that the Council will “strengthen equitable use of regional parks and trails by all our region’s residents...”.

An equity analysis is a required component of a regional linking trail master plan to examine who benefits and who is affected by the proposed trail considered by race, ethnicity, national origin, income, ability, age, and other pertinent characteristics. From this, communities that are underserved can be identified.

2040 Regional Parks Policy Plan

Equity is identified in the 2040 Regional Parks plan as one of the five desired outcomes for the regional vision along with stewardship,

Demographic Analysis

This analysis focuses on the six factors outlined in the Metropolitan Council 2040 Regional Parks Policy Plan: race, ethnicity, national origin, income, ability, and age. As a regional facility, the demographics of the community adjacent to Summit Avenue as well as the regional demographics of the metropolitan area determine who may be benefiting or who might be underserved by regional trail facilities. The data is illustrated graphically on the next page.

Local Analysis

Using data from the census tracts directly adjacent to the Summit Avenue corridor, this analysis is divided into two segments that help capture the variations in demographic trends that exist between the more residential and more urban segments of the corridor.

Summit Avenue (Mississippi River Blvd. to Saint Albans St.)¹

- Ethnicity and Race: The population of this segment of Summit Avenue is predominantly white with approximately 82% of residents reporting as white. 10% of the region's residents are Black, 4.5% Hispanic, and 3.5% Asian.
- National Origin: Approximately 94% of residents are U.S. born.
- Mean Household Income: The mean annual household income in these tracts

is \$86,294.

- Ability: The percentage of residents with any disability is 8.1%
- Age: 17% of residents are 17 years old or younger, 72% of residents are between 18 and 64, and 11% of residents are 65 or older.

Summit Avenue (Saint Albans St. to Kellogg Blvd, Kellogg Blvd, and Eagle Pkwy)¹

- Ethnicity and Race: The population of this segment of Summit Avenue is predominantly white with approximately 71% of residents reporting as white. 10% of the region's residents are Black, 5% Hispanic, 8.5% Asian, and 5.5% reporting as another race.
- National Origin: Approximately 93% of residents are U.S. born.
- Mean Household Income: The mean annual household income in these tracts is \$58,215.
- Ability: The percentage of residents with any disability is 14.3%
- Age: 14% of residents are 17 years old or younger, 69% of residents are between 18 and 64, and 17% of residents are 65 or older.

City-wide Analysis

City-wide demographic data identifies potential park users outside of the direct trail corridor. In this data, more diversity in almost all categories exists compared to the census tracts directly adjacent to Summit Avenue.

City of Saint Paul²

- Ethnicity and Race: Residents of Saint Paul report their race and ethnicity as follows: 55.2% of resident's identify as white, 15.5% Black, 19.1% Asian, 9% Hispanic or Latino, and the remaining population identifying as American Indian, Native Hawaiian and other Pacific Islander, two or more races, or other.
- National Origin: Approximately 80% of residents are U.S. born.
- Mean Household Income: The mean annual household income in these tracts is \$57,876.
- Ability: The percentage of residents under 65 years of age living with any disability is 9.1%
- Age: 25% of residents are 17 years old or younger, 69% of residents are between 18 and 64, and 17% of residents are 65 or older.

Demographic data provided by the Metropolitan Council and the United States Census Bureau:

¹ : <https://metrotransitm.n.shinyapps.io/regional-parks-equity-tool/>

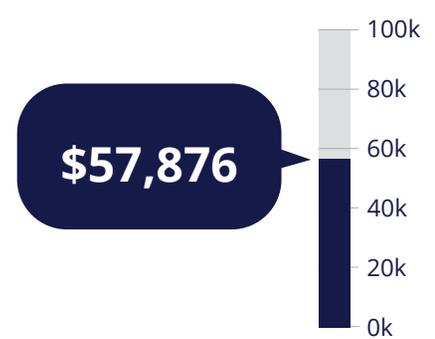
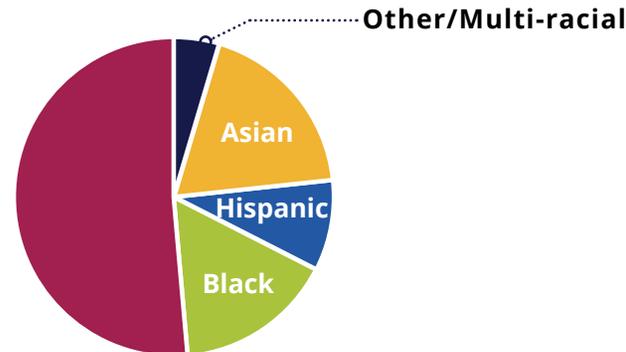
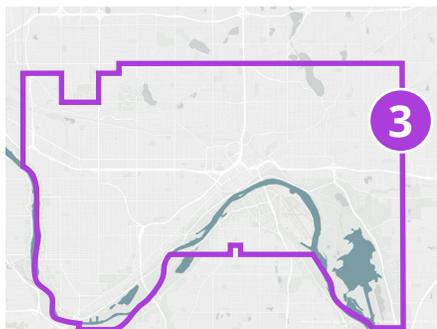
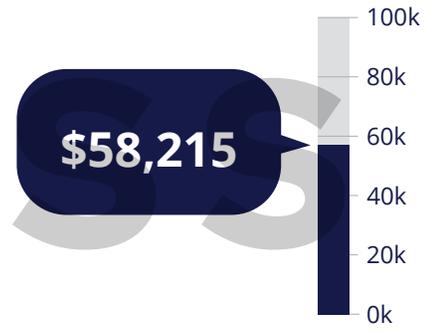
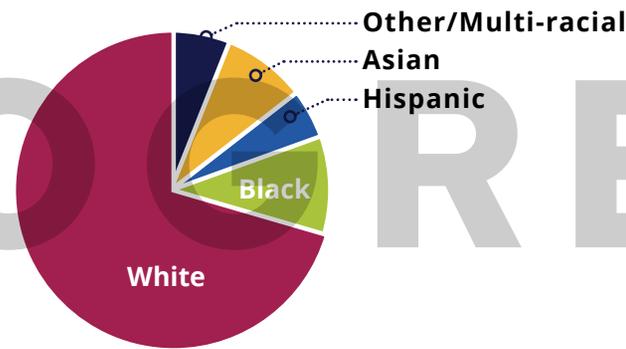
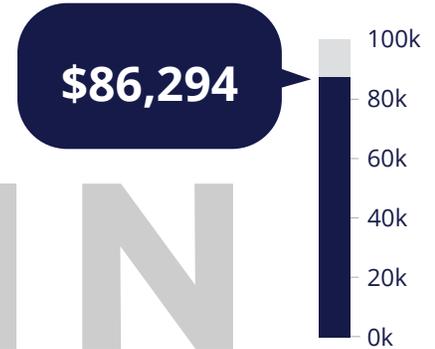
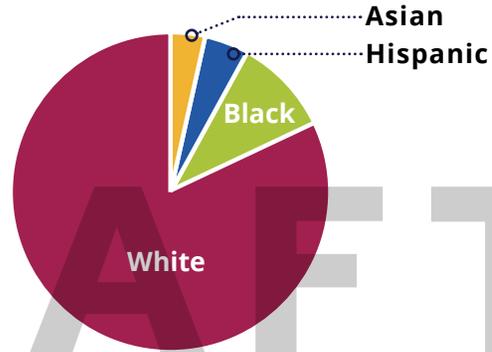
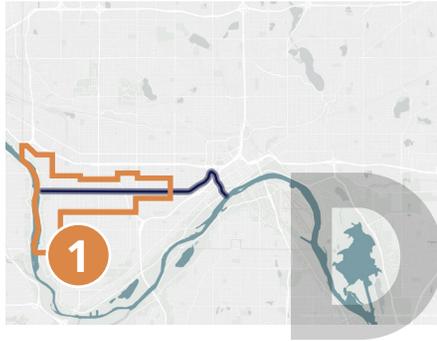
² : <https://www.census.gov/>

Demographic Analysis

DATA AREA

RACE AND ETHNICITY

MEAN HOUSEHOLD INCOME

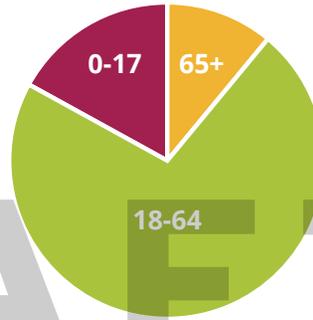
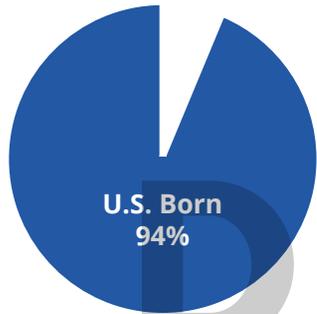


Demographic Analysis

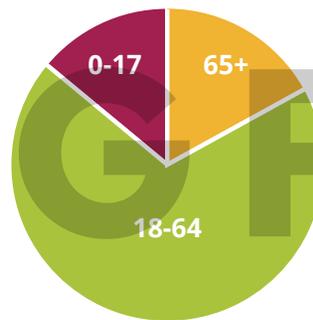
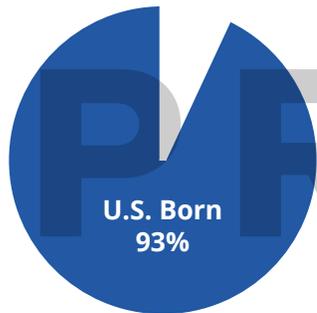
NATIONAL ORIGIN

AGE

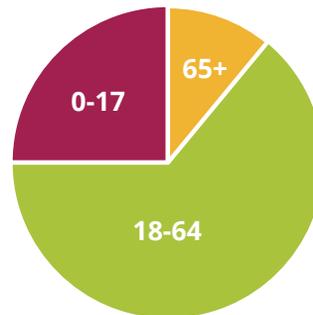
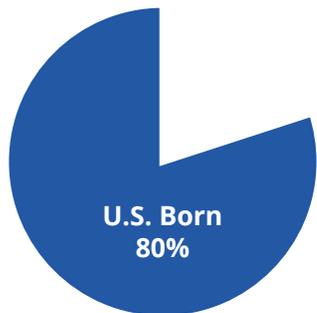
ABILITY



8.1%
living with
a disability



14.3%
living with
a disability

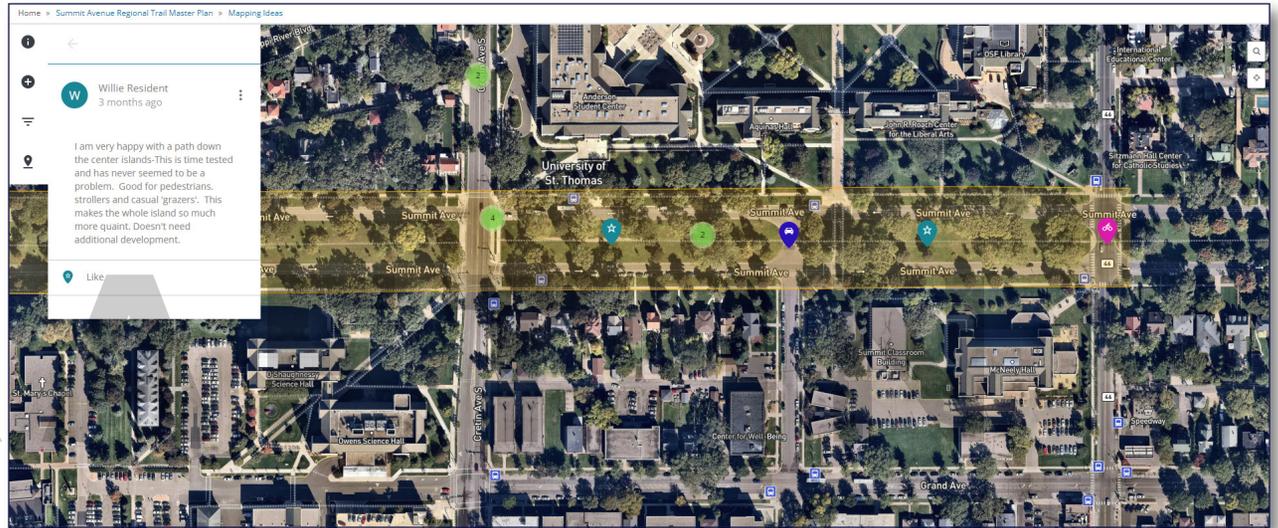


9.1%
of residents under
65 are living with a
disability

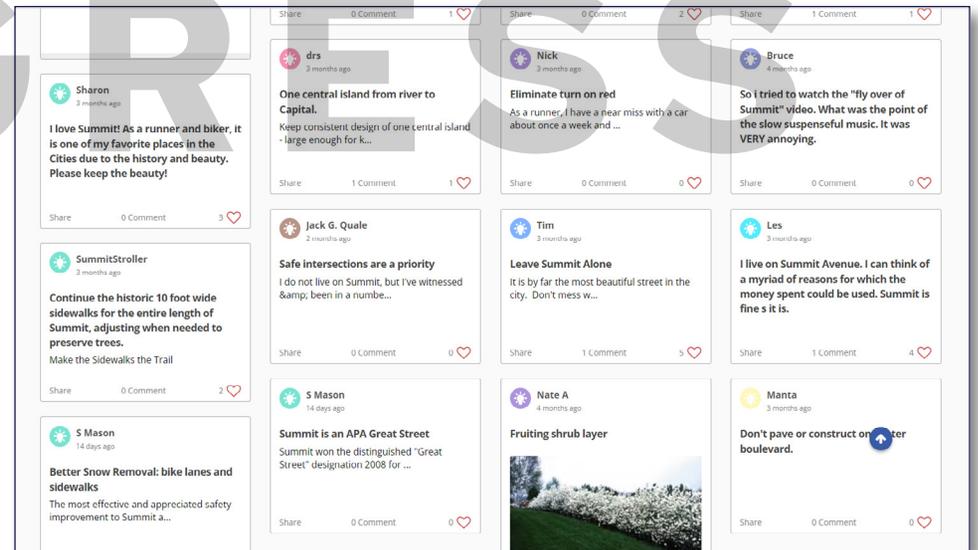
Public Engagement

Virtual Engagement

Much of the engagement for the master plan was held in a virtual format. The Engage St. Paul website (<https://engagestpaul.org/summit>) served as the main portal for engagement. Project information was provided by Parks and Recreation staff for review and comment by community members. Engagement tools included an interactive map where users could drop pins, share photos, and leave comments, a survey to help gather feedback about specific elements of the corridor, and an idea board, where users could post comment and photos and interact with other members.



The City of St. Paul Parks and Recreation project website (<https://www.stpaul.gov/departments/parks-and-recreation/design-construction/current-projects/summit-avenue-regional-trail>) also provided links to the engagement platforms and project information. These websites have allowed for continuous public engagement through the development of this master plan.



Engagement Events

Design Advisory Committee (DAC) Meetings

The Design Advisory Committee (DAC) included community leaders from businesses, organizations, and community groups near Summit Avenue. The guiding principles and roles of the Design Advisory Committee were as follows:

- Advisory role to Parks and Recreation
- Input balanced with larger citywide needs, Parks and Recreation Systems and Vision Plan, Saint Paul Bicycle Plan, Great River Passage, and permitting
- Committee members are representing a larger interest group
- Decisions by consensus, not voting
- Work respectfully in group setting
- Understand and balance needs of all trail users
- Join Committee with open-mind and willingness to listen and hear views or ideas

The DAC met with project staff twice during development of the master plan to give feedback and help provide a connection between members of their organizations and the project.

Technical Advisory Committee (TAC) Meetings

The Technical Advisory Committee (TAC) was comprised of City of Saint Paul staff as well as staff from other regulatory agencies. The groups represented in the TAC include:

- City of Saint Paul
- Minnesota Department of Transportation (MnDOT)
- State Historic Preservation Office (SHPO)
- Department of Natural Resources (DNR)
- National Park Service (NPS)
- Capitol Region Watershed District (CRWD)
- Capitol Area Architectural and Planning Board (CAAPB)
- Ramsey County
- Metropolitan Council
- Heritage Preservation Commission (HPC)

The individuals from these groups were invited to two TAC meetings at different phases of the development of the master plan. Members of the TAC were asked to advise the development of conceptual trail alignments and provide feedback about ideas presented during these meetings.

Virtual “Drop-in” Engagement Sessions

Three drop-in engagement sessions were held in the spring of 2022. Community members were invited to participate in an

informal call with project team members to learn about the project, give feedback, and voice concerns.

Fall 2021 On-Site Events

Project staff attended a number of on-site events near Summit Avenue in Fall 2021 to talk to residents about the project and collect feedback. Events included:

- Twin Cities Marathon
- Pop-up Tables at Campuses - Cretin Ave and Snelling Ave
- Twin Cities Farmers Market at Lexington Pkwy

Public Information Session

Members of the public were invited to learn about the project and give feedback. Over 250 community members attended the virtual event where project staff presented an overview of the project and discussed potential trail concepts. Participants were divided into breakout sessions to discuss the concepts further and voice feedback about the proposed trail facility.

Public Open House

Open House planned for late summer 2022

Public Engagement

Virtual Engagement

Mapping Ideas

The project engagement website provided an interactive map for community members to visualize the proposed project corridor, and make comments related to the map. At this point (August 2, 2022), 174 people have contributed and 632 pins have been added to the map.

Pins organized by general categories were available to be used. Those categories are listed below, with the percentage of comments related to each also listed:

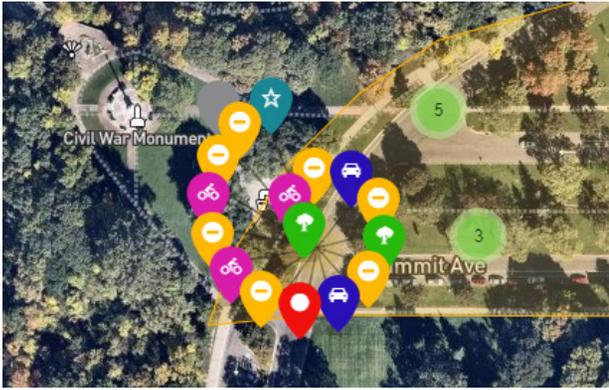
-  Like (12%)
-  Dislike (12%)
-  Safety (22%)
-  Biking (18%)
-  Traffic or Roadway (13%)
-  Recreation (8%)
-  Parking (6%)
-  Other (5%)

Common themes noted in this exercise include:

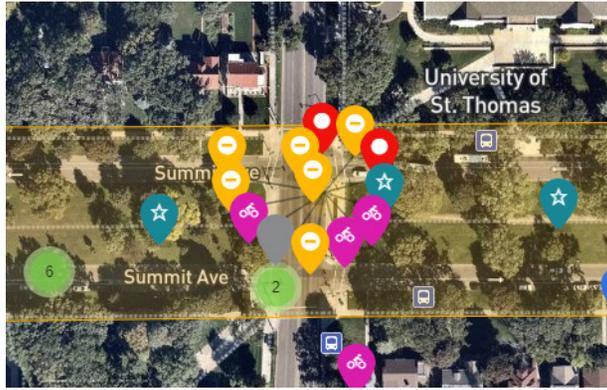
- Notes at major intersections regarding concerns for safety
- Desire to maintain and preserve existing natural features including mature tree canopy and central median running path; notes about existing greenspaces that have opportunity for amenities
- Notes about specific properties, schools needing drop-off zones, churches needing parking at certain times of day, etc.
- Historic elements are important (granite curbs, hexagon pavers, wide sidewalks)
- Comments about conflicts between drivers and bicyclists at driveways, intersections, parking areas
- Desire for no change to Summit Avenue other than roadway repairs
- Importance of winter maintenance



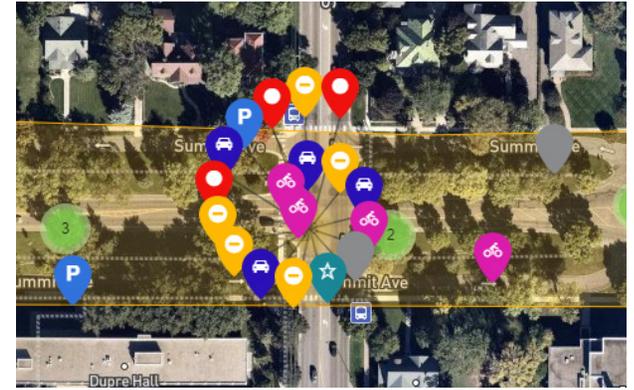
Fig. 2-3 | Snapshot from 'Mapping Ideas' Engagement Tool



Intersection at Mississippi River Blvd



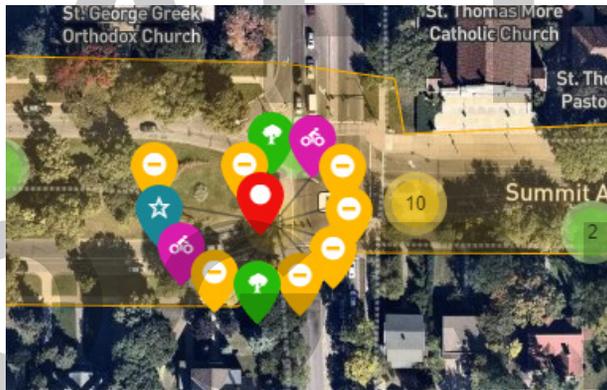
Intersection at Cretin Ave



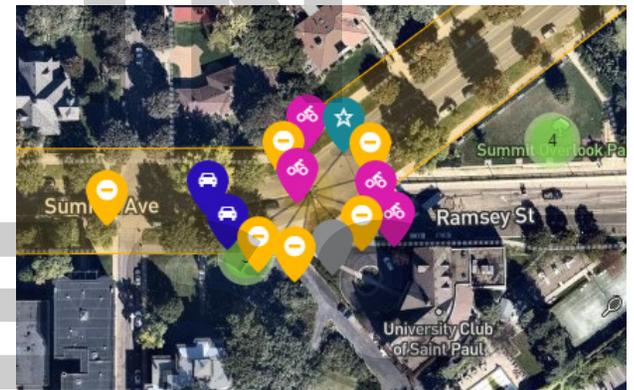
Intersection at Snelling Ave



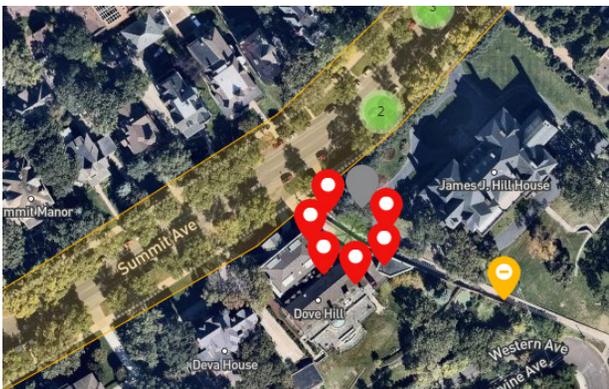
Ayd Mill Rd Bridge



Intersection at Lexington Pkwy



Intersection at Ramsey St



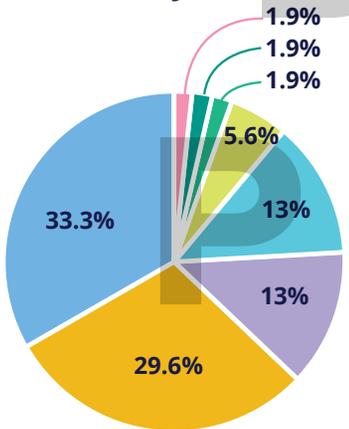
Walnut St stairs

Public Engagement

Online Survey Results

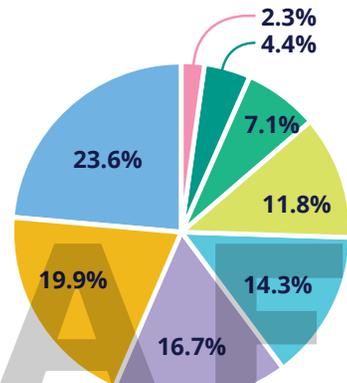
Community members were invited to participate in an online survey to share ideas and concerns about the proposed regional trail. A summary of the feedback received is illustrated here.

Where do you live?



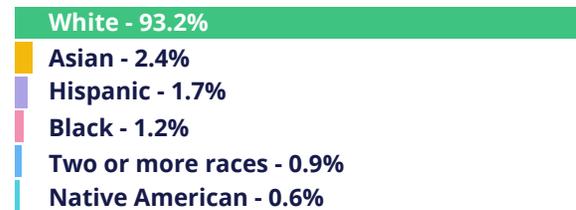
- Summit Hill
- Macalaster-Groveland
- Summit-University
- Union Park
- Hamline-Midway
- Highland
- St. Anthony Park
- Eastview-Conway-Battle Creek - Highwood Hills

Please select your age

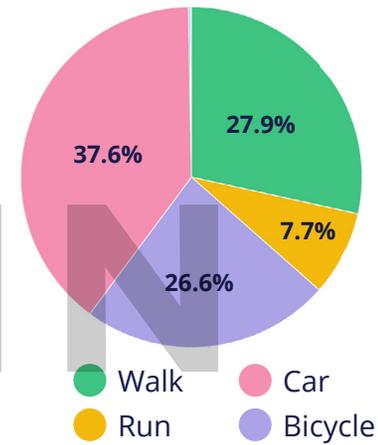


- 35-44
- 25-34
- 45-54
- 55-64
- 65-74
- 18-24
- Under 18
- 75 or older

With which race or ethnicity do you most identify?



What method of transportation do you primarily use along Summit Ave?

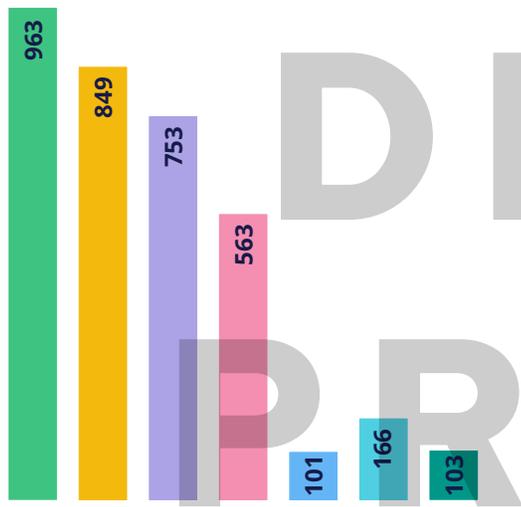


- Walk
- Car
- Run
- Bicycle

Public Engagement

Online Survey Results

Within the Summit Ave corridor, which elements are most important to you?



What limits your use of Summit Ave for transportation or recreation?



- Mature tree canopy and shade
- Separation of uses for vehicles, pedestrians, and bicyclists
- Center medians and parkway green spaces
- Crossings and intersections
- Wayside rest and amenity areas
- On-street parking
- Other

- Access
- Safety
- Parking
- Traffic
- Maintenance Conditions
- Other

* See appendix for additional survey results.

Other Feedback Themes

Greenspace

- Limit impacts to tree, focus on preservation
- Importance of canopy for shade and parkway experience
- Maintain open space in medians - open space for passive recreation

Safety

- Minimize conflicts at intersections
- Conflicts between vehicles and bicycles
- Confusing median to roadway transition areas
- More separation between cars, bicycle, and pedestrians

Facility Conditions

- Surface conditions of bituminous are very poor
- Walkway paver surfaces lift and heave, tripping concerns
- Wider, 10' sidewalks east of Dale are highly desirable
- Snow maintenance conditions inhibit bicycling in lanes
- Desire for more accessible surfaces, year-round
- Maintain dirt path in central median - unique running experience in the City
- Charming, quaint experiences, unlike other facilities

No Change

- Maintain existing functions and on-street conditions
- Limit impacts to corridor
- Surface repairs are a priority

Public Engagement

Technical Advisory Committee

TAC Meeting #1 - February 4, 2022

Discussion Topics

- Multi-use trail facility vs. separate bike and pedestrian facilities
- If separated: (2) one-way bike facilities vs. (1) two-way bike facility
- Trail in median
- Parking restrictions and removals

Group Discussion Themes

Trail Facility

- Preference for separate bicycle and pedestrian facilities
- In double median condition - consider frontage roads for trail facility
- Consistency in facility type through the corridor will be critical
- Consider project phasing
- Could consider expanding sidewalk
- Consider trail on north side of roadway for snowmelt potential
- Maintain existing sidewalks where they are

Trees and Greenspace

- Use existing impervious area for trail, no impact to trees and greenspace
- Prioritize trees and greenspace over parking
- From a historical perspective, don't want to remove trees or reduce greenspace
- Trees and greenspace are part of the historic district designation of the corridor

Parking

- Reduce parking near intersections for clear sight lines
- Parking removal could promote other modes of transportation
- Parking in residential areas is desirable

Other

- Emphasis on need for improved safety at intersections: leading pedestrian intervals, specific signals for cyclists
- Need to understand what component of the roadway and surrounding context are part of the historic designation, what can be changed, what needs to remain.

Public Engagement

Technical Advisory Committee

TAC Meeting #2 - May 23, 2022

Discussion Topics

- Trail facility style (one-way vs. two-way) and experience
- Role of greenspace
- Balance of corridor component (greenspace, historic context, parking)
- Parking restrictions and removals

Group Discussion Themes

Trail Facility

- Continuity in trail facility is preferred
- Positive reception to separated facility - seems easier for snow clearing
- Hesitant about cyclists going against traffic in a two-way bike facility, buffer seems helpful, suggestion of a vertical element as well
- Two-way facility pros and cons: support for no net loss of greenspace, concern that this will change historic proportions and symmetry (segments A and C)
- Support for one-way facility - more familiar to bikers, drivers, and pedestrians
- Concern about phasing with two-way facility and what happens in the interim

Trees and Greenspace

- Interest in and concern about tree removals
- If impact on greenspace is necessary, study where the impact will occur, be sensitive to context
- Forestry staff emphasizes the desire to maintain the existing root zone of the trees in the corridor - 3-4' of impact feels significant
- Enhance existing park-like quality of the parkway - provide uninterrupted medians without vehicle cut-throughs
- Impacts to greenspace and tree canopy also impacts the historic value of the corridor

Parking

- General support for selective parking removal
- Parking is most critical near multi-family housing areas, for example, Dale St. area

Other

- Importance of winter maintenance
- Consider residential driveways, think about safety for all users
- Traffic calming, narrowing travel lanes, intersection bumpouts, shorter pedestrian crossings
- Wayfinding and amenities

- Opinion that two-way facility adds to the park-like feel, desire to make Summit Avenue feel more like a park and less like a through way for vehicular traffic
- Symmetry is important for historic preservation
- Interest in relationship to existing transit stops and intersections
- Consider project phasing - how will the trail function when only part of it is completed?
- Importance of safety improvements at Snelling Ave intersection

Public Engagement

Design Advisory Committee

DAC Meeting #1 - February 15, 2022

Discussion Topics

- Multi-use trail facility vs. separate bike and pedestrian facilities
- If separated: (2) one-way bike facilities vs. (1) two-way bike facility
- Trail in median
- Parking restrictions and removals

Group Discussion Themes

Trail Facility

- Inappropriate to put trail in the middle of the wide median
- Consensus for separate bicycle and pedestrian trail facilities
- Consistency is important so users know what to expect
- Avid cyclists will not be happy with the existing facility going away
- Discussion about both one-way and two-way facility types - concern about safety for bikers going against the traffic direction in a two-way scenario
- The 10-foot sidewalks near Dale St feel safe and comfortable

Trees and Greenspace

- Don't take away greenspace from median - keep informal running trail
- Do not remove trees
- Minimize impacts to boulevards

Parking

- Desire by some not to eliminate parking
- Other suggestions for selective parking removal
- Parking removal will be difficult for residents, especially people living in multi-family buildings

Other

- Improve pavement throughout corridor
- Intersection and transition safety is critical for all modes

Public Engagement

Design Advisory Committee

DAC Meeting #2 - May 25, 2022

Critical Feedback

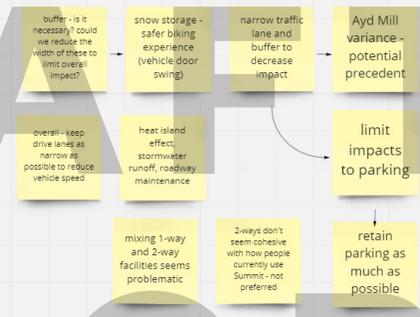
- Trail Facility Styles and Experiences: 1-way or 2-way
- Role of greenspace
- Recognize the push/pull of greenspace and hist. context
- Parking Removal & Restrictions

Critical Feedback

- Trail Facility Styles and Experiences
- Role of greenspace
- Recognize the push/pull of greenspace and hist. context
- Parking Removal & Restrictions



OVERALL CORRIDOR FEEDBACK



DRAFT

PROGRESS

Two-Way Separated Trail, Parking Both Sides

100' Right-of-Way | Segments D, E, and F



- Want a holistic approach to summit (1 or two way for entire length)
- The symmetry of the street is important - that is a factor of the character of the street
- Would narrowing travel lanes help reduce speed?

FEEDBACK



Public Engagement

Design Advisory Committee

DAC Meeting #2 - May 25, 2022

Discussion Topics

- Trail facility style (one-way vs. two-way) and experience
- Role of greenspace
- Balance of corridor component (greenspace, historic context, parking)
- Parking restrictions and removals

Group Discussion Themes

Trail Facility

- One-way style facilities are predictable to drivers
- Concern about 4' buffer, minimizing the buffer could create more space for bikers and pedestrians, reduce impact to greenspace - buffer provides snow storage and protection to bikers from car doors of parked cars
- Questions about the need for buffers/requirements for buffer widths
- One-way style seems oriented to commuters, two-way accommodates more users, more recreational
- Desire for a consistent facility type

- Two-way facility provides nice link to Capitol City Bikeway on east end
- Preference for both facility types one-way and two-way)

Trees and Greenspace

- Prioritize greenspace and existing trees

Parking

- Support for public transit over parking in situations where parking may be removed
- Desire to retain as much parking as possible

Other

- Symmetry is important
- Think about how the facility will function for residents as well as trail users
- Support for removing the vehicle cut throughs in the medians
- Narrow travel lanes to reduce speed
- Consider climate impacts - heat island effect, stormwater runoff, etc.
- Desire for parkway to remain as is - just include improvements to roadway condition and striping
- "Solution looking for a problem"

Public Engagement

Public Information Session

June 6, 2022

1 minute

2 DESIGN
"In 50 years, this parkway...."

THINK + SHARE

car free	preserved	historic	benches	shady	historic
accessible	disrepair lack of funding	connected	land donated by residents	well traveled	increased density
local gem	beautiful ride	kid friendly	community friendly	walker friendly	parking friendly
residential	untrippable sidewalks	breath of fresh air	residential	multimodal	cared for and work of art

1 minute

1 VISION
Quick Post: **First word** that comes to mind when you picture the parkway on Summit Ave.

biking and cycling	pot holes	trees	mansions	8-80 ped/walkers	linear park
dirt running	lovely parkway	historic context	street repair	high taxes	safety
wonderful way to walk	institutions	families	dirt biking	traffic	already improved
poor maintenance	what's broken?	imperial date driving project?	family friendly	parking that serves housing on summit	speeding
colleges parking					

OVERALL CORRIDOR FEEDBACK

Concern about trees and tree loss - how many?	Process of the project - why Summit Ave? Where are more opportunities for input?	How do driveways work with raised bikeway?	Making Summit a one-way with Grand as a pair	bikeways on alleyways idea	safety as it exists now and in the concepts	safety of driveway crossings	traffic and traffic management - how can that be a safer aspect of the corridor
How is engagement planned going forward?	Historic value is important	Existing bike lanes feel constrained	Want to make it safe for all users	Why does it need to change?	Concern for loss of parking	How can we make biking and all modes safer on summit - One idea is a trail	

OVERALL CORRIDOR FEEDBACK

Project process and desire for more information	determined alignment and wanting more safety information	posting crash-data to website	number of intersections and driveways - bikes are crossing now but how would it change?	Maintenance information needed - who is responsible for it? Level of Service	Pedestrian facilities along the sidewalk - keep that in mind with bike facilities	Keep the historic feel and trees as much as possible	
---	--	-------------------------------	---	--	---	--	--

Public Engagement

Public Information Session

June 6, 2022

Discussion Topics

- Trail facility style (one-way vs. two-way) and experience
- Role of greenspace
- Balance of corridor component (greenspace, historic context, parking)
- Parking restrictions and removals

Group Discussion Themes

Trail Facility

- Desire to stay in existing transportation envelope to limit impacts
- Trail facility could improve winter conditions if plowed
- Idea to have bikeways in alley

Trees and Greenspace

- Tree protection and preservation of greenspace
- Trees in corridor provide unique character - concern if trail can be built and still maintain the character
- Concerns about tree loss

Parking

- Safety should be the highest priority - parking should be the lowest
- Consider people with mobility challenges when thinking about parking removal
- Many concerns about loss of parking

Other

- Emphasis on safety for families and biking with children - current condition does not feel safe for young or new bikers
- Concern that the corridor is not maintained now, how will a regional trail be maintained in the future?
- Questions in general - why regional trail?
- Questions about considering other east/west routes
- Safety should be the priority
- Preservation of historic character
- Suggestion for other safety measures - bumpouts, reduction in number of crossings, elevated crossings
- Desire to slow vehicular traffic
- Idea to make Summit Avenue a one-way, pair with Grand Ave as another one-way (vehicular)
- Create a corridor where everyone feels welcome





Existing Conditions

Organization and Themes

Throughout this document, different themes and scales have guided the investigation, and ultimately the recommendations for the proposed trail facility. Looking at the city of Saint Paul and the communities beyond brings an understanding of the region-wide impacts that this corridor has, while a one-block look at the corridor helps understand the impact that this facility has on individuals, property owners,

neighborhoods, and communities. The diagram below illustrates the entire Summit Avenue Regional Trail corridor, and delineates the different segments explored through this master plan document. The segments have not only unique physical roadway alignments, but also have a unique character and different uses.

The master plan document focuses on a number of themes that guide the recommendations set forth in this

document. Those themes include:

- Regional greenspace amenities
- Mature canopy and greenspace
- Circulation, connectivity, and access
- Parking
- Historic and cultural context

Through this section of the document, these themes guide the exploration of existing conditions along the Summit Avenue corridor.

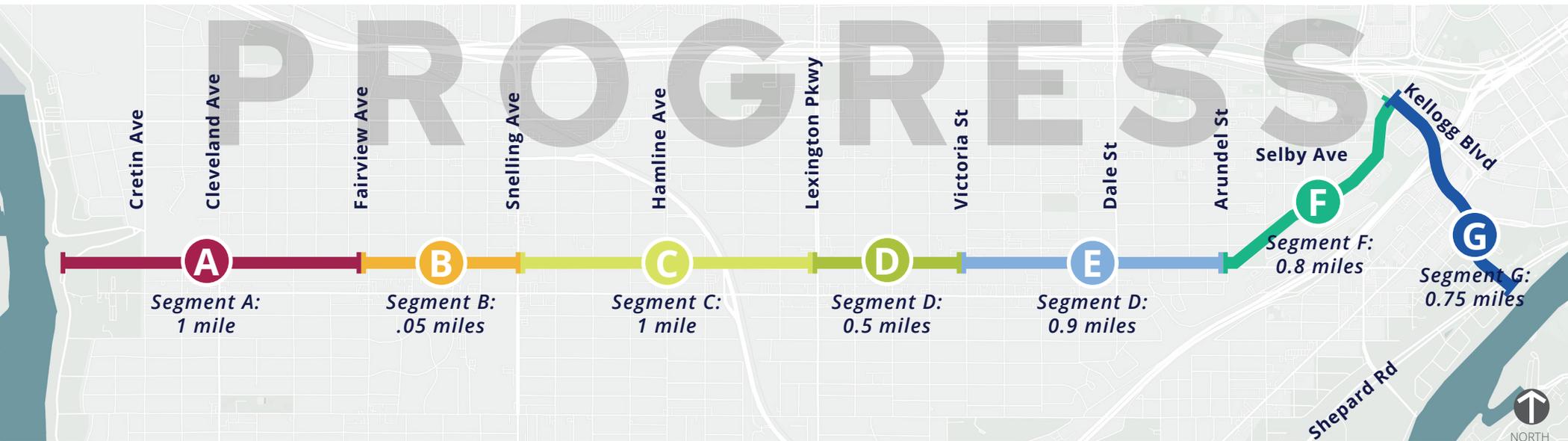


Fig. 3-1 | Summit Avenue Corridor Segments

Project Context

Political Context

The 5.5-mile Summit Avenue Regional Trail corridor intersects with several different wards, district councils, and neighborhoods within the city of St. Paul. The corridor lies within Wards 1, 2, 3 and 4, and district councils 8, 9, 13, 14, 16, and 17.

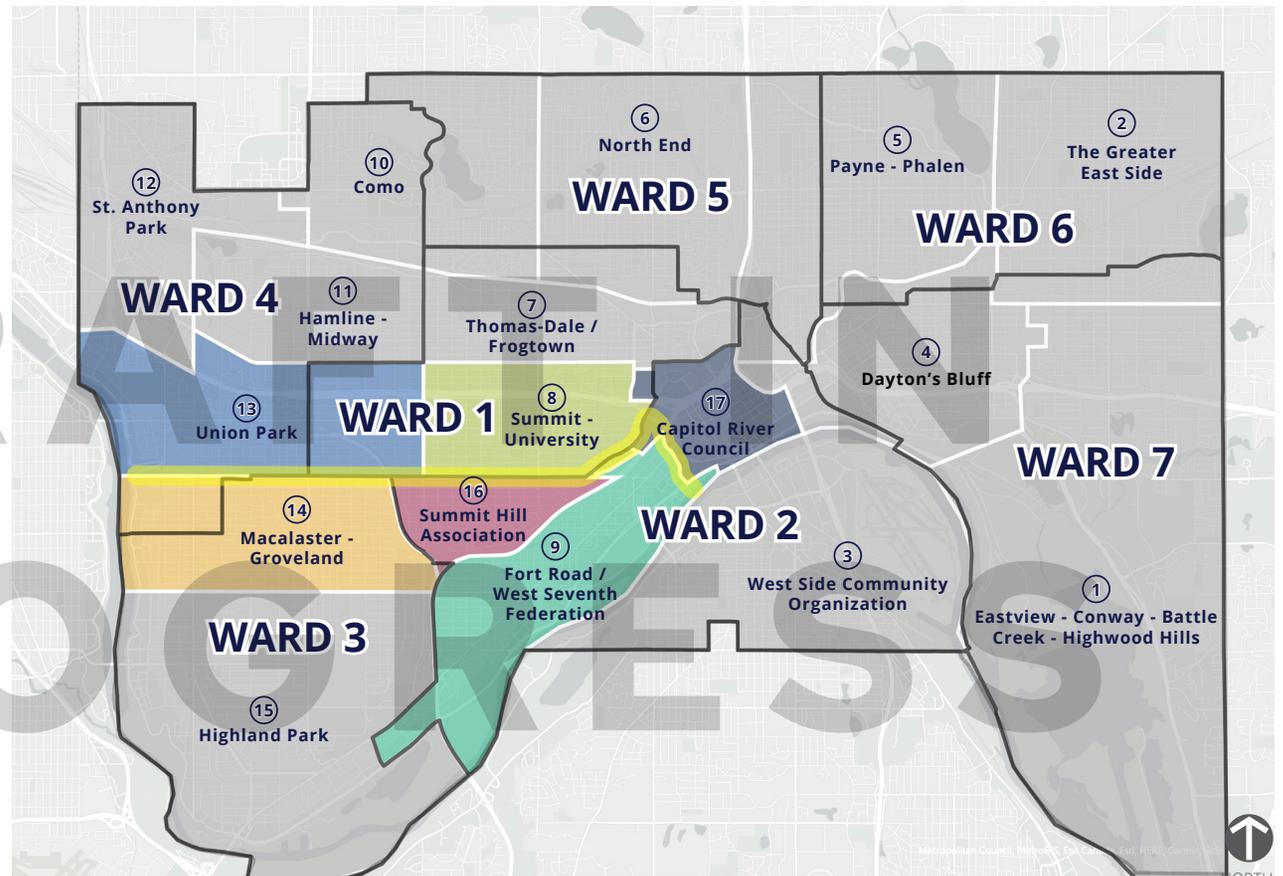


Fig. 3-2 | St. Paul Ward and District Council Boundaries

Project Context

Regional Greenspace Amenities

Designated as a *regional linking trail*, the Summit Avenue Regional Trail serves to connect other regional park and trail amenities throughout the city of St. Paul and beyond. The proposed Summit Avenue corridor improves a missing east/west connection from river to river via downtown, serving a large number of city residents. The map below also shows the connection created between regional park amenities at different points along the Mississippi River.

Other Considered Routes

Other potential routes connecting Mississippi Gorge Regional Park to the Sam Morgan Regional Trail were evaluated at a high-level. These routes include the following locations:

- Grand Avenue
- Portland Avenue
- Marshall Avenue and Selby Avenue
- Ayd Mill Road/Little Bohemia Trail
- Jefferson Avenue/Ayd Mill Road

These routes were not preferred to Summit Avenue due to various conditions including the following factors:

- Indirect or interrupted connections
- Profile changes along the roadway affecting user comfort and experience
- Lack of parkway characteristics for recreation
- Narrow right-of-way conditions and constraints
- Contextual land use and compatibility for a regional trail
- Does not connect two regional facilities via downtown Saint Paul

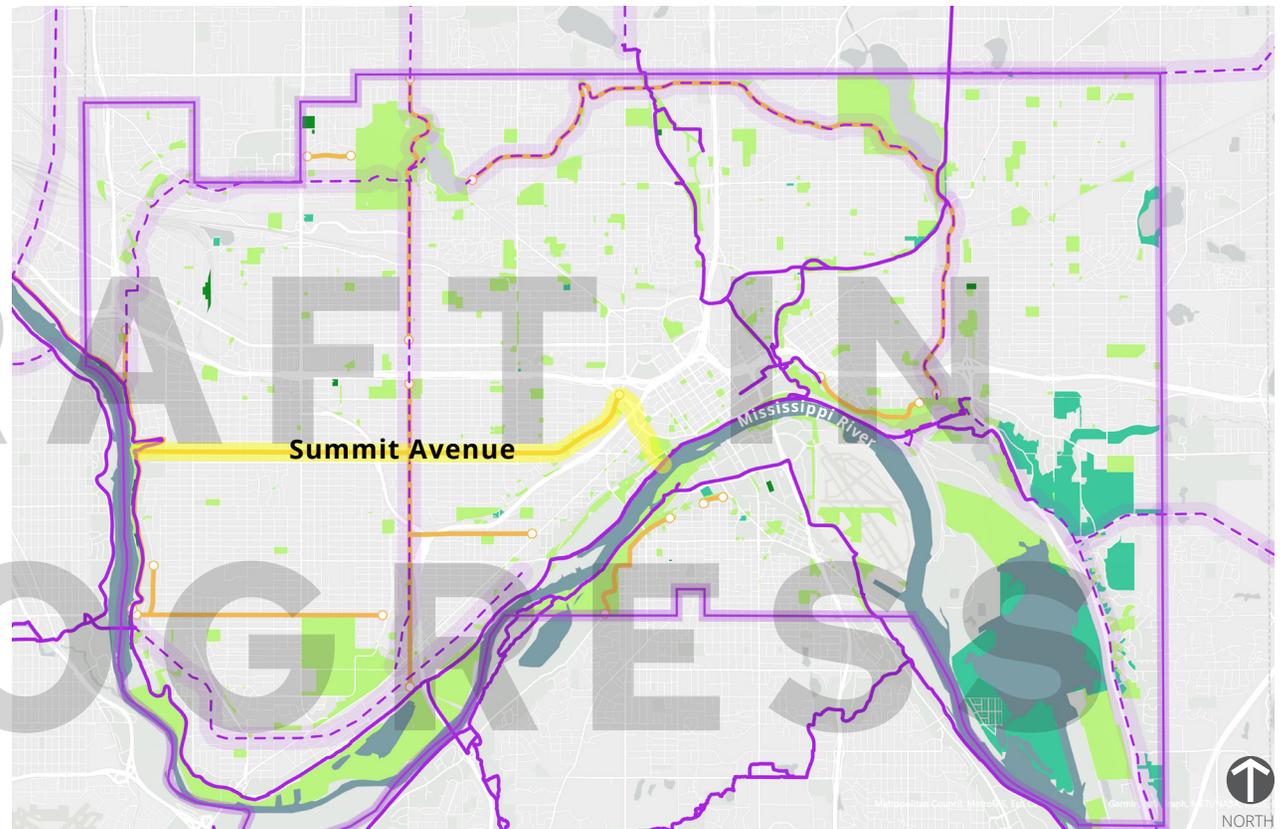


Fig. 3-3 | Regional Trail and Greenspace

Legend

- Regional Trail Search Corridor
- Regional Trail
- Parkway
- Greenspace - City of St. Paul
- Greenspace - Ramsey County
- Greenspace - Federal

Historical Sites and Districts

The Summit Avenue Regional Trail corridor runs through several historic districts, and is situated adjacent to many historical buildings and sites. Additionally, the trail corridor provides access to other historical areas, particularly those within Downtown St. Paul and near the Mississippi River.

The historic districts and sites within the corridor have different requirements and recommendations. In general, some of the significant historical elements defined along Summit Avenue include

the historic architecture, historic granite curbs, general pervious and impervious rhythm, and other character defining features, unique to individual segments of the corridor.

A historical review and approval from the Heritage Preservation Commission (HPC) and the Minnesota State Historic Preservation office (SHPO) may be necessary through the design and development process for each segment of the proposed trail.

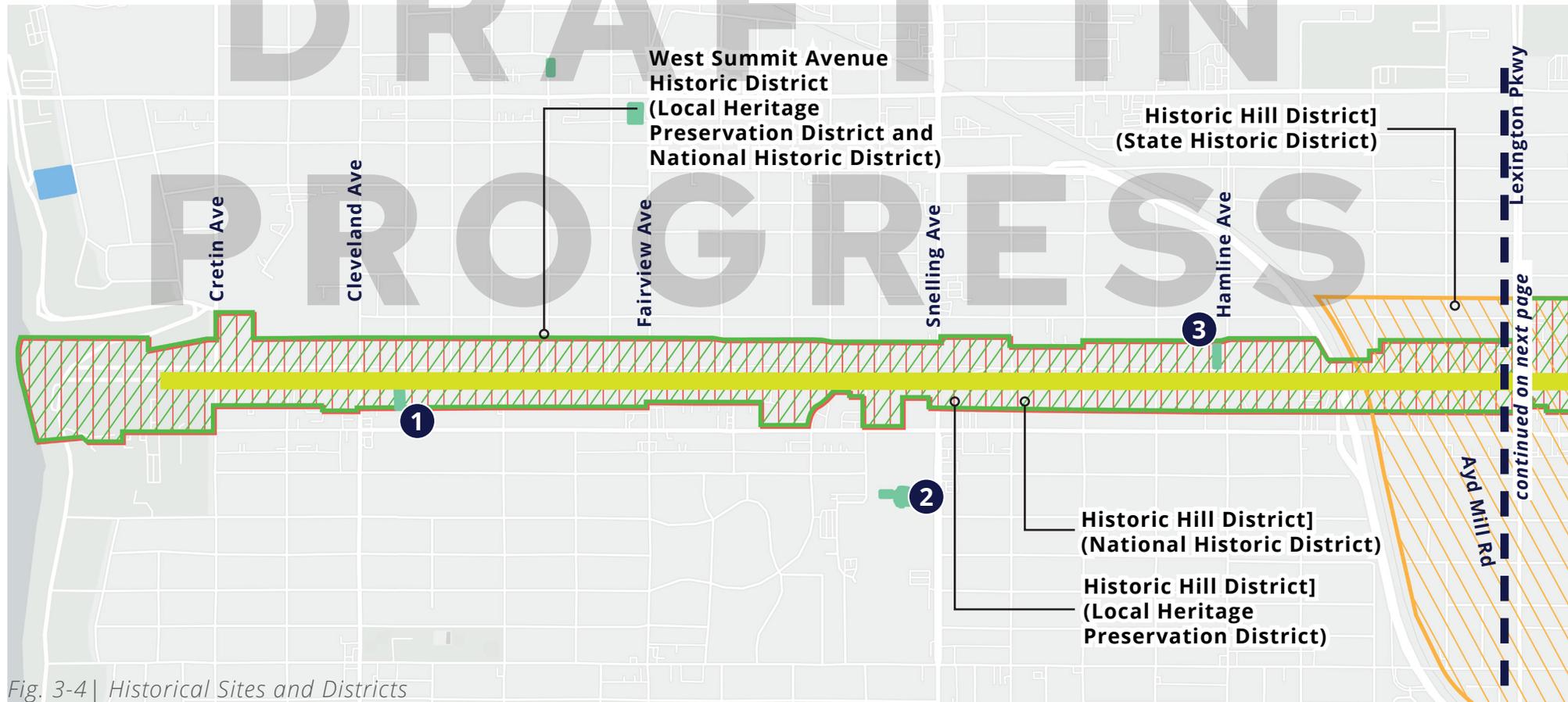
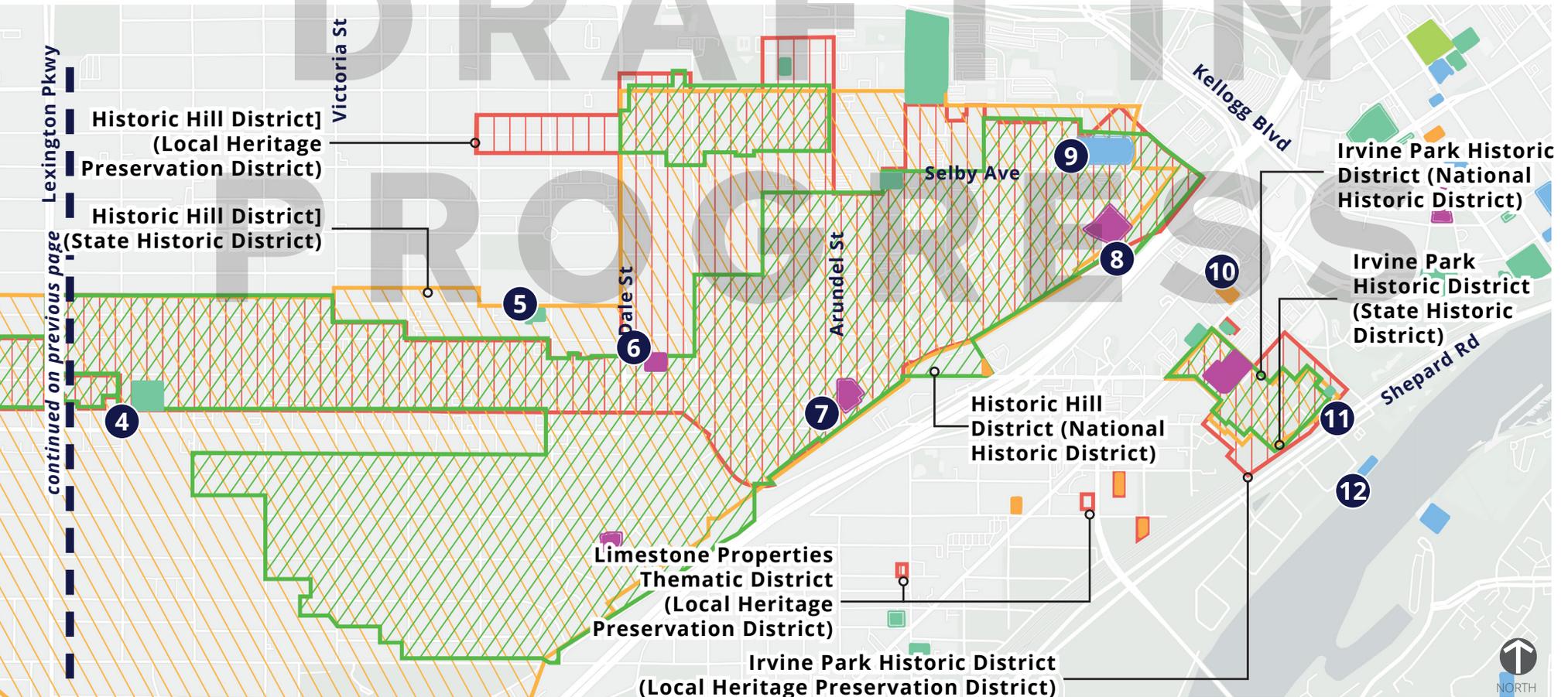


Fig. 3-4 | Historical Sites and Districts

Legend

-  Historic District - Local
-  Historic District - State
-  Historic District - National
-  Historic Site - Locally Listed
-  Historic Site - State Listed
-  Historic Site - Nationally Listed
-  Historic Site - Locally and Nationally Listed
-  Historic Site - Locally, State, and Nationally Listed

- 1 Dr. Ward Beebe House
- 7 Burbank-Livingston-Griggs House
- 2 Old Main (Macalaster College)
- 8 James J. Hill House
- 3 Pierce and Walter Butler House
- 9 St. Paul Cathedral
- 4 Minnesota Governor's Residence
- 10 Smith Building
- 5 Vienna and Earl Apartment Buildings
- 11 John M. Armstrong House
- 6 F. Scott Fitzgerald House
- 12 St. Paul Municipal Grain Terminal



continued on previous page

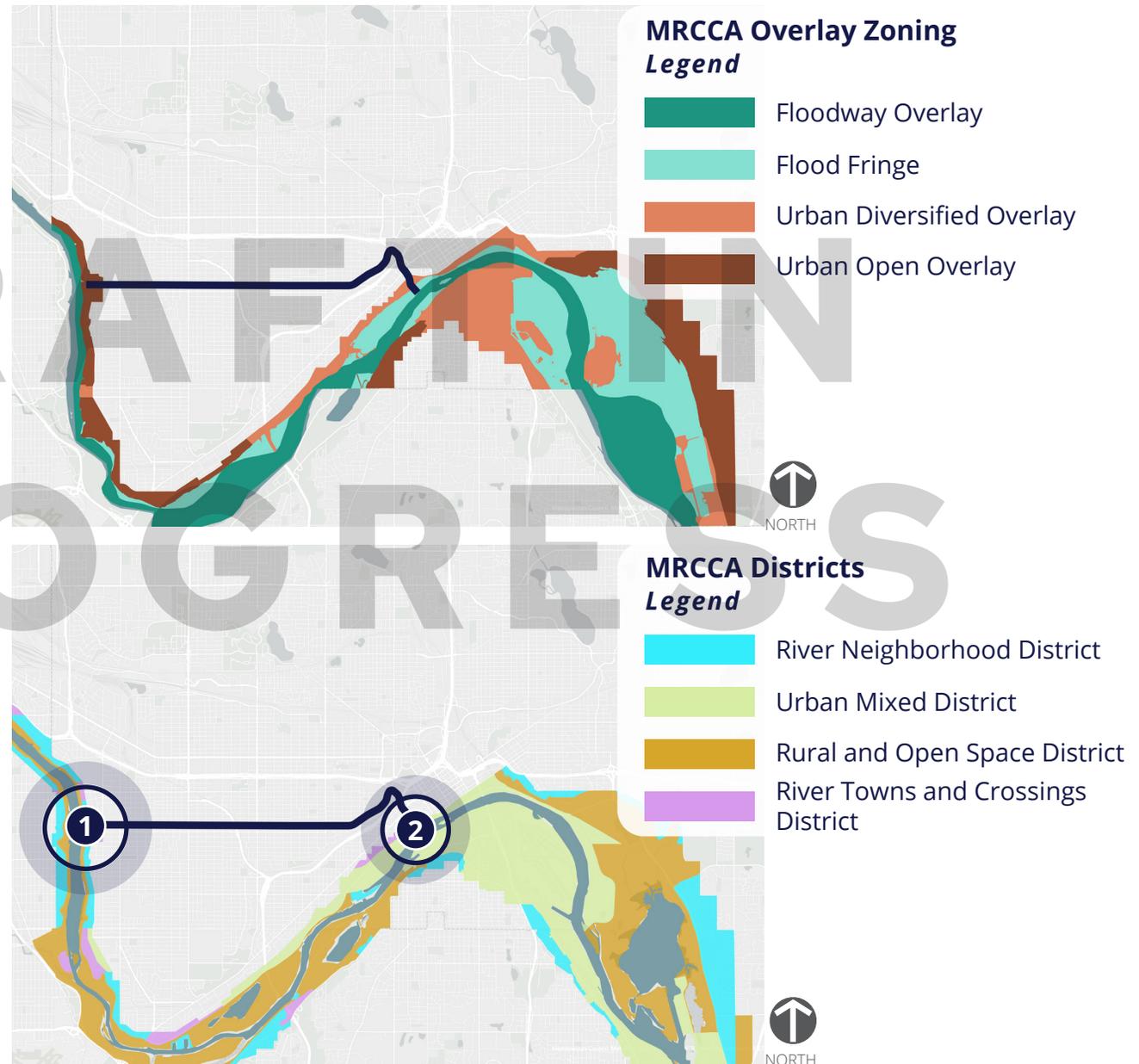


Mississippi River Corridor Critical Area (MRCCA)

MRCCA Districts and Significant Vegetation Stands

The Mississippi River Corridor Critical Area is a State-designated corridor along 72 miles of the Mississippi River in the Twin Cities Metropolitan Area, including 17 miles of river and 26 miles of shoreline in Saint Paul. The Minnesota Rules, Chapter 6106, regulates the planning and development by requiring local governments to complete an MRCCA plan defined by six districts. The language within the MRCCA, along with the 2040 City of Saint Paul Comprehensive Plan, and this master plan document will serve as guidance for planning, design, and maintenance of the trail corridor.

The proposed Summit Avenue Regional Trail is within the River Neighborhood District, the River Towns and Crossings District, the Urban Mixed District, and the Urban Core District. The MRCCA also contains denotation of significant vegetation stands within the boundary. None of these significant vegetation stands exist within the proposed trail facility.



Significant Existing Vegetative Stands in the MRCCA

Legend

- MRCCA Boundary
- MRCCA District Boundaries

Significant Vegetation Stands

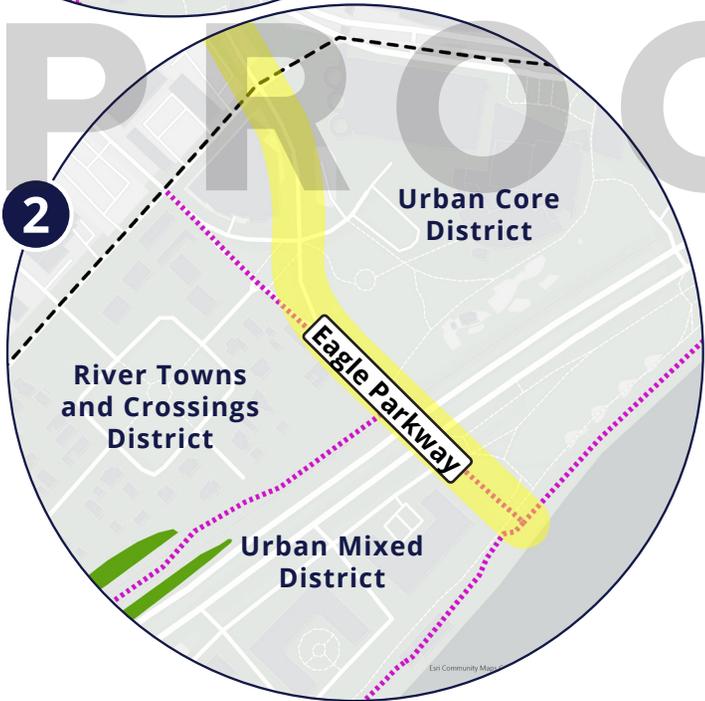
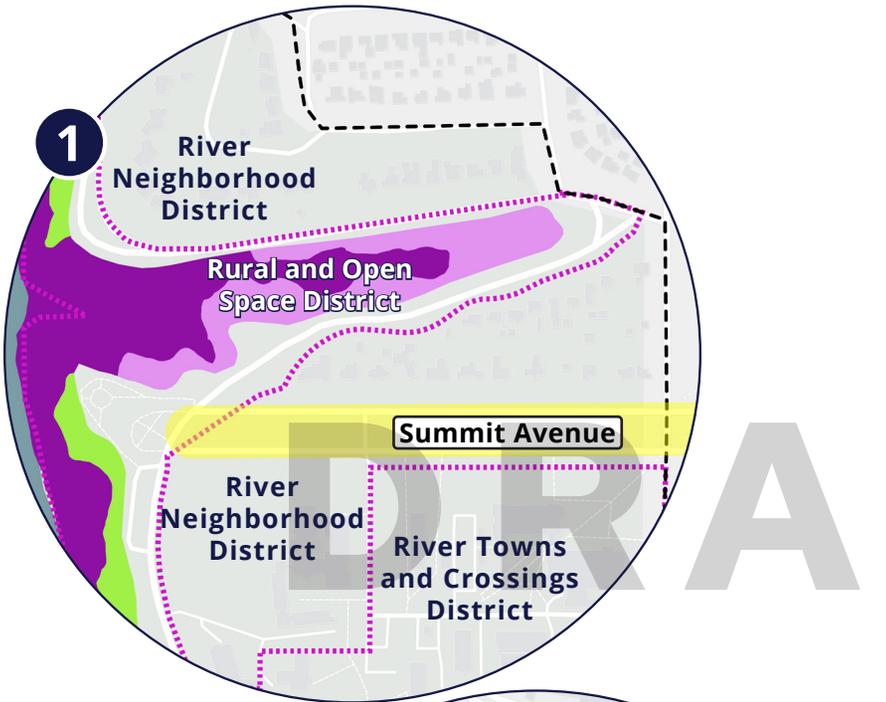
- Midwestern White Oak - Red Oak Forest
- Maple - Basswood - Hardwood Forest
- North - Central Dry - Mesic Oak Woodland
- Midwest Box-elder - Ash Ruderal Forest

River Neighborhood District (CA-RN): Characterized by primarily residential neighborhoods that are riparian or readily visible from the river or that abut riparian parkland. Minimizing erosion and the flow of untreated storm water into the river and enhancing habitat and shoreline vegetation are priorities in the district.

River Towns and Crossings District (CA-RTC): Characterized by historic downtown areas and limited nodes of intense development at specific river crossings, as well as institutional campuses. Minimizing erosion and the flow of untreated storm water into the river, providing public access to and public views of the river, and restoring natural vegetation in riparian areas and tree canopy are priorities in the district.

Urban Core District (CA-UC): Includes the urban cores of Minneapolis and Saint Paul. Providing public access to and public views of the river are priorities in the district.

Urban Mixed District (CA-UM): Includes large areas of highly urbanized mixed use that are a part of the urban fabric of the river corridor, including institutional, commercial, industrial, and residential areas and parks and open space. Restoring and enhancing bluff and shoreline habitat, minimizing erosion and flow of untreated storm water into the river, and providing public access to and public views of the river are priorities in the district.



Natural Resources

Mississippi River Corridor Critical Area

Purposes of MRCCA designation (as detailed in Minnesota Statutes, section 116G.15, subd. 1)

As stated in this section of the 2021 Minnesota Statutes, “the federal Mississippi National River and Recreation Area established pursuant to United States Code, title 16, section 460zz-2(k) is designated an area of critical concern in accordance with this chapter. The purpose of this designation is to:

1. protect and preserve the Mississippi River and adjacent lands that the legislature finds to be unique and valuable state and regional resources for the benefit of the health, safety, and welfare of the citizens of the state, region, and nation;
2. prevent and mitigate irreversible damages to these state, regional and natural resources;
3. preserve and enhance the natural, aesthetic, cultural, and historical values of the Mississippi River and adjacent lands for public use and benefits;
4. protect and preserve the Mississippi River as an essential element in the national, state, and regional transportation, sewer and water, and

recreational systems; and

5. protect and preserve the biological functions of the Mississippi River corridor.”

Compliance with Minnesota Administrative Rules (6106.0130)

This section of administrative code established standards for public facilities that are consistent with best management practices and that protect primary conservation areas. General design standards are explained and include:

- Minimize visibility of the facility to the extent consistent with the purpose of the facility
- Comply with the dimensional standards in part 6106.0120, except as provided in part 6106.0180
- Be consistent with the vegetation management standards in part 6106.0150, subpart 5. and the land alteration and storm water management standards in part 6106.0160, including use of practices identified in Best Practices for and storm water management standards in part 6106.0160, including use of practices identified in Best Practices for Meeting DNR General Public Waters Work Permit GP 2004-001, incorporated by reference under part 6106.0090, where applicable. State or regional agencies, special

purpose units of government, local park agencies, and local units of government with parks within their jurisdiction are not required to obtain a vegetation management or land alteration permit under part 6106.0150 or 6106.0160, but must apply the standards and criteria that would be applied by local government, were a permit required

- Avoid primary conservation areas, unless no alternative exists. If no alternative exists, then disturbance to primary conservation areas must be avoided to the greatest extent practicable, and design and construction must minimize impacts
- Minimize disturbance of spawning and nesting times by scheduling construction at times when local fish and wildlife are not spawning or nesting

Other more specific standards for design of facilities within the MRCCA area outlines in this section. The eventual design and construction of the regional trail facility will adhere to these standards and recommendations.

Natural Resources

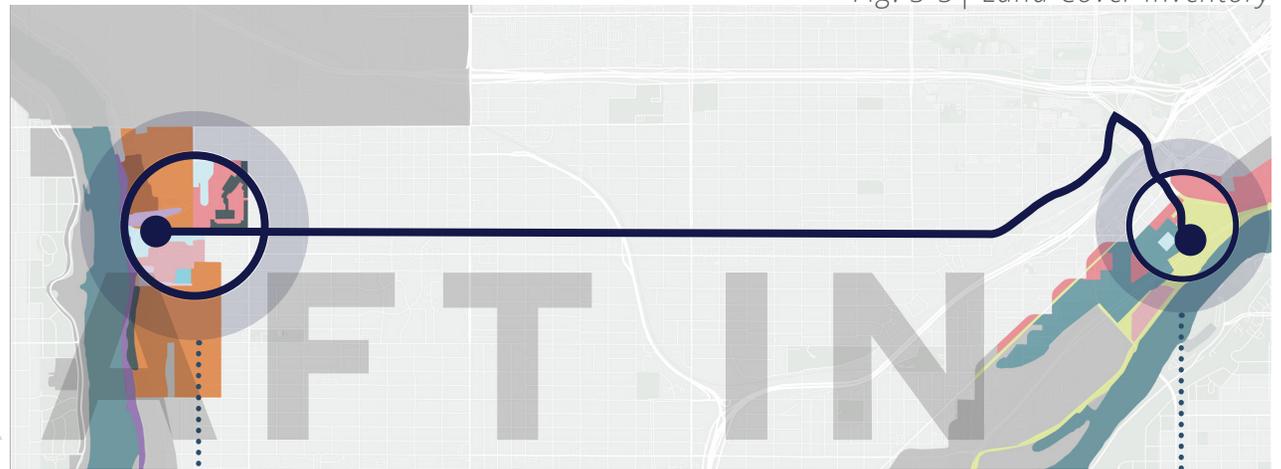
Natural Resources Inventory

Land Cover Inventory

The land cover inventory originates from the Minnesota Land Cover Classification system developed by the Minnesota Department of Natural Resources and Metro GIS. The inventory describes the land cover rather than land use in the described area.

The proposed regional trail intersects with the mapped land cover areas at the eastern and western most sections. The map and legend describes the land cover types including significant vegetation types and species, and impervious coverage.

Fig. 3-5 | Land Cover Inventory



Legend

- 11-25% Impervious Cover with Deciduous Trees
- 26-50% Impervious Cover with Deciduous Trees
- 51-75% Impervious Cover with Deciduous Trees
- Pavement with 91-100% Impervious Cover
- Buildings and Pavement with 76-90% Impervious Cover
- Buildings and Pavement with 91-100% Impervious Cover
- Short grass on Upland Soil
- Short grass and Mixed Trees with 4-10% Impervious Cover
- Short grass and Mixed Trees with 11-25% Impervious Cover
- Short grass and Mixed Trees with 51-75% Impervious Cover
- Oak Forest Mesic Subtype
- Maple and Basswood Forest
- Deciduous Tree on Upland Soil

Mature Tree Canopy and Greenspace

An inventory of trees and greenspace along Summit Avenue was completed as part of the planning process for this master plan. Different aspects of the parkway canopy were mapped including all tree locations, structural and critical root zones, landmark trees, and ash trees within the corridor. The structural and critical root zones are a starting point when considering a trail location and the potential impact on mature trees. A more in depth review of species, health, and location of trees should be completed during the design process of future trail implementation projects.

Landmark trees are trees that have been nominated by community members and identified as significant for environmental, social, and/or economic benefits ¹. There are two landmark trees identified within the Summit Avenue corridor

¹ : <https://www.stpaul.gov/departments/parks-and-recreation/natural-resources/forestry/landmark-tree-program>

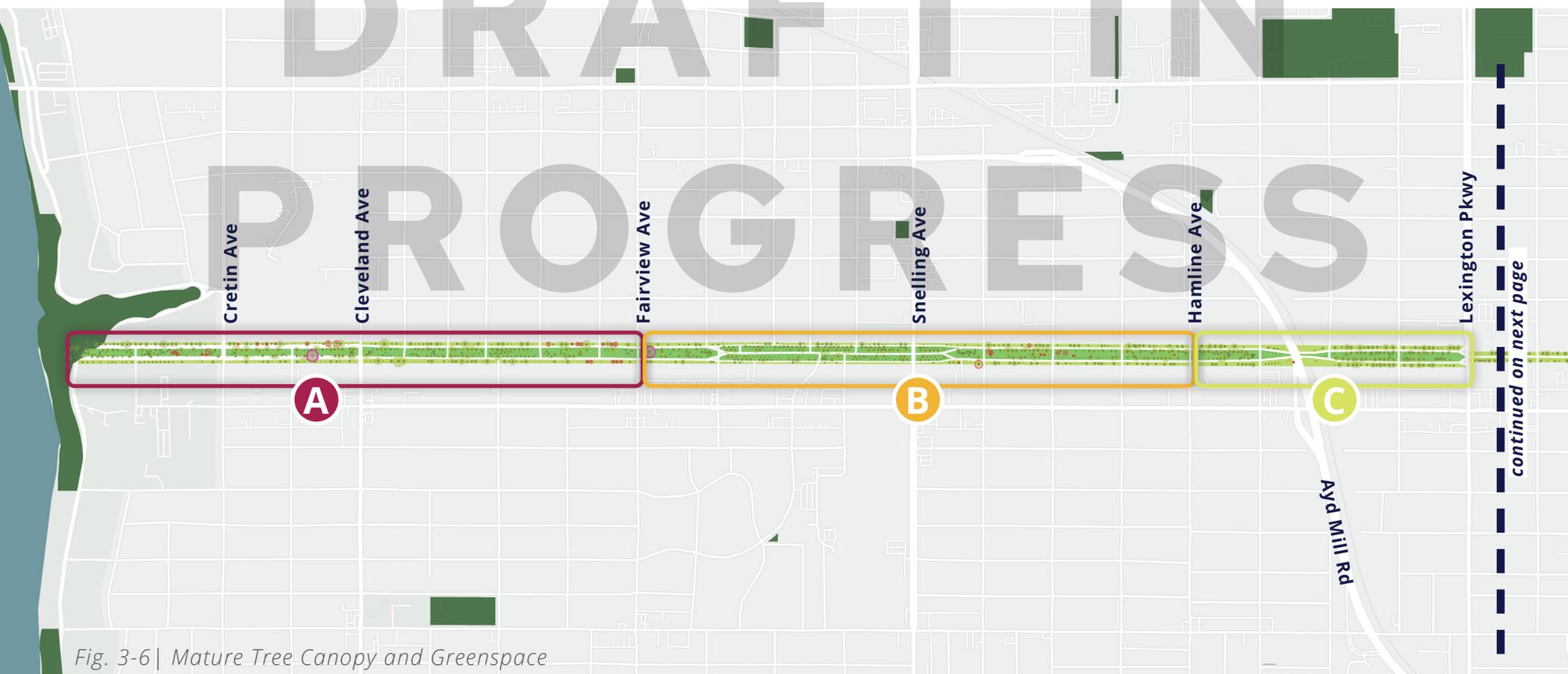


Fig. 3-6 | Mature Tree Canopy and Greenspace

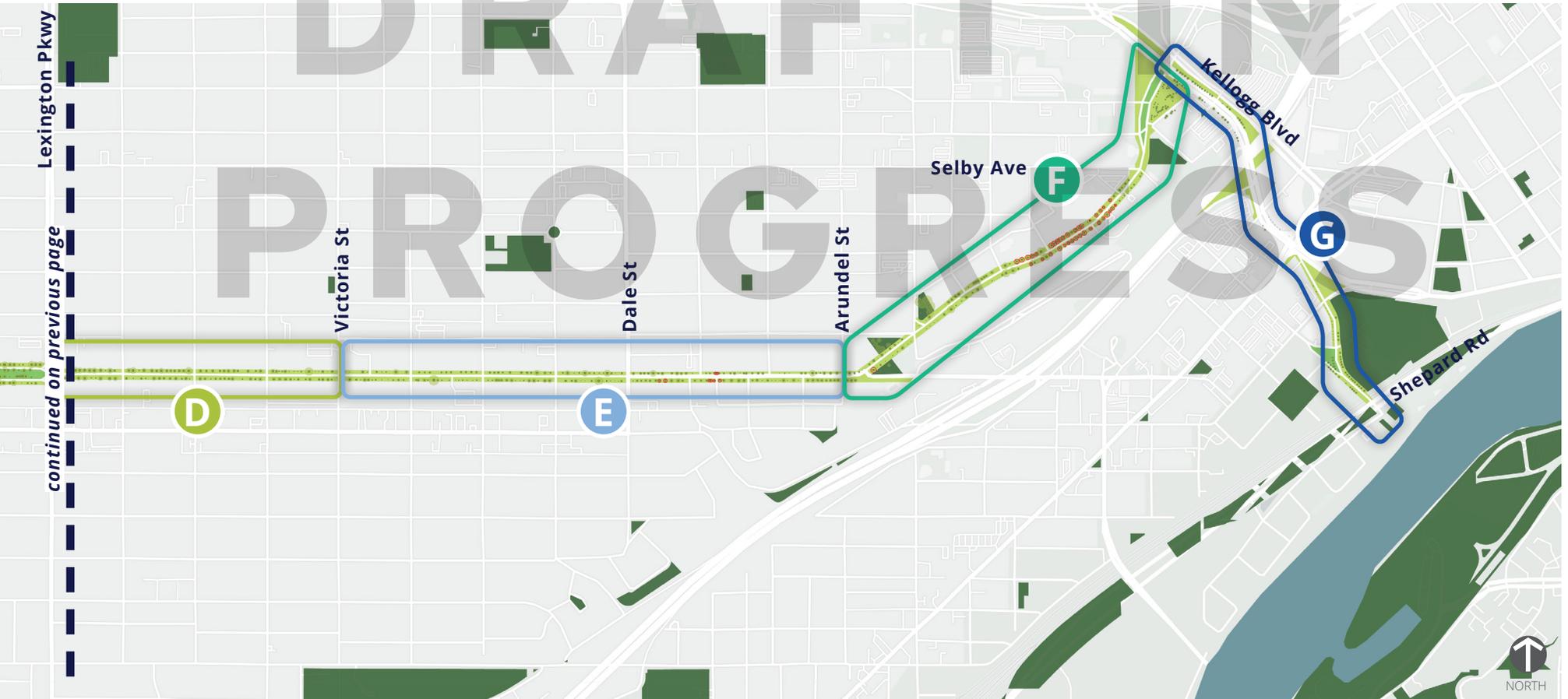
Legend

-  Building Footprint
-  Summit Ave Roadway Median
-  Summit Ave Corridor Boulevard
-  Public Park
-  Tree Structural Root Zone*
-  Tree Critical Root Zone**
-  Landmark Tree
-  Ash Tree

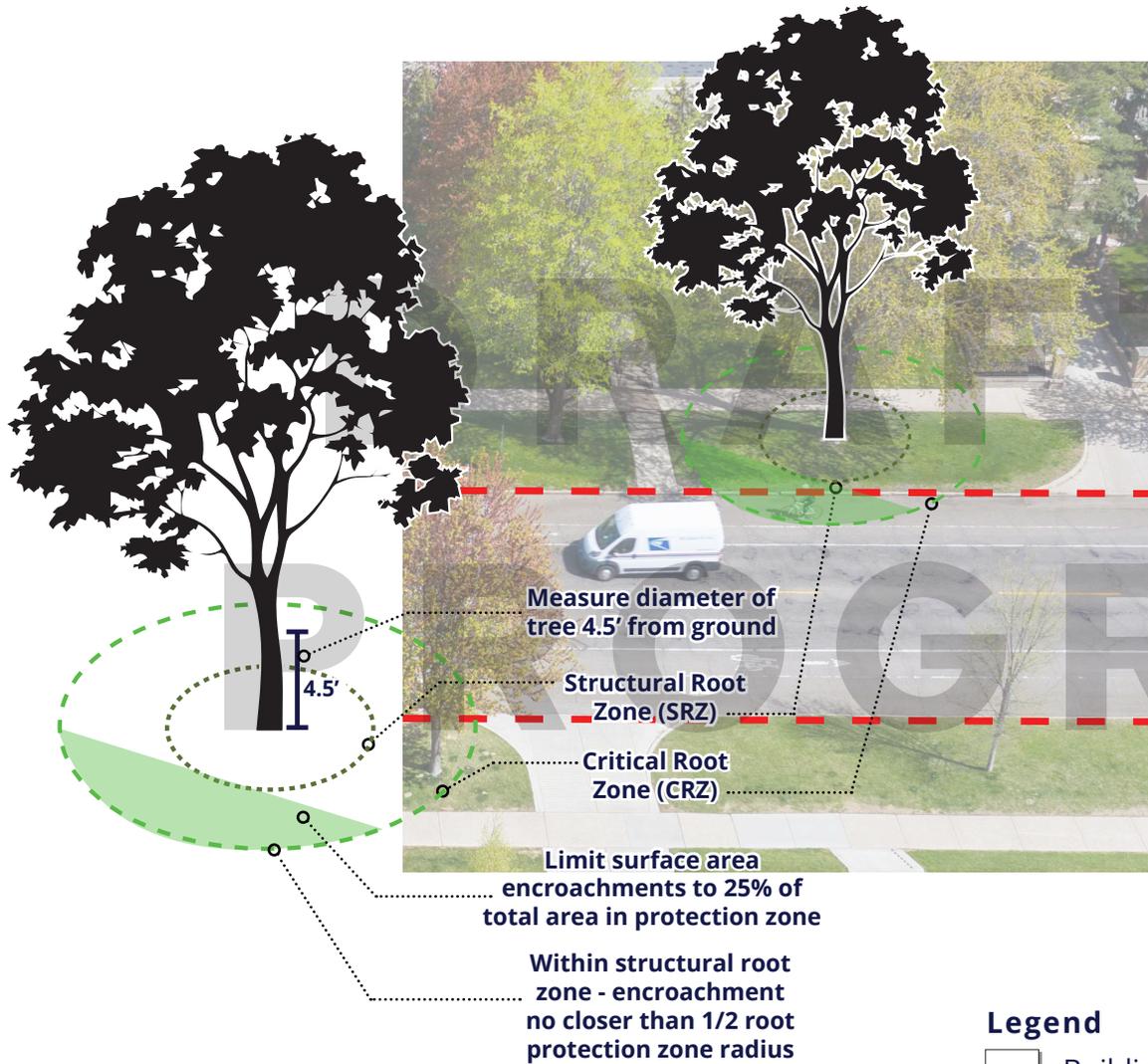
* The tree structural root zone is calculated by multiplying the diameter of a tree (in inches) by .9. This determines the structural rooting area diameter (in feet). Disturbance to the structural root zone increases a tree's risk of failure.

** One inch of trunk diameter equals one foot of critical root zone radius. Disturbance within this area should be done carefully, if at all.

DRAFT IN PROGRESS



Mature Tree Canopy and Greenspace



Understanding the relationship between the proposed curb location and existing tree root zones is a critical component of tree preservation within the trail corridor. The diagram to the left illustrates basic components of the tree root zones and guidance for construction within these zones. The diagram below shows an example of the estimated extents of the root zones in plan view. As shown, critical and structural root zones are suspected to exist under the existing roadway and adjacent sidewalks. During the project design phase, a more thorough and detailed tree inventory should be performed, and a preservation plan should be developed.

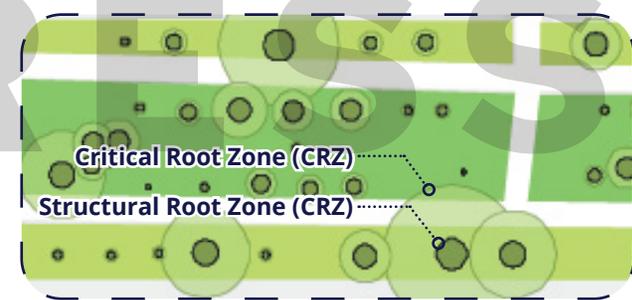


Fig. 3-7 | Structural and critical root zones on Summit Ave

Legend

- Building Footprint
- Summit Ave Roadway Median
- Summit Ave Corridor Boulevard
- Public Park
- Tree Structural Root Zone*
- Tree Critical Root Zone**
- Landmark Tree
- Ash Tree

Mature Tree Canopy and Greenspace

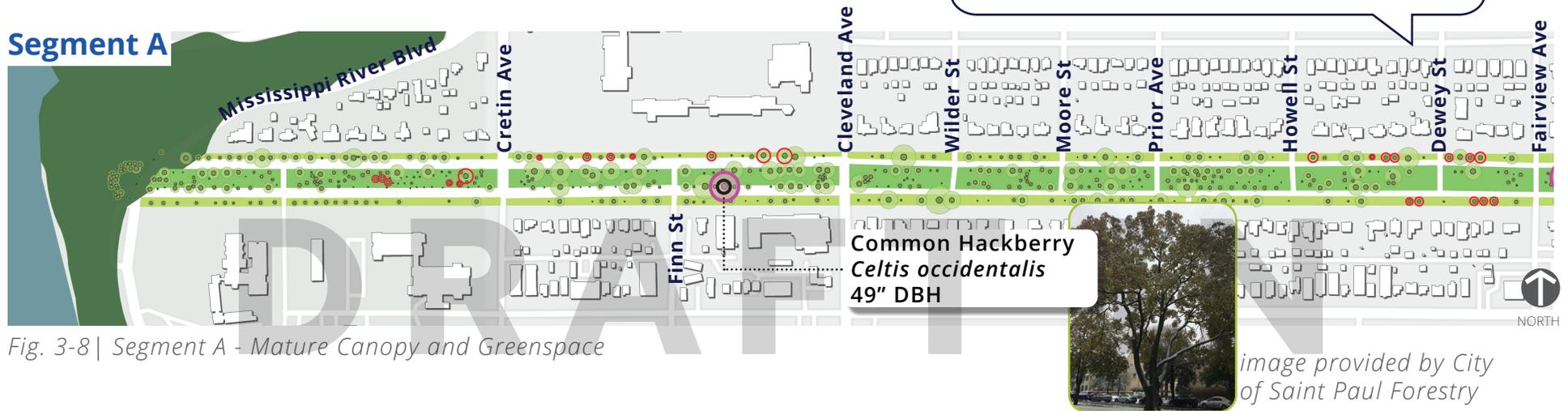


Fig. 3-8 | Segment A - Mature Canopy and Greenspace

- Segment B Greenspace Characteristics:**
- Double green medians
 - One of the corridor's 'landmark trees'
 - No existing ash trees

- Segment C Greenspace Characteristics:**
- 90' green medians
 - ~12 ash trees to be removed by City
 - Significant understory vegetation between Griggs St. and Lexington Pkwy

Segment B and C

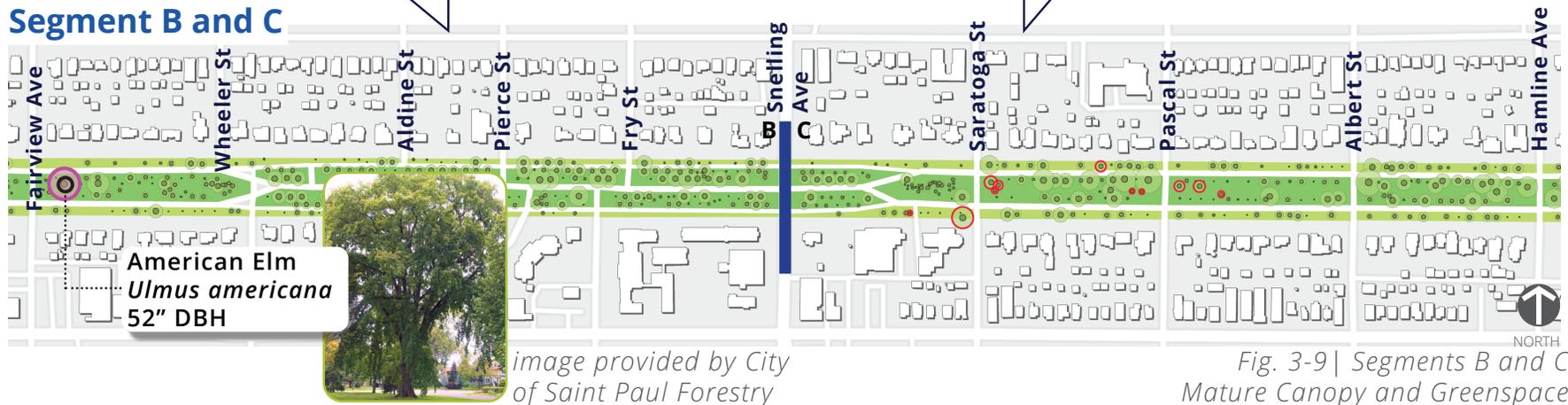


Fig. 3-9 | Segments B and C Mature Canopy and Greenspace

Mature Tree Canopy and Greenspace

Segments C and D

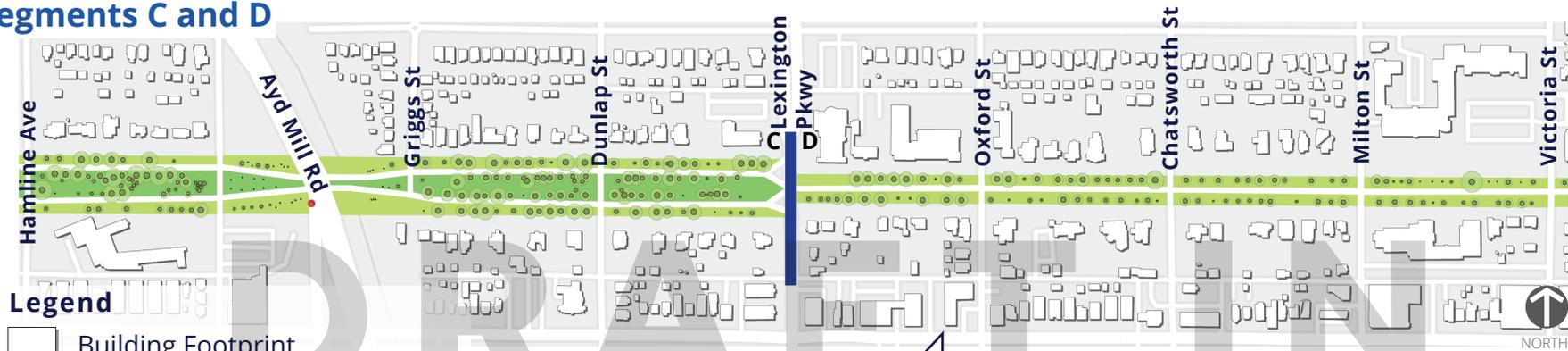


Fig. 3-11 | Segments C and D
Mature Canopy and Greenspace

Segment D Greenspace Characteristics:

- No roadway median
- Characterized by mostly younger, smaller, trees
- No existing ash trees

Segment E Greenspace Characteristics:

- No roadway medians
- ~9 ash trees to be removed by City
- Characterized by some mature, larger trees, mostly smaller, younger trees

Segment E



Fig. 3-10 | Segment E - Mature Canopy and Greenspace

Mature Tree Canopy and Greenspace

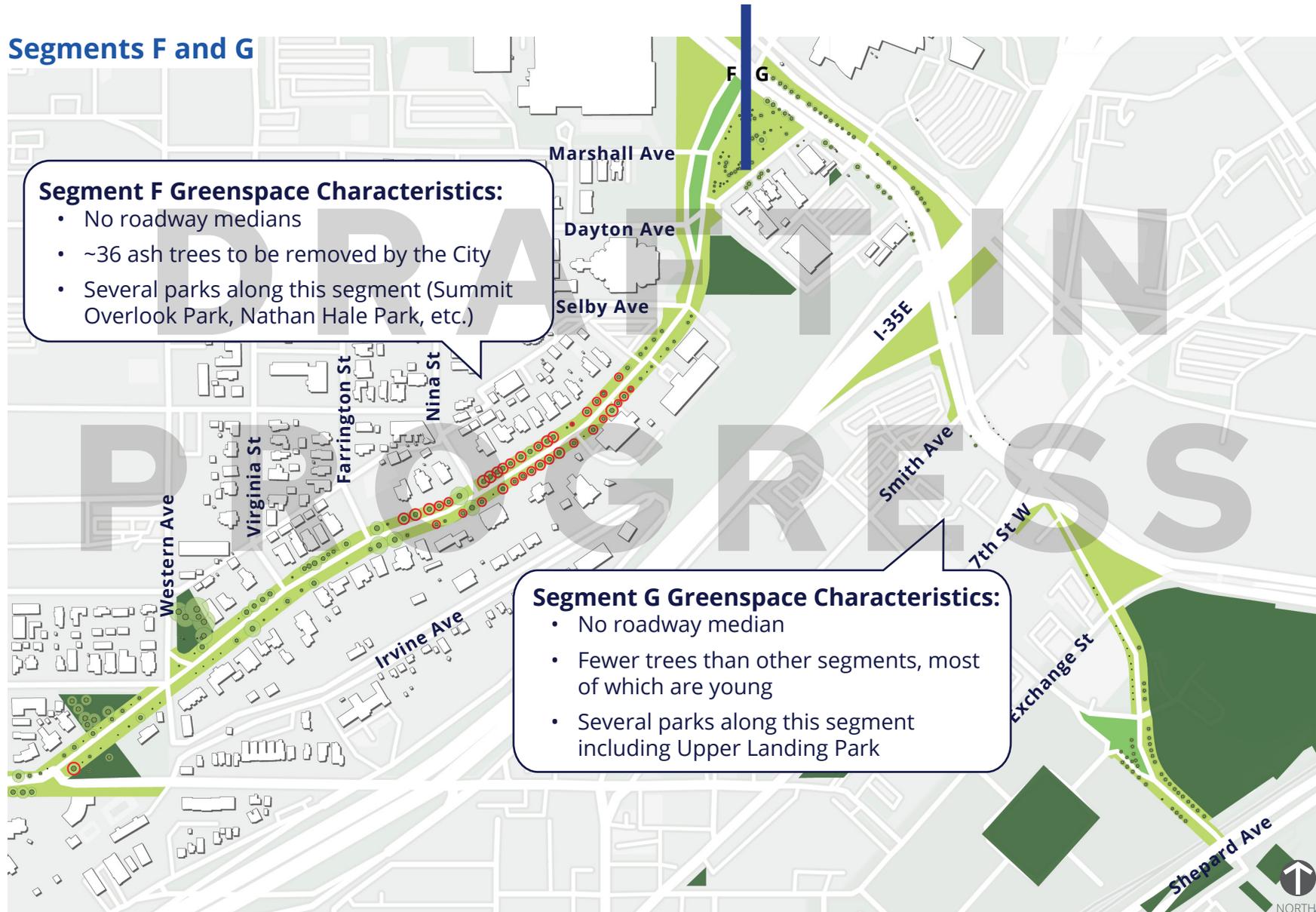


Fig. 3-12 | Segments F and G - Mature Canopy and Greenspace

Circulation, Connectivity, and Access

As a regional linking trail, the proposed Summit Avenue Regional Trail facility seeks to connect regional facilities to one another, and to connect people to those regional parks and trails. Understanding the existing land-use, transportation types, and future planned routes illustrates the potential for the proposed regional trail along Summit Avenue. The corridor connects to several exiting bike routes, transit routes, and other regional trails. It also connects residential and commercial areas from the river to downtown Saint Paul.

Information on the map below is provided by The Saint Paul Department of Planning and Economic Development « <https://stpaul.maps.arcgis.com/apps/webappviewer/index.html?id=21c68099a3124881b4411859ff66c3e3> »

Additional parcel level data can be found through Ramsey County's resource page « <https://maps.co.ramsey.mn.us/MapRamsey/> »

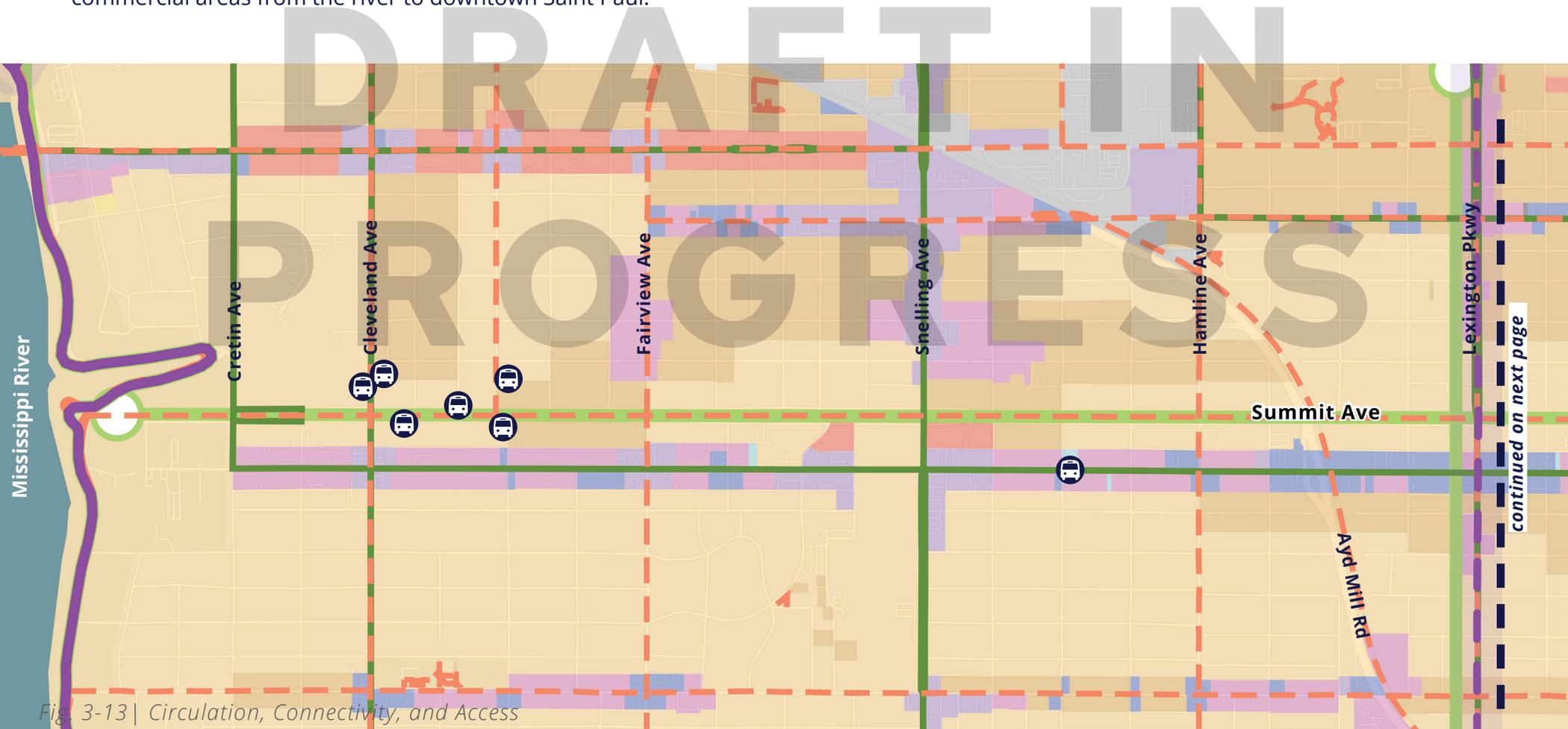


Fig. 3-13 | Circulation, Connectivity, and Access

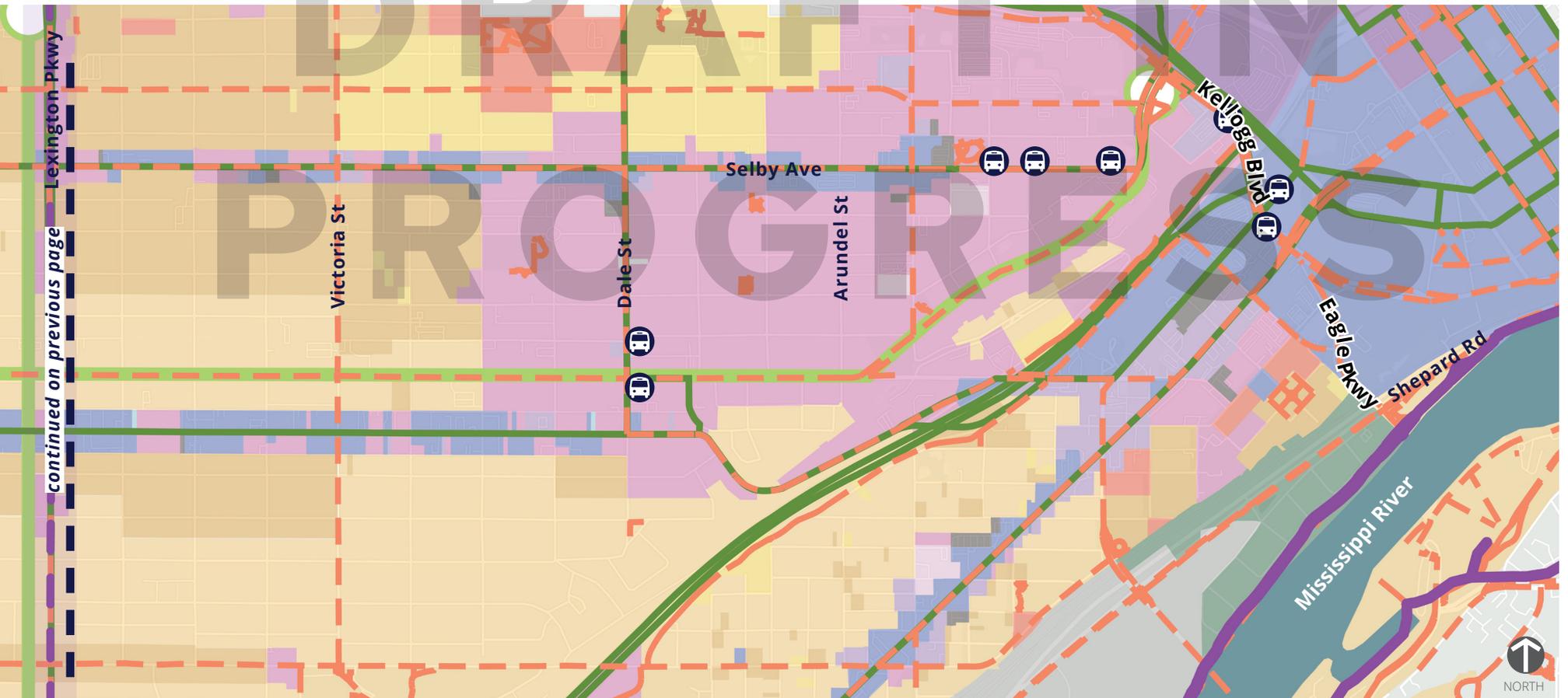
Legend

Transportation

-  Transit Route
-  Parkway
-  Regional Trail
-  Regional Trail Search Corridor
-  Bikeway
-  Transit Stop

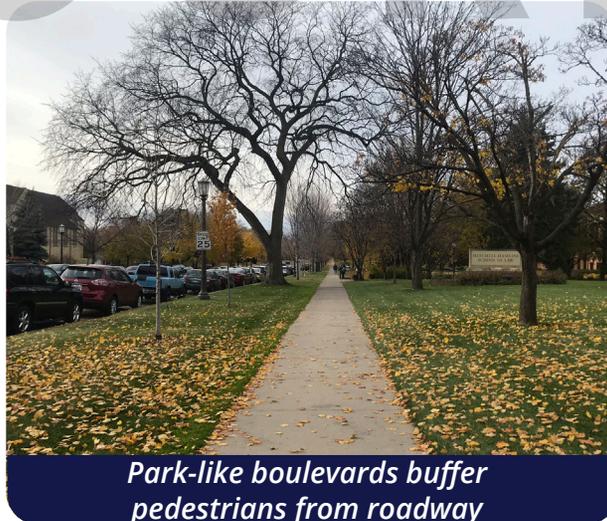
Zoning

-  Two Family Residential
-  One Family Residential
-  Townhouse Residential
-  High Rise Multi Family
-  Medium Density Multi Family
-  Low Density Multi Family
-  Traditional Neighborhood
-  Business
-  Office Service
-  Parking
-  Industrial
-  Capitol Area Jurisdiction
-  T3 with Master Plan



Circulation, Connectivity, and Access

Opportunities and Constraints



Circulation, Connectivity, and Access

Opportunities and Constraints



Year-round use of running trail through central median



Poor sidewalk conditions



No access to Walnut Street steps, a potential connection point



Accessibility issues at transit stops



Mid-block pedestrian crossings



Park amenities and connection to greenspace

Roadway Characteristics

Typical Sections

The following three typical sections are present in the Summit Avenue corridor:

Section Type	Segment						
	A	B	C	D	E	F	G
200' ROW with single median	○		○				
200' ROW with double median		○					
100' ROW with no median				○	○	○	
Variable							○

Segments D, E, and F vary in their sidewalk width. All three segments include approximately 26-feet behind the back of curb. Segment D includes a 6-foot sidewalk; the sidewalks in Segment E vary from 6- to 8-feet; and Segment F includes a 10' sidewalk. The conditions of segment G vary greatly. Portions are characterized by minor arterial and local roadway classifications, with varying ROW widths and sidewalk conditions.



Fig. 3-14 | Typical 200-foot ROW with single median



Fig. 3-15 | Typical 200-foot ROW with double median

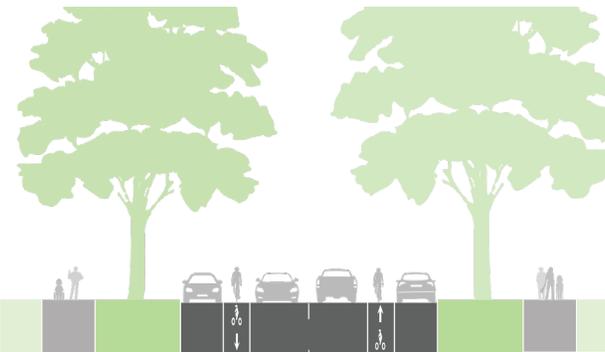


Fig. 3-16 | Typical 100-foot ROW with no median

Roadway Characteristics

Intersection Types

There are 48 roads intersecting the identified trail corridor between Mississippi River Boulevard and Kellogg Boulevard (segments A through F, 4.7 miles). Of these 48 intersections, 45 are full access and 3 are reduced access (S Wheeler St, Aldine St, Cambridge St). The dominant traffic controls at intersections are side street stops and signalized intersections. Intersections are spaced anywhere from approximately 350- to 900-feet apart. Intersection spacing is more regular, at around 650-feet, east of Snelling Avenue.

All segments – and sections - include both of these intersection types creating six “typical” intersections.

1. Traffic signal at single median
2. Side-street stop at single median
3. Traffic signal at double median
4. Side-street stop at double median
5. Traffic signal without median
6. Side-street stop without median

Two intersections fall outside of these intersection types. The intersection with Mississippi River Boulevard has side street stops on Summit and there is an all-way stop at the intersection with Ramsey Street. The implications of intersection types will be explored in future design phases.

Transition Types

The transitions between typical sections will require additional attention and exploration of how to best design the regional trail to ensure a consistent alignment, user-friendly wayfinding, and safe & comfortable crossings at roadways. Moving west to east, the three transitions and their locations are listed below. All transitions occur at signalized intersections:

- Fairview Avenue - single to double median
- Hamline Avenue - double to single median
- Lexington Parkway - single median to no median

Atypical Areas

There are several sections and points in the corridor which are atypical and do not align with the previous descriptions. The Ayd Mill Road bridge is the primary atypical component in segments A through F. Segment G may also be considered atypical as it's character and roadway characteristics differ considerably from Summit Avenue. Alignment alternatives for these areas will be explored in future design phases.

Traffic Analysis

Multi-modal Travel Volumes

The City of St. Paul's Department of Public Works has conducted annual bicyclist and pedestrian counts since 2013. These counts take place mid-week in September during peak hours (4-6 p.m.). Benchmark locations are used each year to measure annual changes in non-motorized traffic. Typically, 30 benchmark sites for bicyclist traffic and 25 benchmark sites for pedestrian traffic have been counted since 2013. The number of locations counted is dependent on the number of participating volunteers who manually tabulate the counts. In 2019, 21 benchmark sites were counted for bicyclist traffic and 13 benchmark sites were counted for pedestrian traffic.

In the 2019 bicyclist and pedestrian counts, Summit Avenue (east of Fairview Ave) had the second highest bicycle counts, and three of the top five top walking counts (east of Cleveland Ave, east of Fairview Ave, and east of Western Ave).

Bicycle:

- Summit Avenue (east of Fairview Ave) had 252 bicyclist counts in 2019, an average of 239 (2013-2019), a 6% drop from 2013-2019, and a 20% increase from 2018-2019.
- Summit Avenue (east of Dale St) had 126 bicyclist counts in 2018, an average of 135 (2013-2018), and a 25% drop from 2013-2018.

- Summit Avenue (east of Cleveland Ave) had 121 bicyclist counts in 2019, an average of 180 (2017-2019), and a 46% drop from 2017-2019.
- Summit Avenue (east of Western Ave) had 78 bicyclist counts in 2019, an average of 112 (2013-2019), and a 37% drop from 2013-2019.

Pedestrian:

- Summit Avenue (east of Fairview Ave) had 180 pedestrian counts in 2019, an average of 239 (2013-2019), a 6% drop from 2013-2019, and a 20% increase from 2018-2019.
- Summit Avenue (east of Dale St) had 143 pedestrian counts in 2018, an average of 171 (2013-2019), and a 16% drop from 2013-2018.
- Summit Avenue (east of Cleveland Ave) had 228 pedestrian counts in 2019, an average of 256 (2017-2019), and a 22% drop from 2017-2019.
- Summit Avenue (east of Western Ave) had 171 pedestrian counts in 2019, an average of 135 (2013-2019), and an 8% increase from 2013-2019.

Vehicular:

Annual average daily traffic volumes on Summit Avenue are 7,000-8,400 west of Lexington Avenue, 11,200 from Lexington Avenue to Ramsey Street, and 3,900 from Ramsey Street to John Ireland Boulevard.

2040 Forecasted volumes remain the same. Snelling Avenue, Lexington Avenue, and Kellogg Boulevard have the highest traffic volumes of the cross streets in the trail corridor at 17,000-28,000 AADT. (Source: MnDOT Traffic Counts)

Traffic Considerations:

Traffic and intersection impacts will be evaluated along with conceptual trail alignments through the design phase of each segment. Intersections which are more complex - for example, at transition points, with higher traffic volumes, or with a high number of conflict points - will be evaluated with potential trail facilities to identify design solutions that support the multi-modal nature of the corridor.

Parking

Parallel on-street parking is consistent along Summit Avenue with variations in restrictions (permit requirements, hours, etc). There is no on-street parking along Kellogg Avenue or Eagle Parkway (segment G). The parking studies conducted in 2019 and 2022 are noted on the following pages of this document. An additional parking study should be conducted in conjunction with the planning and design of each segment to ensure sensitive, context-based approaches are being used.

Traffic Analysis

Parking

2019 Parking Study

A parking study was conducted by the City along Summit Avenue in the summer and fall of 2019 to determine the feasibility of overnight parking restrictions in order to perform routine maintenance along the road. The parking counts spanned from Mississippi River Boulevard to Selby Avenue (segments A-F). Counts were taken on three different Thursday and Friday nights between the times of midnight and six a.m. The following excerpt from the memorandum dated January 31, 2020 (Kathy Lantry, Department of Public Works), summarized the results of the study:

- Parking utilization rates well below 50% were observed along most of Summit Avenue on all six count dates.
- Parking utilization rates above 75% were consistently observed for a two block segment near Dale Street as well as on intersecting side streets near Dale Street.
- Parking utilization rates above 50% were observed near the University of St. Thomas in September when school was in session.

2022 Supplementary Parking Study

As part of this master planning process, an additional parking study was conducted from Lexington Parkway to Selby Avenue, as well

as on side streets immediately adjacent to Summit Avenue between Grotto Street and Selby Avenue. Parking data was collected on three dates in February 2022 - Thursday February 10th, Saturday February 12th, and Sunday February 13th. A summary of the additional results are below:

- Parking utilization in the corridor is generally modest, average 30% utilization over study area
- Area near Dale Street saw consistently high usage

The data collected from both of these studies showed similar results - generally parking utilization is under 50% on Summit Avenue with the exception of the areas around Dale Street. The parking study also noted a higher number of parked cars on Sunday morning near places of worship along Summit Avenue.



Traffic Analysis

To understand the current safety concerns on the Summit Avenue corridor, the reported crash information available from the Department of Transportation to the City of Saint Paul was reviewed and analyzed. This includes a review of all crashes along the corridor and a specific look into the pedestrian and bicyclist involved crashes.

**Studied Corridor Length: 4.5 miles
(Mississippi River Blvd to Kellogg Blvd)**

Pedestrian and Bicyclist Crashes

(includes vehicle to pedestrian and vehicle to bicyclist crashes)

Total pedestrian and bicyclist involved crashes (2012 to 2021*): 63

- 31 pedestrian-involved crashes
- 32 bicyclist-involved crashes

*Since pedestrian and bicyclist involved crashes are more random in nature and occur less frequently, a full ten-year analysis was conducted.

Note: This data may be underestimated as many pedestrian and bicyclist involved crashes go unreported, especially if there are no injuries or fatalities involved.

The highest concentration of pedestrian and bicycle involved crashes occurred between Lexington Pkwy and Ramsey St.

Crash Severity

- 100% of reported pedestrian crashes resulted in an injury or fatality
- 90% of reported bicyclist involved crashes resulted in an injury or fatality

The crash data available indicates that pedestrian and bicyclist crashes on Summit Avenue tend to result in injuries or fatalities. This is relatively consistent with national trends on reported pedestrian and bicyclist crashes.

Data Summary

There have been 63 crashes involving pedestrians and bicyclists in the past ten years. Most of these pedestrian and bicyclist involved crashes resulted in injuries or fatalities.

The full crash review report can be found in the document appendix.

Traffic Analysis

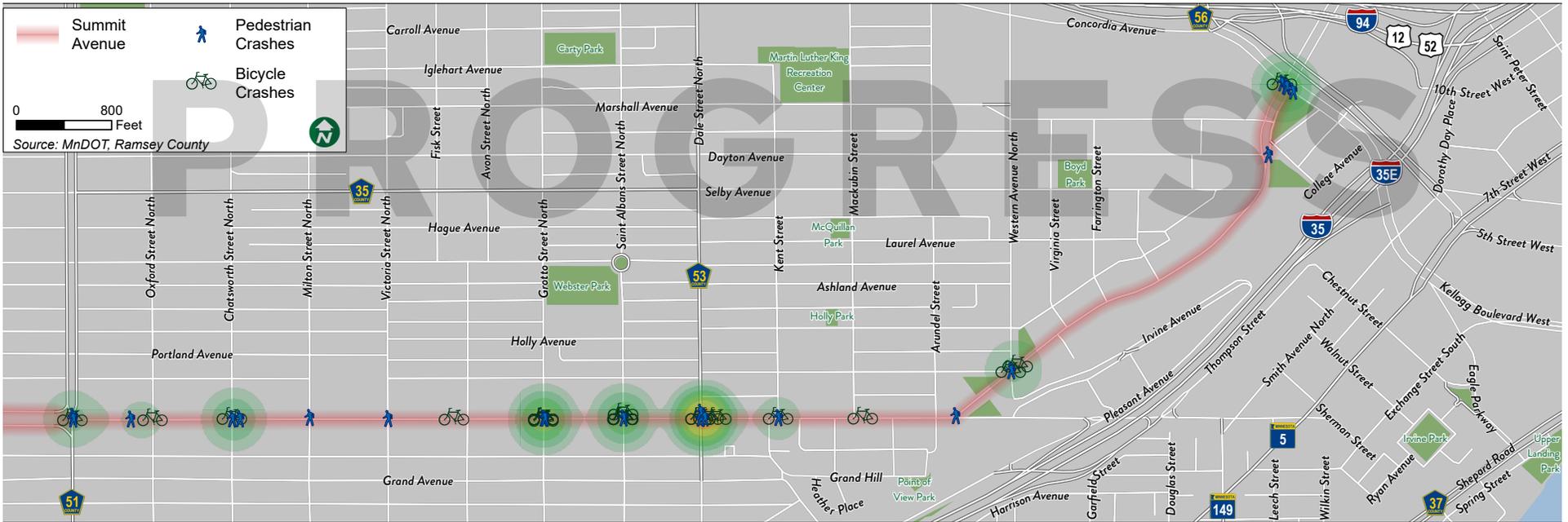


Fig. 3-17 | Summit Avenue Pedestrian and Bike Crashes (2012-2021)

Existing Conditions by Segment

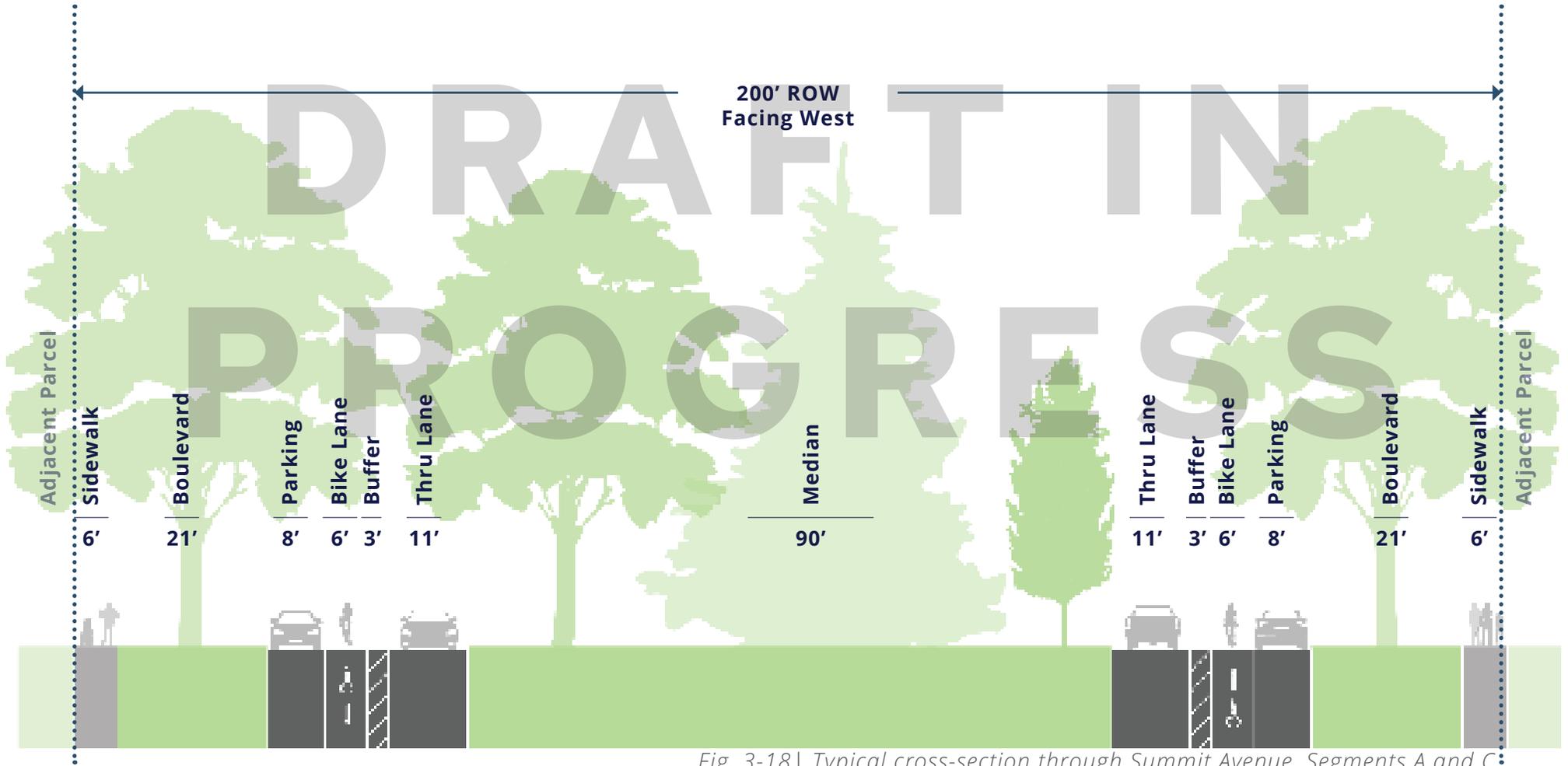


Fig. 3-18 | Typical cross-section through Summit Avenue, Segments A and C

Existing Conditions by Segment



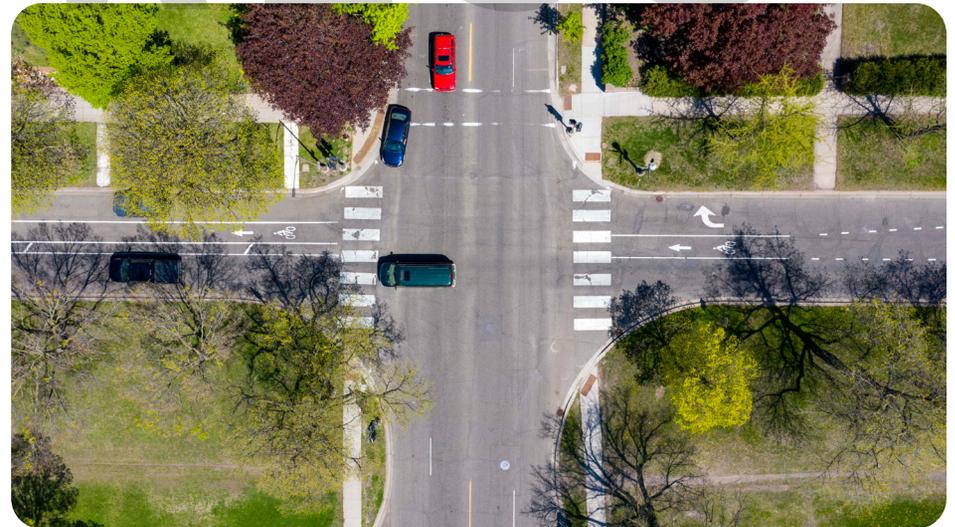
Summit Ave and Cleveland Ave



Summit Ave and Cretin Ave



Summit Ave and Ayd Mill Rd



Summit Ave and Hamline Ave

Existing Conditions by Segment



Segment A



University of Saint Thomas

Connection to Mississippi River Blvd

Seminaries of Saint Paul

Segment C

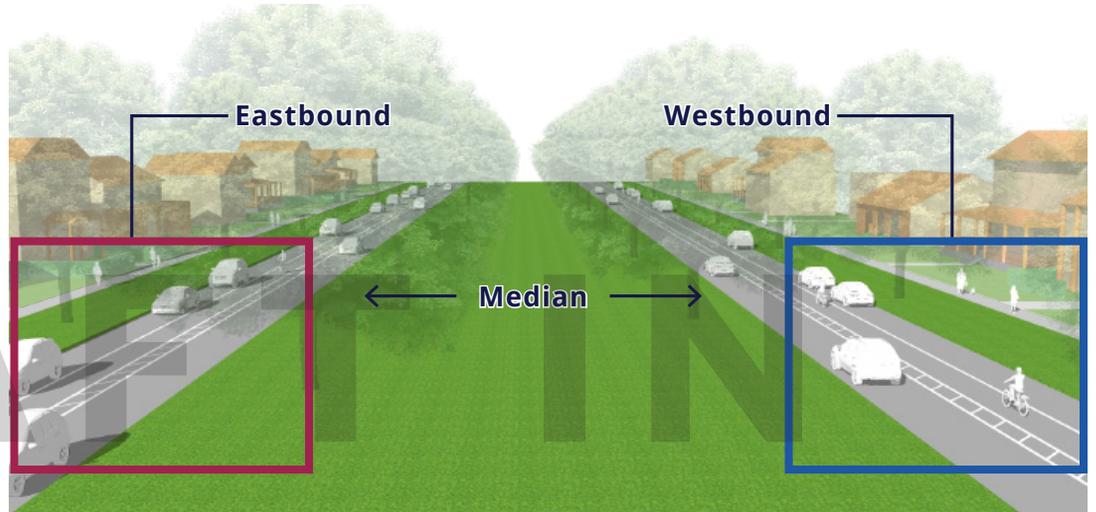


Ayd Mill Rd Bridge

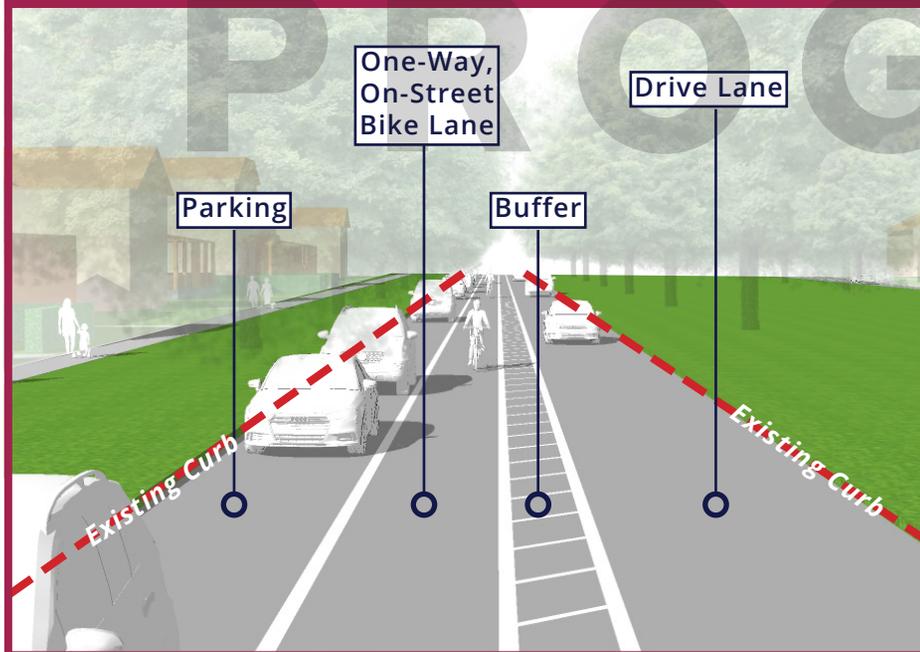
Mt. Zion Temple

Existing Conditions by Segment

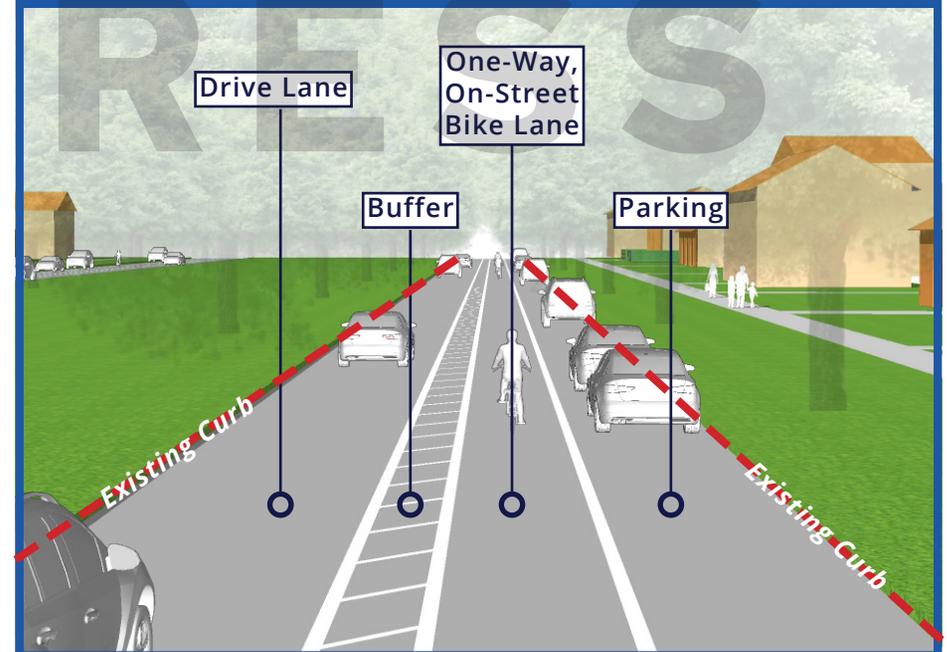
Public Right-of-Way Corridor | Facing West



Eastbound Roadway



Westbound Roadway



Existing Conditions by Segment

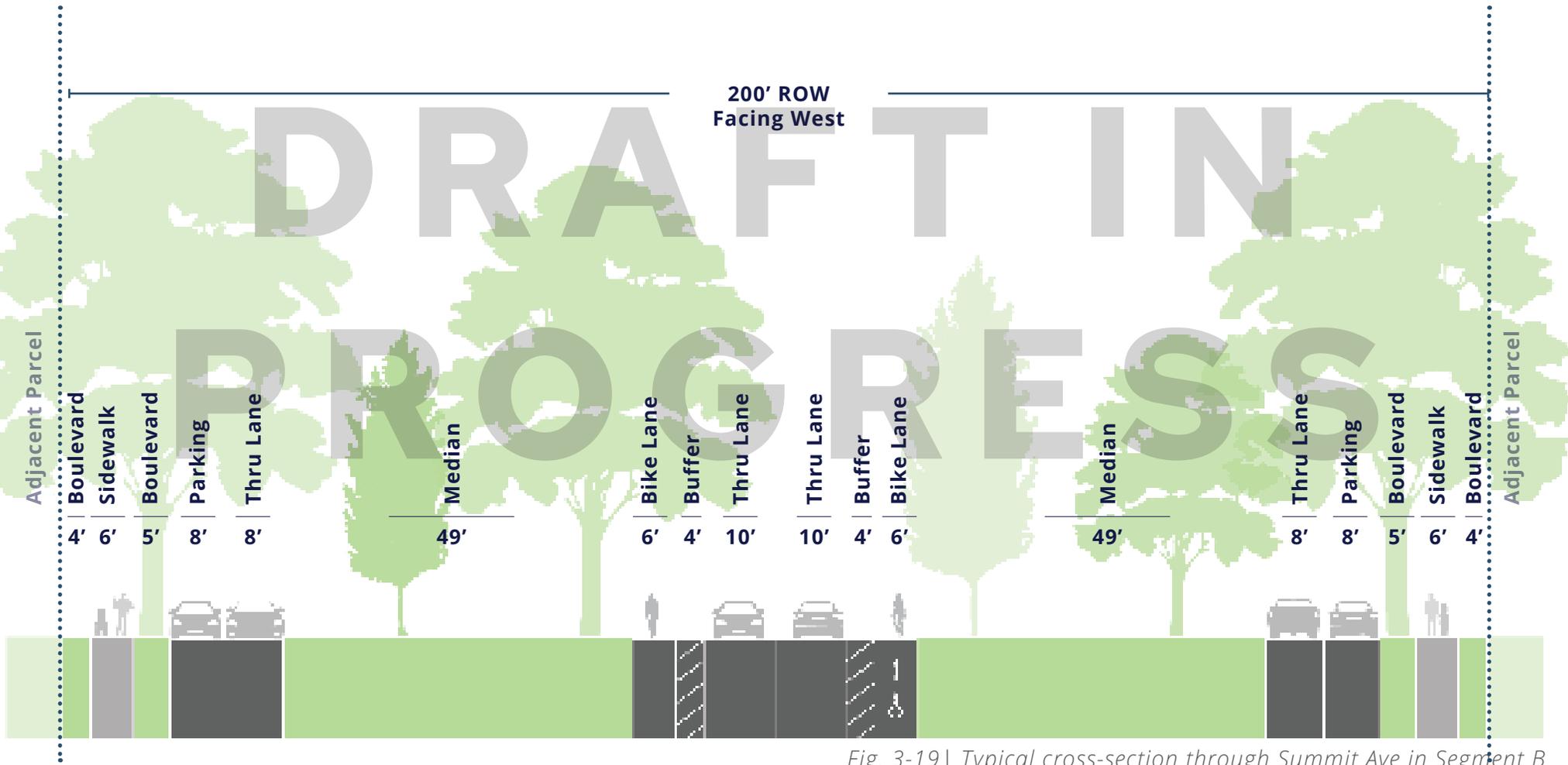
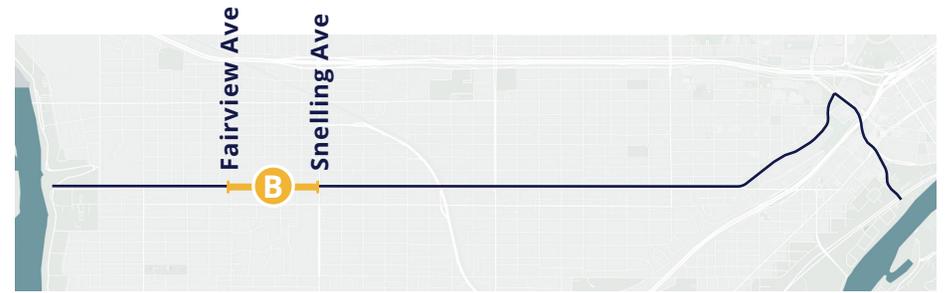
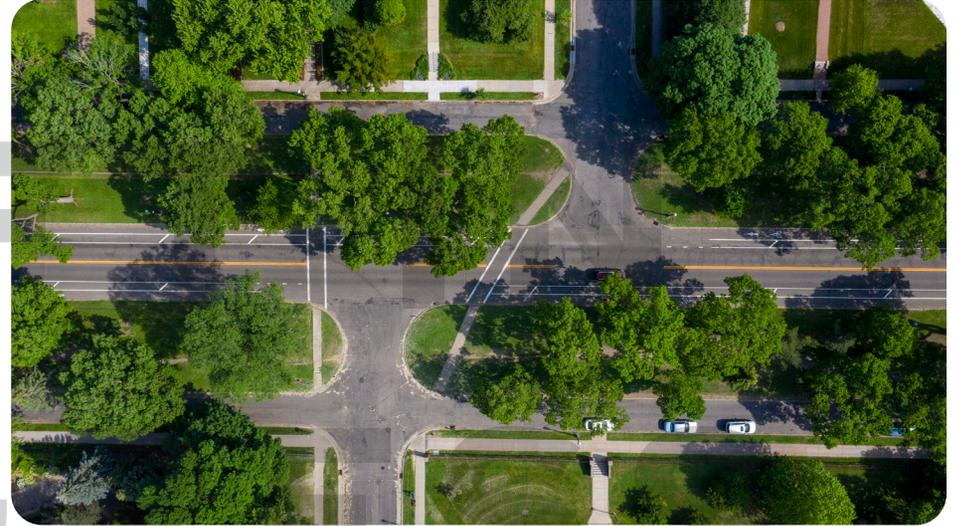


Fig. 3-19 | Typical cross-section through Summit Ave in Segment B

Existing Conditions by Segment



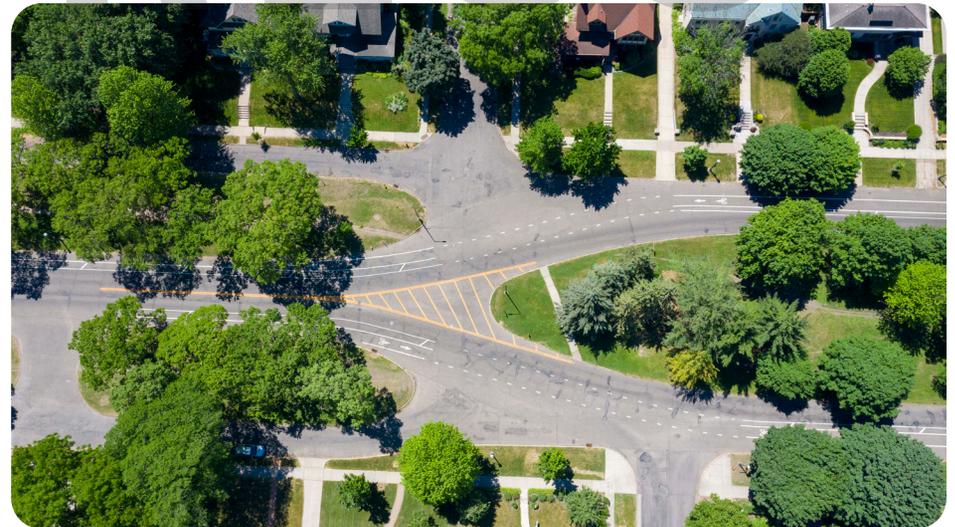
Summit Ave and Fairview Ave



Summit Ave and Fry St/Macalaster St

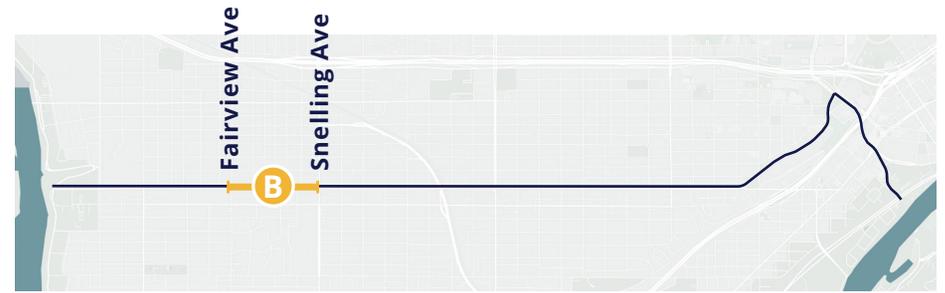


Summit Ave and Snelling Ave



Summit Ave and Wheeler St

Existing Conditions by Segment



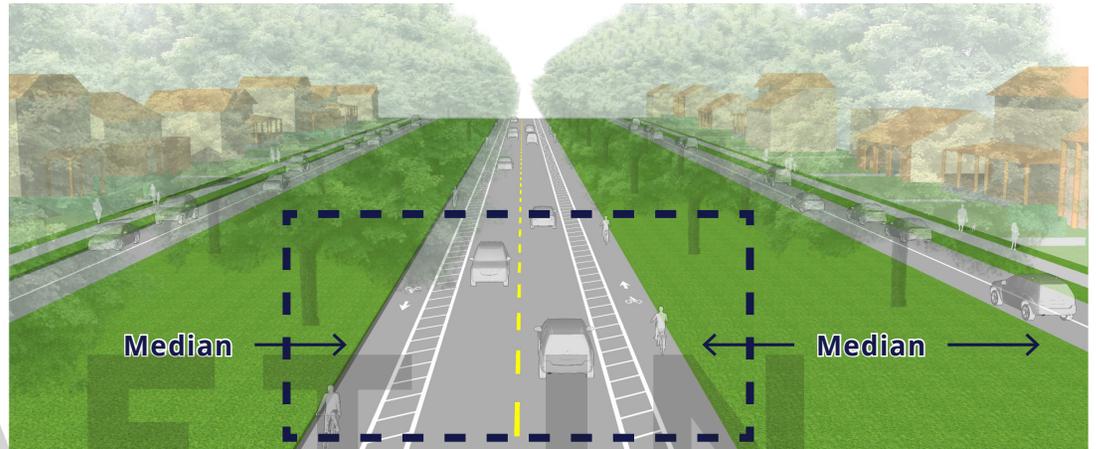
Segment B



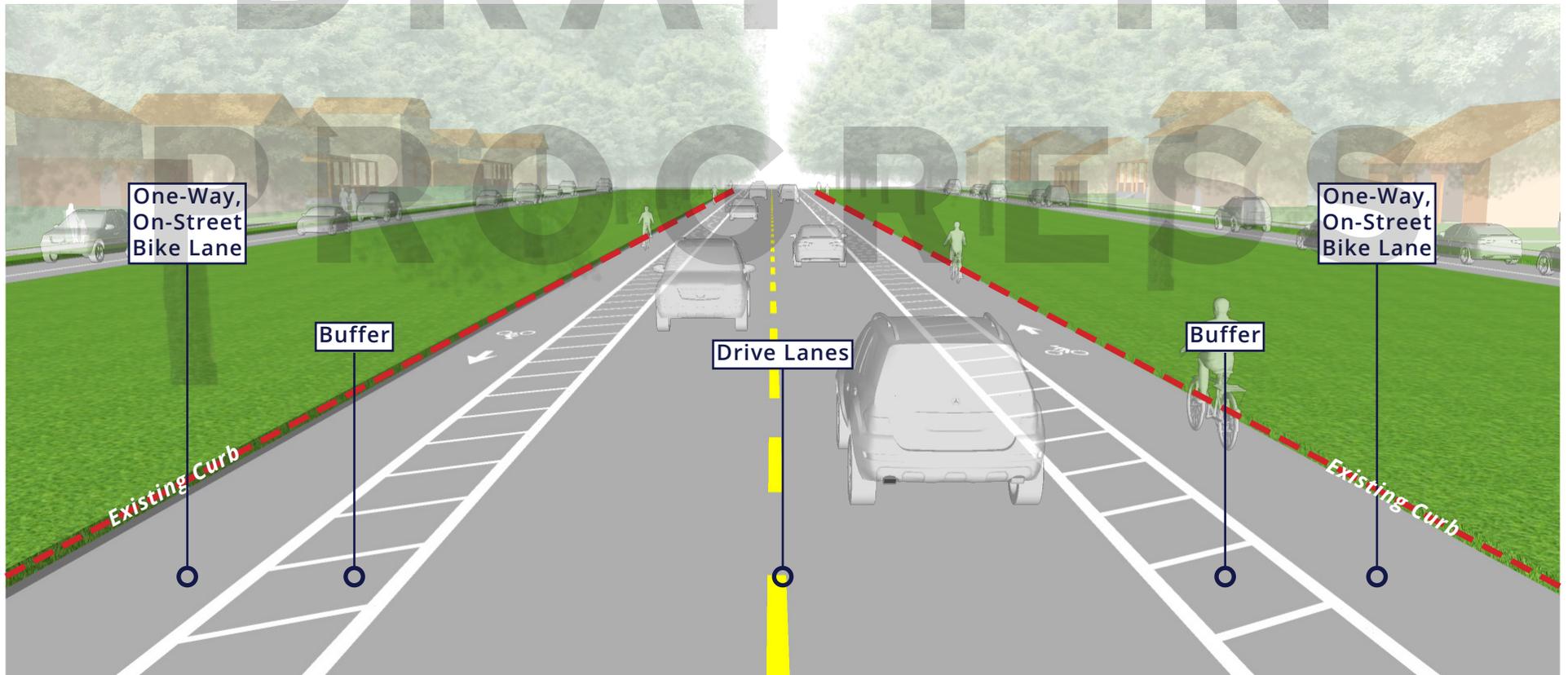
PROGRESS

Existing Conditions by Segment

Public Right-of-Way Corridor | Facing West



Center Two-Way Roadway



Existing Conditions by Segment

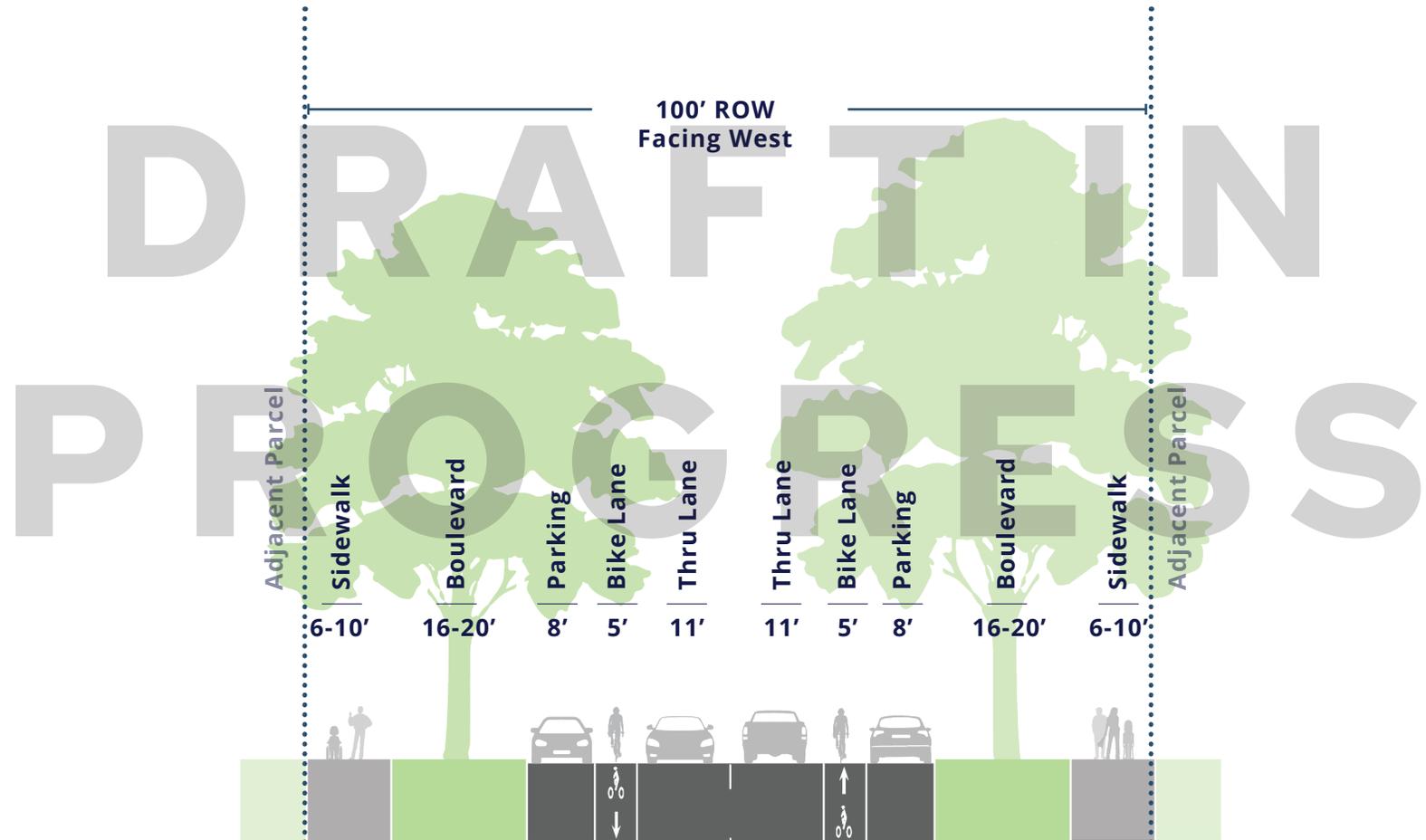


Fig. 3-20 | Typical cross-section through Summit Ave in Segments D, E, and F

Existing Conditions by Segment



Summit Ave and Lexington Pkwy



Summit Ave and Dale St

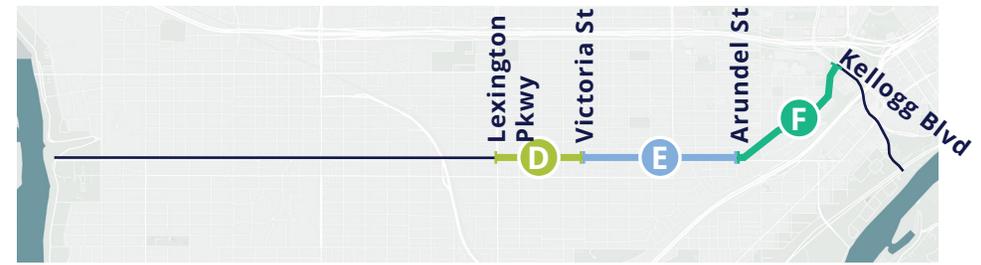


Summit Ave and Marshall Ave



Summit Ave and Selby Ave

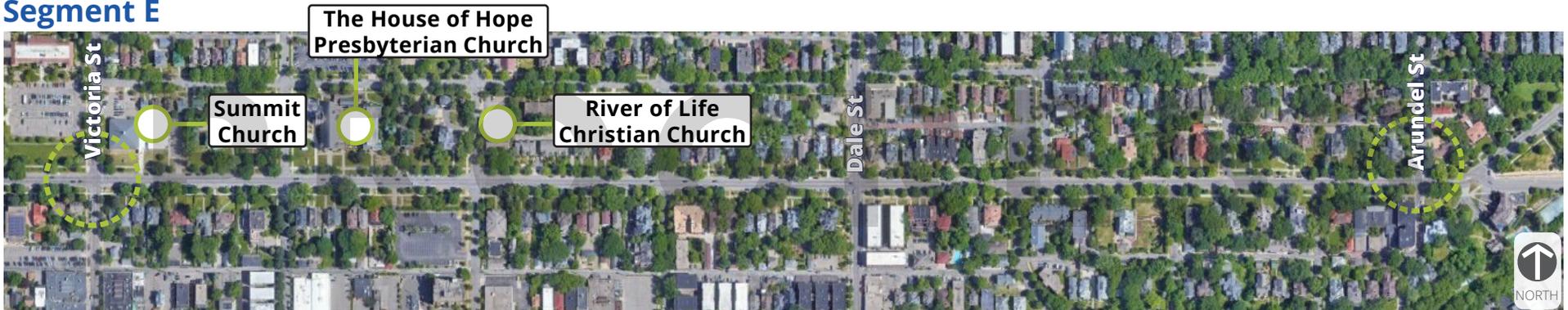
Existing Conditions by Segment



Segment D



Segment E

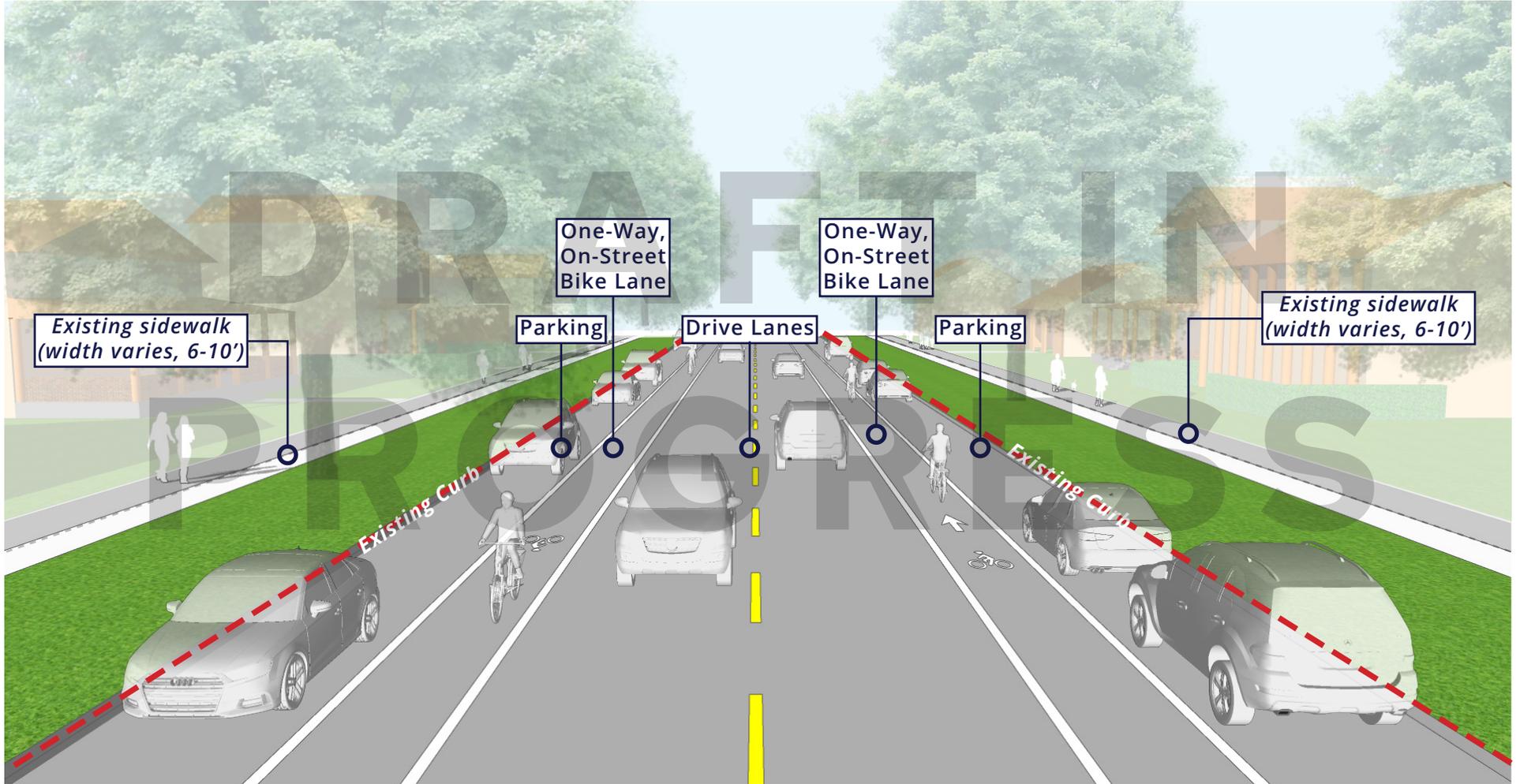


Segment F



Existing Conditions by Segment

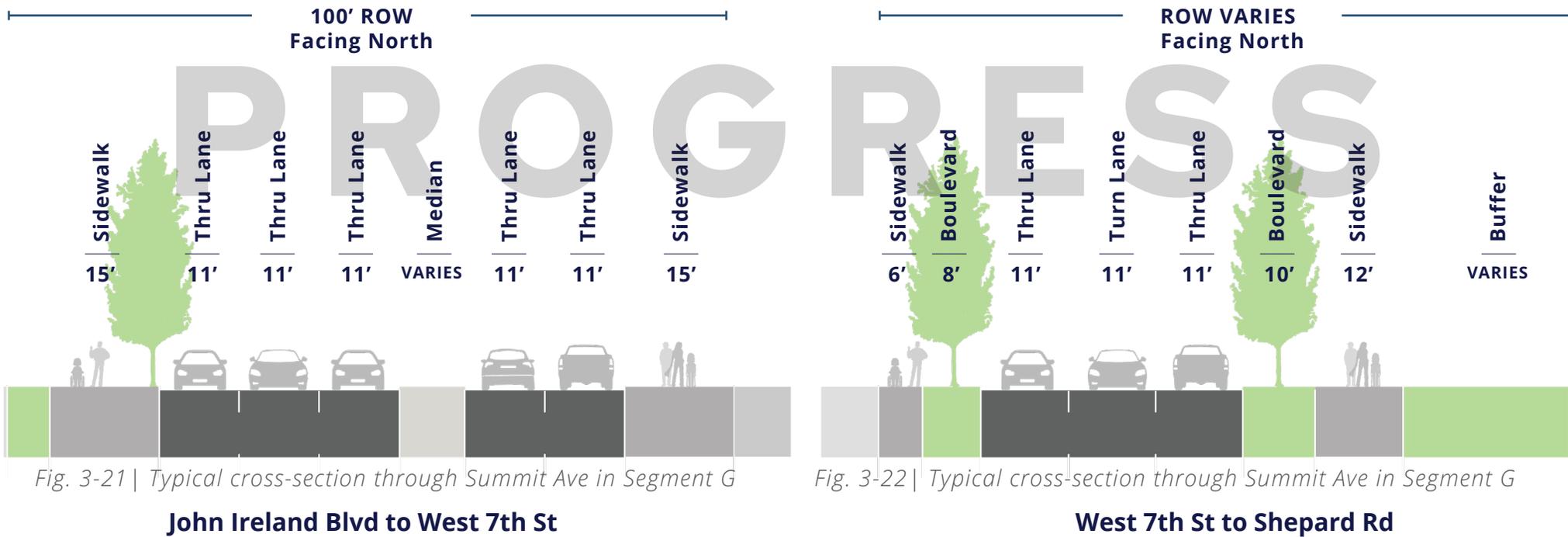
Public Right-of-Way Corridor | Facing West



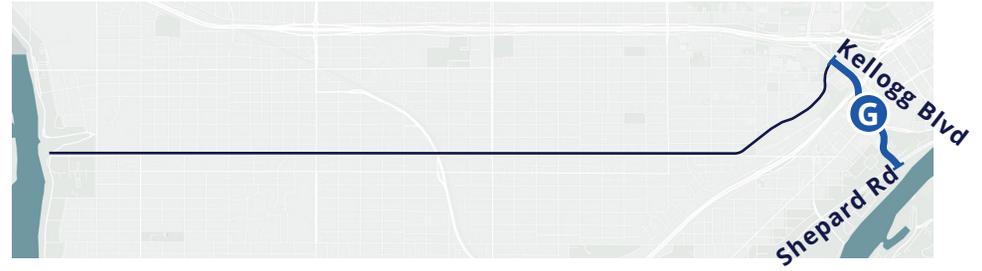
Existing Conditions by Segment



DRAFT IN



Existing Conditions by Segment



Kellogg Blvd and 7th St W



Eagle Pkwy and Shepard Rd



Kellogg Blvd and Chestnut St



Kellogg Blvd and Mulberry St



Master Plan

Plan Approach

The master plan is focused on developing a corridor-wide approach for a Regional Trail facility along Summit Avenue between Mississippi River Boulevard and the Samuel H. Morgan Regional Trail.

This chapter examines the corridor at a variety of scales to inform a trail concept that achieves the goals set out in earlier chapters, and encapsulates the project vision. As in earlier chapters, the corridor is

divided into segments (shown below). The development concept looks at each segment to make a recommendation specifically for the unique conditions along Summit Avenue. As a corridor-wide facility, the consistency between segments is also a critical part of the master plan. This chapter explores the corridor-wide, segment-specific, and one-block scales to provide a holistic view of the corridor.

This chapter also addresses the critical components of a regional trail facility including accessibility, wayfinding, natural resources, and others.

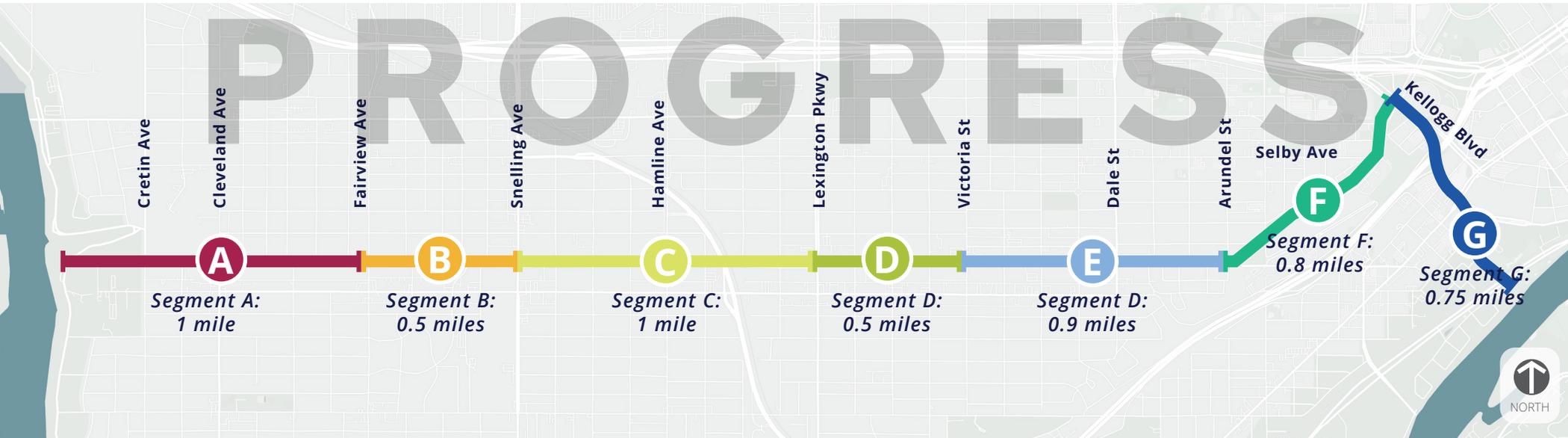


Fig. 4-1 | Corridor Segment Lengths

Project Vision

Initial Visioning

The vision for the proposed Summit Avenue Regional Trail is a combination of community feedback, technical advisory input, and the broader goals of the Metropolitan Council goals for regional amenities.

Themes from these groups focused on preservation of the corridor's historical context and greenspace, improved safety for all users, and connectivity to other regional amenities.

The City of Saint Paul Comprehensive Plan also identifies a city-wide Vision and Core City Values that set a framework for welcoming and equitable spaces within the City.

The project vision encapsulates the entire corridor, with more specific goals and recommendations for each segment, block, and connection along the regional trail facility. This vision will serve as a guide to future design and implementation of the regional trail along the Summit Avenue corridor, and will help create a cohesive facility that reflects the values of the community and the region.



Project Vision:

The Summit Avenue Regional Trail offers a high-quality recreational experience celebrating the past and present along with the natural and built environments. The trail provides regional and local connections serving a broad range of users.

Project Vision

Guiding Principles

 **Improve connectivity and public access to open space**

 **Create a safe and equitable recreation experience for all users**

 **Balance historic quality of corridor while modernizing infrastructure**

 **Preserve greenspace and tree canopy**

 **Anticipate evolving needs of users to create a more resilient, people-oriented corridor**

Objectives and Strategies

- Protect mature canopy trees; limit impacts to greenspace
- Utilize design strategies to improve safety and comfort including intersection improvements, trail maintenance, and safer roadway design
- Serve all ages and abilities with trail design
- Identify a trail facility design and alignment that is compatible with historic context
- Align trail improvements with available funding opportunities and coordinate capital improvement projects
- Prioritize pedestrians, cyclists, and transit riders through design interventions
- Identify existing greenspaces along trail facility corridor that can serve as nodes for users of the regional trail
- Use signage for wayfinding, historic and cultural interpretation, and education
- Identify opportunities to include native plants and continue to provide a diversity of plant species

Development Concept

Regional Trails:

- Corridors provide recreational opportunities along linear pathways in the metropolitan area
- “Linking Trails” pass through or provide connections among components of the Regional Parks System, local, state, federal recreational facilities, or significant natural resource areas.
- Selected for their ability to intersect with local trail networks, in urban areas many serve as commuting routes for bicyclists in addition to service recreational purposes
- Connects to multiple public interest destinations such as schools, job center, tourist destinations, historical cultural, architectural building sites, and commercial districts.

Why a Separated Trail Facility?

A separated bike trail is separated from vehicular traffic by a physical barrier. This barrier can include a curb, bollards, vegetation, or other physical features. The proposed means of separations along the Summit Avenue corridor is a standard 6” curb. Several factors described below explain the need for a separated trail facility along Summit Avenue.

- **Traffic Volume** | Summit Avenue carries enough vehicle traffic volume to which industry best practices recommend separated facilities (*see table below*).
- **Industry Standards and Recommendations** | National and state guidance recommends spaces to bike that are separated from car traffic (FHWA, MnDOT, NACTO)

Industry Best-Practices, Recommended Facility

This table outlines current best practices for bicycle facilities based on traffic volumes. Based on the existing annual average daily traffic counts on Summit Ave, the majority of the corridor falls into the >6,500 vehicles per day category. The segment from Ramsey St to John Ireland Blvd is 3,900 vehicles per day.

Roadway Traffic Volume (vehicles per day)	Posted Roadway Speed	Recommended Facility Type		
		FHWA Bikeway Selection Guide	MnDOT Bicycle Facility Design Manual	NACTO Designing for All Ages and Abilities
< 3,000	25-30 mph	Shared Roadway or Bike Boulevard	Shared Roadway or Bike Boulevard	Bike Boulevard (<25 mph)
3,000-6,500	25-30 mph	Bike Lane (buffer preferred)	Bike Lane (buffer preferred)	Bike Lane (<6,000 AADT and <25 mph)
>6,500	25-30 mph	Separated Bike Lane or Sidepath	Separated Bike Lane or Sidepath	Separated Bike Lane or Sidepath

Fig. 4-2 | Recommended Facility Types



*Two-way Separated Bicycle Facility Example:
Capital City Bikeway, downtown Saint Paul*

Development Concept

Concept Evaluation:

Regional Trail Objectives

- Trail designs will seek solutions that balance a variety of trail objectives
- Minimize transition between facility types
- User-friendly, alignment that is familiar to drivers, cyclists, and pedestrians
- Minimize changes to existing geometry
- Minimal implementation costs
- Minimal maintenance

Preferred Concept

Corridor-Wide One-Way Bike Facility

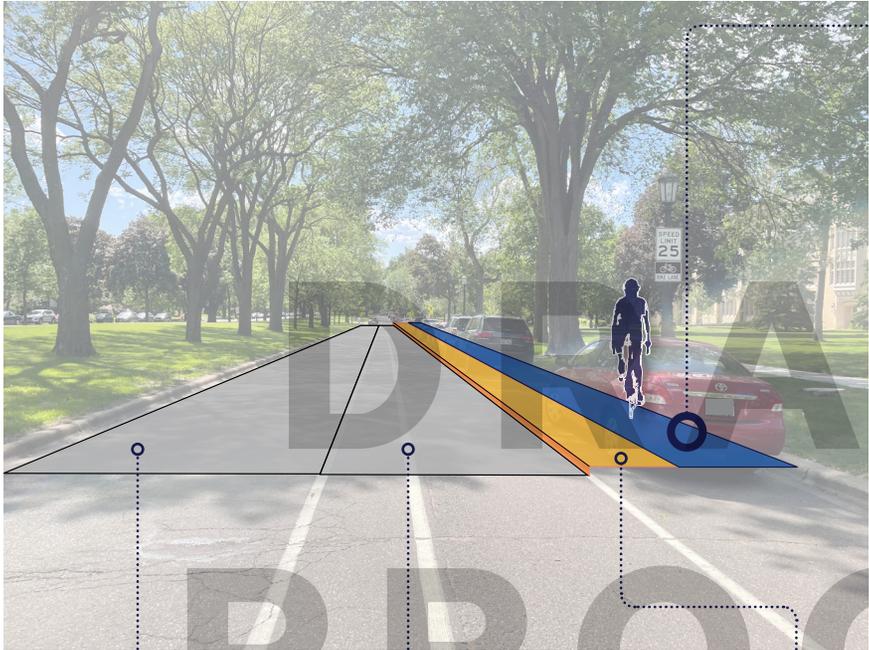
- Easier approach to phasing and implementation
- No transition between one-way and two-way facility types
- One-way trails are familiar and easy to navigate for cyclists and drivers
- Potential for greater impacts to parking and greenspace due to recommended facility widths.

Alternate Concept

Two-Way to One-Way Trail Transition at Lexington Parkway

- One-way facilities are familiar to trail users; potential conflicts between cyclists and drivers with a contraflow design
- Responds to context of each segment

Components of the Transportation Envelope



Drive Lane

Parking Lane

Buffer

Specificity regarding elements within the roadway will be determined by Public Works during the project design phase.



- Familiar to drivers and current users of the Summit Avenue bike lanes
- Easier to maintain consistent facility through project implementation
- Predictable movement between modes at intersections and transition points

- Easier and less costly to maintain
- Smaller overall facility - easier to implement in existing roadway with limited impact
- Align with City and other policy recommendations



Note: all facility dimensions to be verified at the time of design and implementation

Development Concept

Preferred Concept

One-Way Trail Facility, Corridor-Wide

Concept A seeks to provide a consistent and familiar facility type throughout the proposed trail corridor. This approach provides a one-way bike trail on both the north and south side of Summit Avenue from Mississippi River Blvd to Kellogg Blvd.

Legend

-  Proposed Bike Facility - Two One-Way Facilities
-  Proposed Bike Facility - One Two-Way Facility
-  Facility Type Transition

DRAFT IN

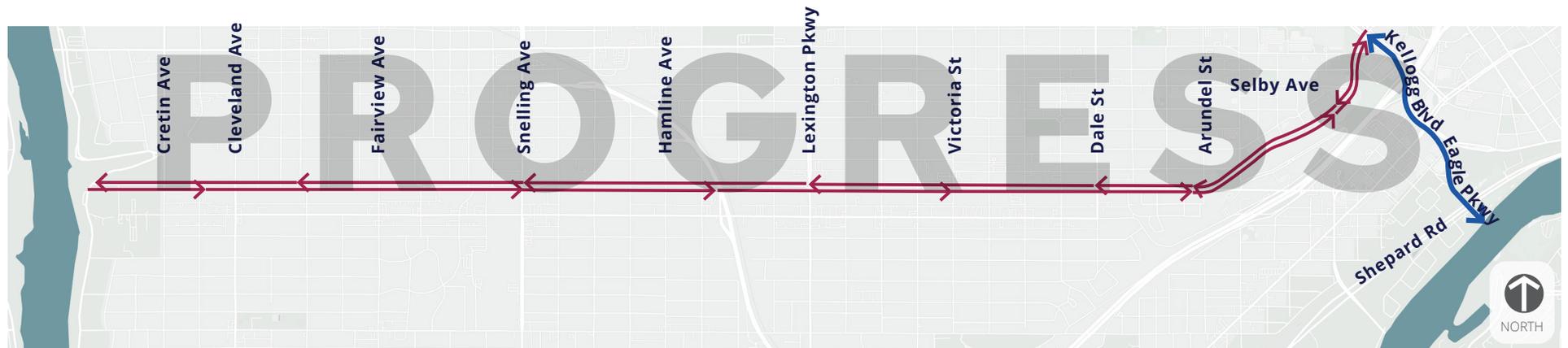


Fig. 4-3 | Preferred Development Concept

Development Concept

Alternate Concept

Two-Way Trail: Mississippi River Blvd to Lexington Pkwy, One-Way Trail Lexington Pkwy to Kellogg Blvd

Concept B uses both one-way and two-way trail facility types while balancing site context, greenspace, and safety.

Legend

-  Proposed Bike Facility - Two One-Way Facilities
-  Proposed Bike Facility - One Two-Way Facility
-  Facility Type Transition

DRAFT IN

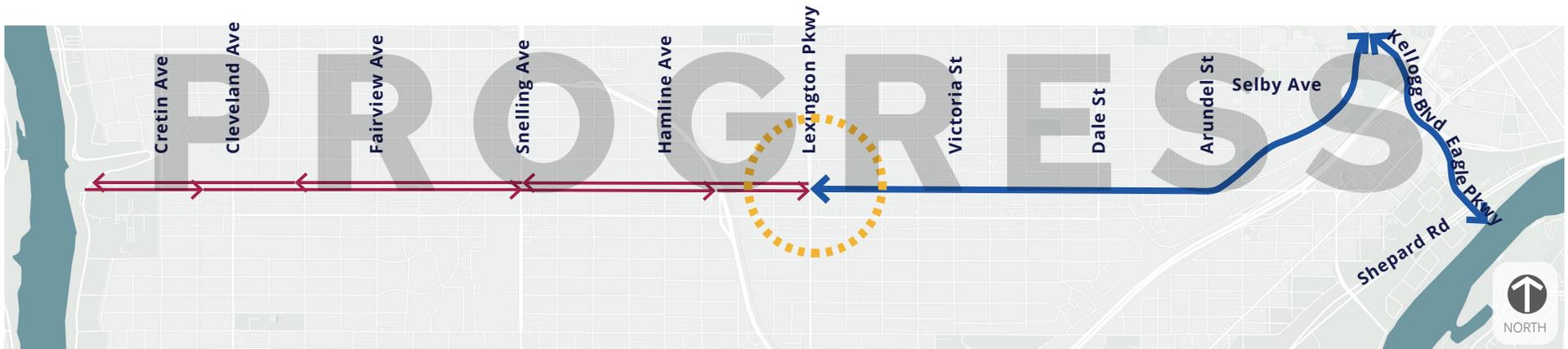


Fig. 4-4 | Alternate Development Concept

Design Considerations | Tree Vulnerability

Evaluation Tools

At the master plan level, the evaluation of the tree canopy along Summit Avenue focuses on the corridor-wide level rather than on individual trees within the corridor. This master plan seeks to provide evaluation tools to guide future design and implementation phases of the regional trail.

Data used in this master plan comes from City of Saint Paul GIS data, which includes the approximate location of all trees within the public right-of-way along Summit Avenue, along with the assumed critical and structural root zones of those trees.

CRZ

Critical Root Zone (CRZ)

Construction work done in this area should be done carefully. A tree preservation plan should be developed to guide construction in these areas.

$$1'' \text{ DBH (trunk diameter measured at breast height)} = 1' \text{ Critical Root Zone Radius (CRZ) from center of tree}$$

Example:

A tree with a 12" diameter trunk has a critical root zone that extends 12' from the center of the tree

SRZ

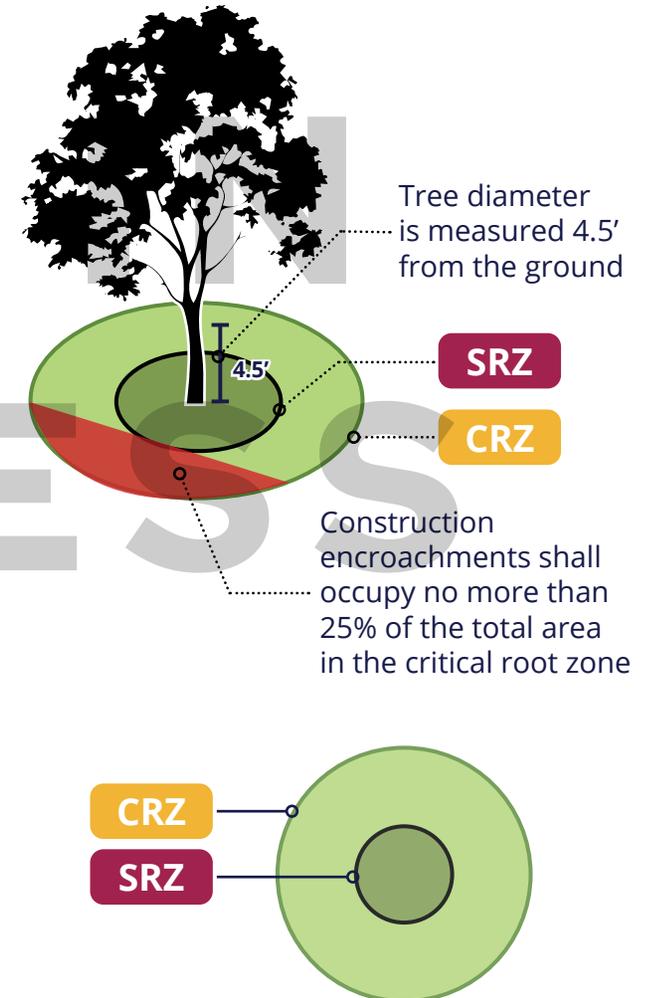
Structural Root Zone (SRZ)

Most of a tree's structural roots exist in this zone. Disturbance to the structural root zone of a tree increases a tree's risk of failure. Construction activities should be avoided within the SRZ.

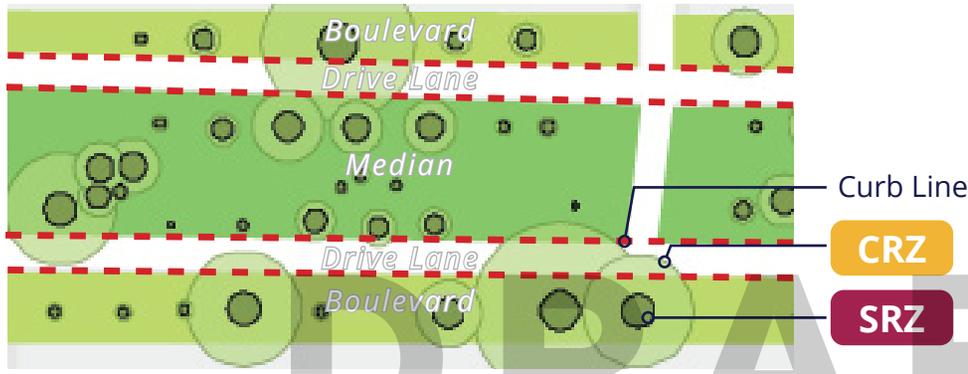
$$1'' \text{ DBH (trunk diameter measured at breast height)} \times .9 = 1' \text{ Structural Root Zone Diameter (CRZ) from center of tree}$$

Example:

A tree with a 12" diameter trunk has a structural root zone that forms a 10.8' diameter zone around the center of a tree, of a 5.4' from the center of a tree.



Design Considerations | Tree Vulnerability



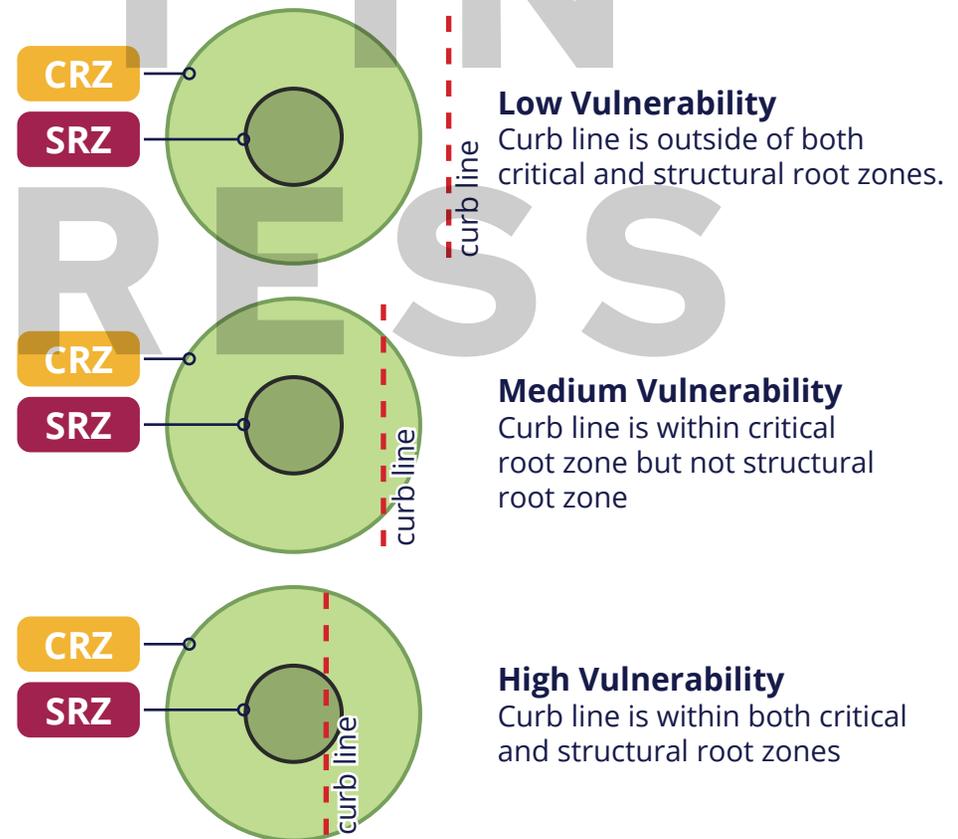
Evaluation Method

Using the available GIS data, the relationship between the curb line and SRZ and CRZ of the trees along Summit Avenue was compared. All trees were identified as either low, medium, or high vulnerability with vulnerability indicating the amount of risk to trees within each regional trail concept. Low vulnerability trees are those where the curb line is outside both the critical and structural root zones of a tree. Medium vulnerability trees are those in which the curb line is within the critical root zone of a tree, but not within the structural root zone. High vulnerability trees are those where the curb line is within both the critical and structural root zones.

Looking first at the existing conditions along Summit Avenue, it is expected that the critical and structural roots zone of many larger trees already existing under paved roadways and sidewalks. This indicates that these trees are already in non-ideal growing conditions and that any construction work in these areas could be harmful to trees. Considering many sections of the Summit Avenue roadway have not been reconstructed in over 90 years, maintenance and repairs of utilities and infrastructure that will be necessary to maintain a safe roadway could have an adverse affect on the tree canopy, regardless of the implementation of a trail facility.

Example Tree Inventory Diagram

Available GIS data was used to analyze the critical and structural root zones of the existing trees within the Summit Avenue corridor in relation to existing and proposed curb lines. The diagrams showing CRZ and SRZ for each segment of the Summit Avenue corridor can be found in Chapter 03.



Design Considerations | Tree Vulnerability

Evaluating Potential Impacts | Existing Condition

Existing Condition

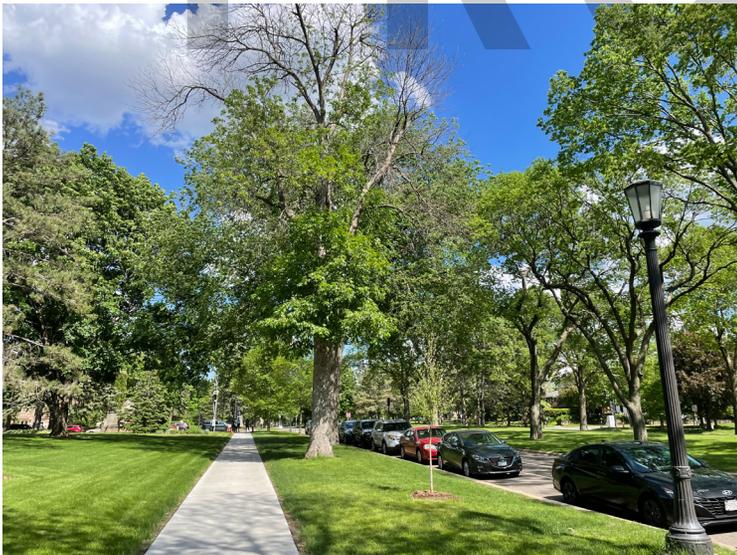
- 1,561 Tree Corridor-Wide
- 132 High Vulnerability Trees (8% of total)

Summit Ave

The existing condition compares the curbs in their existing location, with the CRZ and SRZ of existing trees. In this comparison it was found that 132 are categorized as “high vulnerability trees”, meaning that the existing curb lines intersect with both the critical and structural root zones of existing trees.

For the proposed trail concepts, the critical and structural root zones were compared with the proposed curb lines for each concept. In some segments, for some concepts, there is no change in the curb line, meaning that the number of vulnerable trees stays the same as existing. In concepts

where curb lines are moving, trees were re-evaluated to determine the amount of potential risk to each tree.



Design Considerations | Tree Vulnerability

Evaluating Potential Impacts | Proposed Trail Concepts

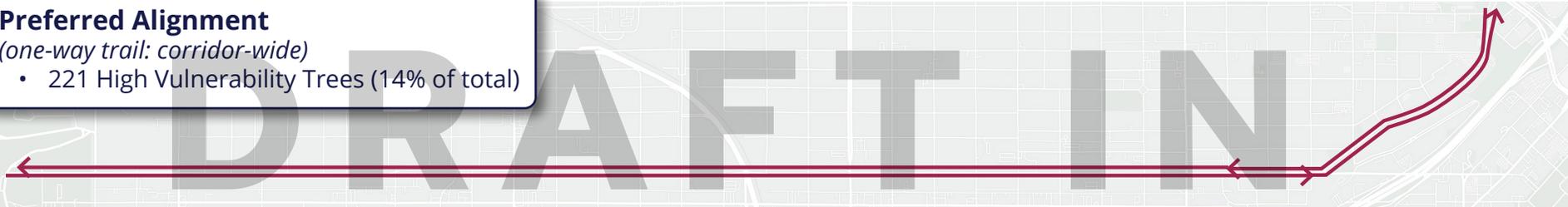
Legend

-  One-Way Trail Facilities
-  Two-Way Trail Facility
-  Facility Type Transition

Preferred Alignment

(one-way trail: corridor-wide)

- 221 High Vulnerability Trees (14% of total)



Alternate Alignment

(transition at Lexington Pkwy)

- 221 High Vulnerability Trees (14% of total)



Development Concept

Segments A and C | Existing Conditions

Location Map



Development Concept

Segments A and C | Existing Conditions

Existing Condition | Typical Block

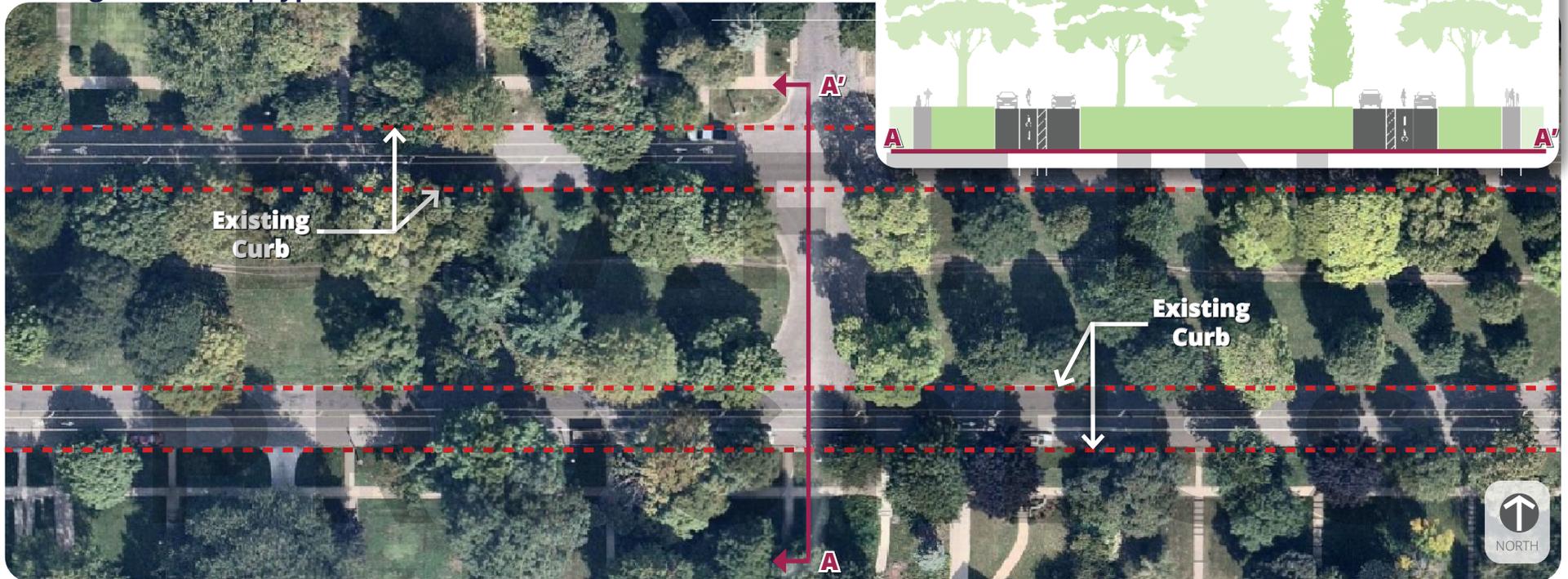


Fig. 4-5 | Segments A and C - Existing Condition - Typical Block

Segment Characteristics

Segment A of the Summit Avenue trail corridor begins at the intersection of Summit Avenue and Mississippi River Blvd, an important connection point to other regional amenities along the Mississippi River. This segment of the trail facility also intersects with the MRCCA designated area.

Segment A is characterized by a wide, green median with mature tree canopy shading the parkway. This section of the corridor is predominantly residential but is also home to the University of St. Thomas. The existing bike lanes in this segment are separated from vehicular traffic by a striped buffer,

and located between the drive lane and parking lane. On-street parking in this section is less than 30% utilized at the times studied for this report, as well as the 2019 study.

Development Concept

Segments A and C | Proposed Concept

Proposed Trail Facility | Typical Block

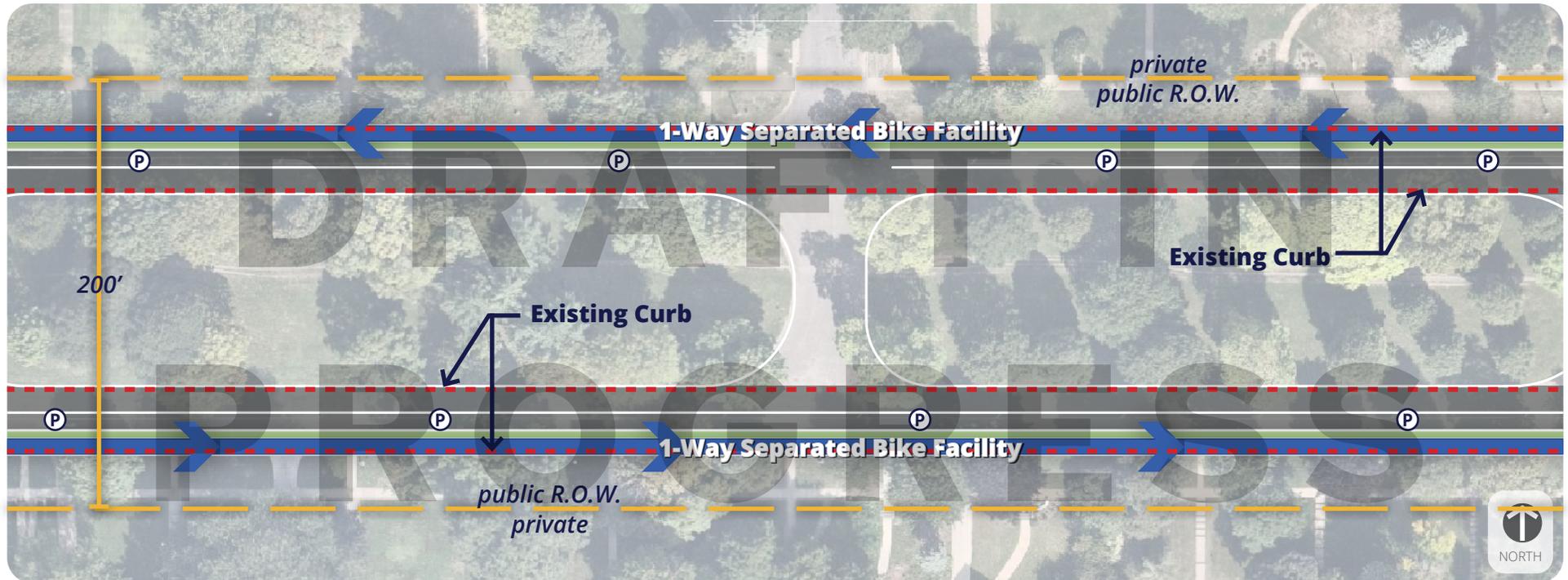


Fig. 4-6 | Segments A and C - Proposed Concept - Typical Block

The typical alignment of the bike facility in Segment A proposes two one-way bike facilities, one on the north side of Summit Avenue, and one on the south side. Parking is proposed to remain on both sides of the street, and both the eastbound and westbound drive lanes are to remain. The trail facility will be separated from the drive lanes by a curb as well as a buffer zone

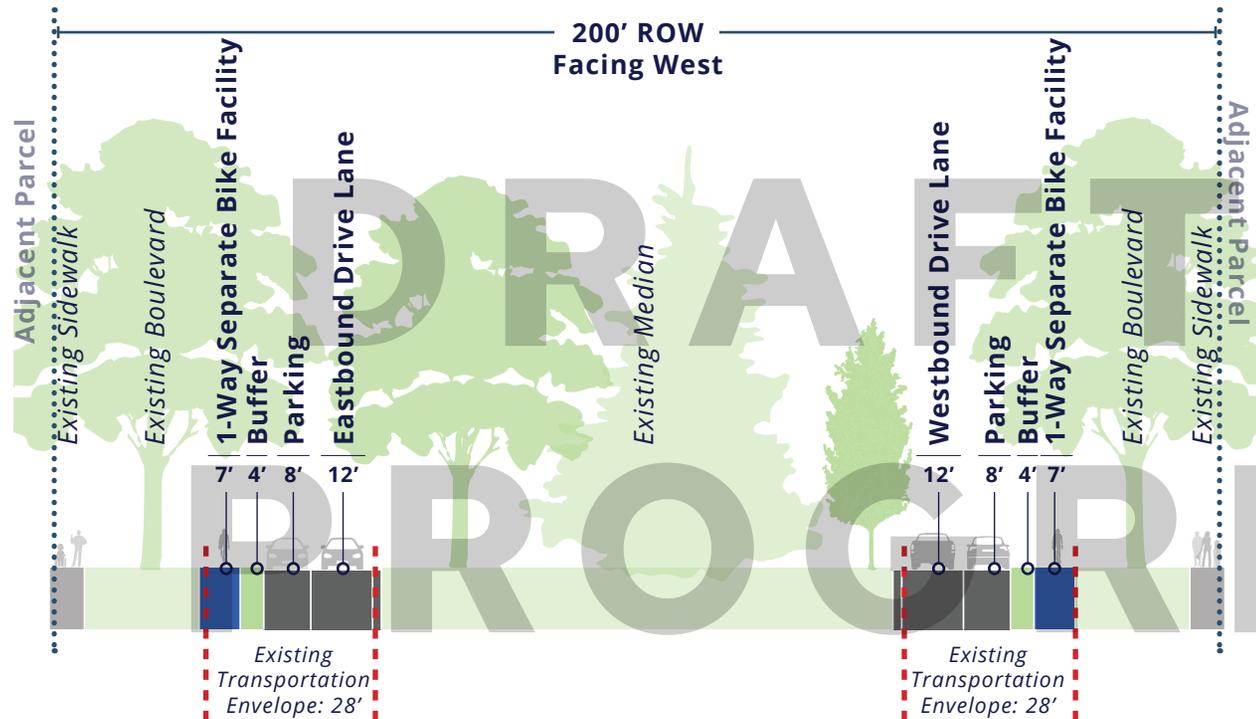
both for safety, and for maintenance and snow removal. To accommodate a safe bike facility, as well as vehicle traffic and parking, this alignment does have the potential to impact existing boulevard space. Careful planning with historic (SHPO 106 review) and greenspace review will occur during the design phase of this segment, and will guide the development of the trail.

Legend

- - - Existing Curb
- ↔ One-Way Bicycle Facility
- - - Public/Private Delineation
- Roadway
- Buffer
- P On-Street Parking

Development Concept

Segments A and C | Proposed Concept



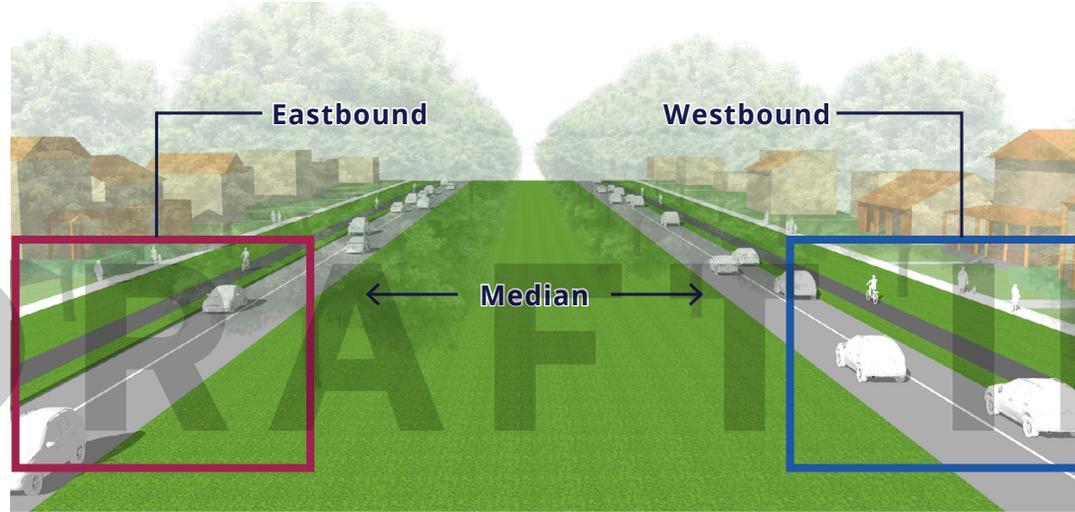
Segment Recommendations

Design Approach:

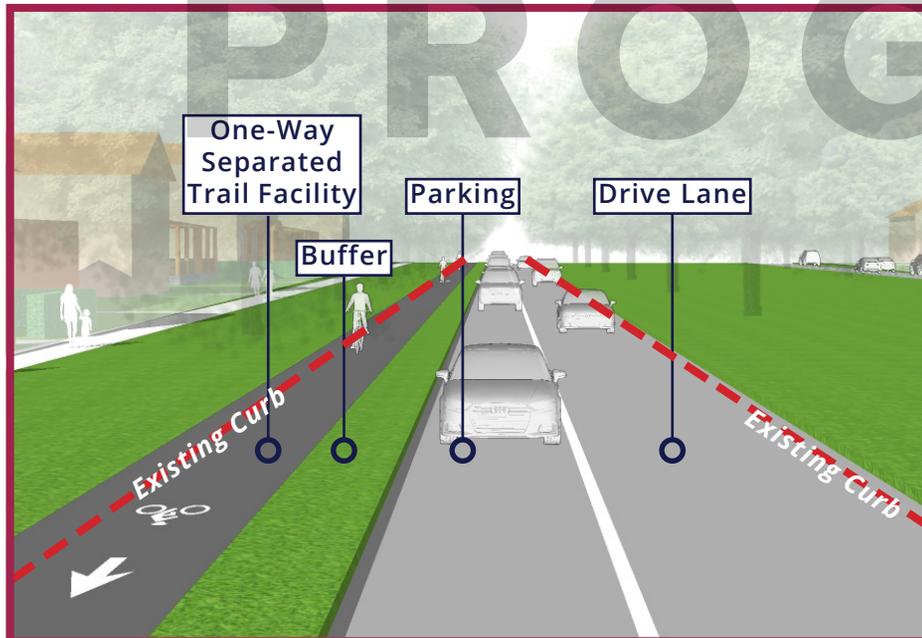
- Implement 1-way separated bicycle facilities on both the north and south sides of Summit Avenue
- Provide buffer between bicycle facilities and vehicular routes
- Maintain parking on both the north and south sides of Summit Avenue
- Maintain eastbound and westbound traffic lanes on either side of central median
- See page 150 of this document for trail recommendations at driveways

Development Concept

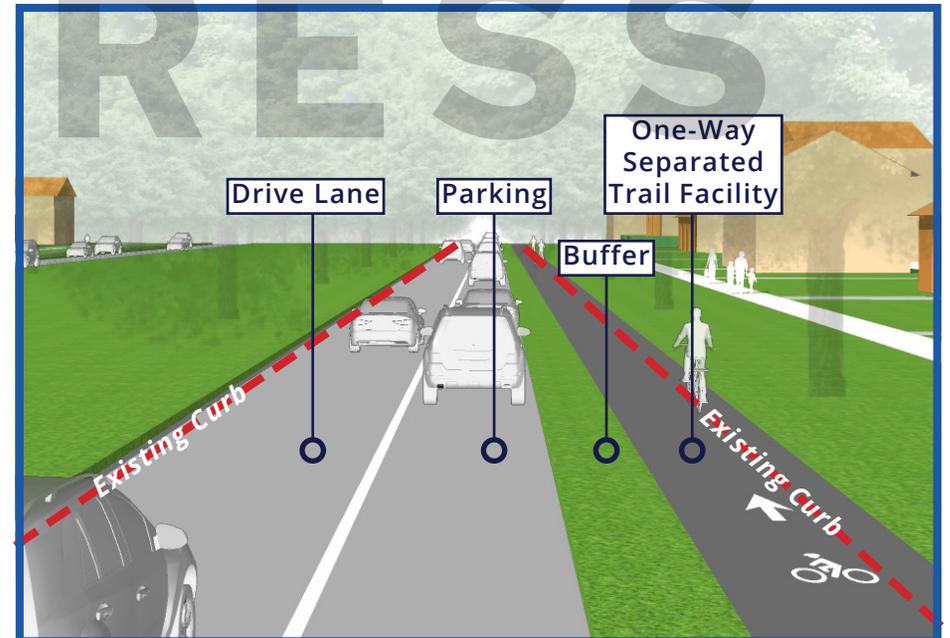
Public Right-of-Way Corridor - Facing West



Roadway on south side of Summit Ave - Eastbound



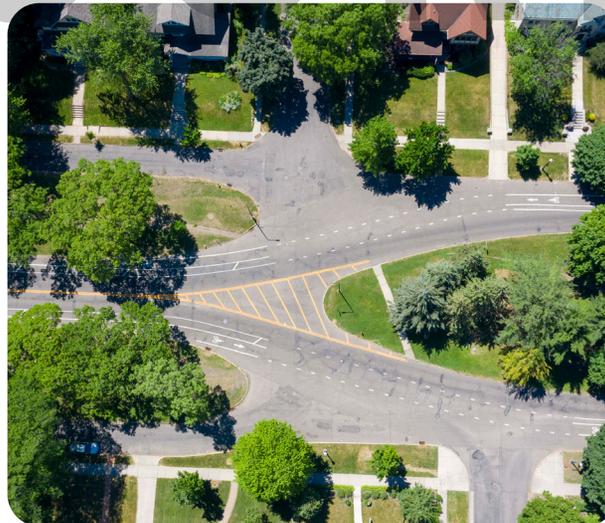
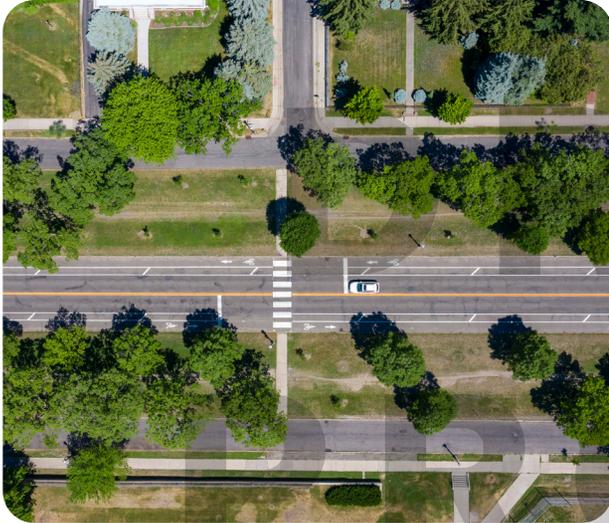
Roadway on north side of Summit Ave - Westbound



Development Concept

Segment B | Existing Conditions

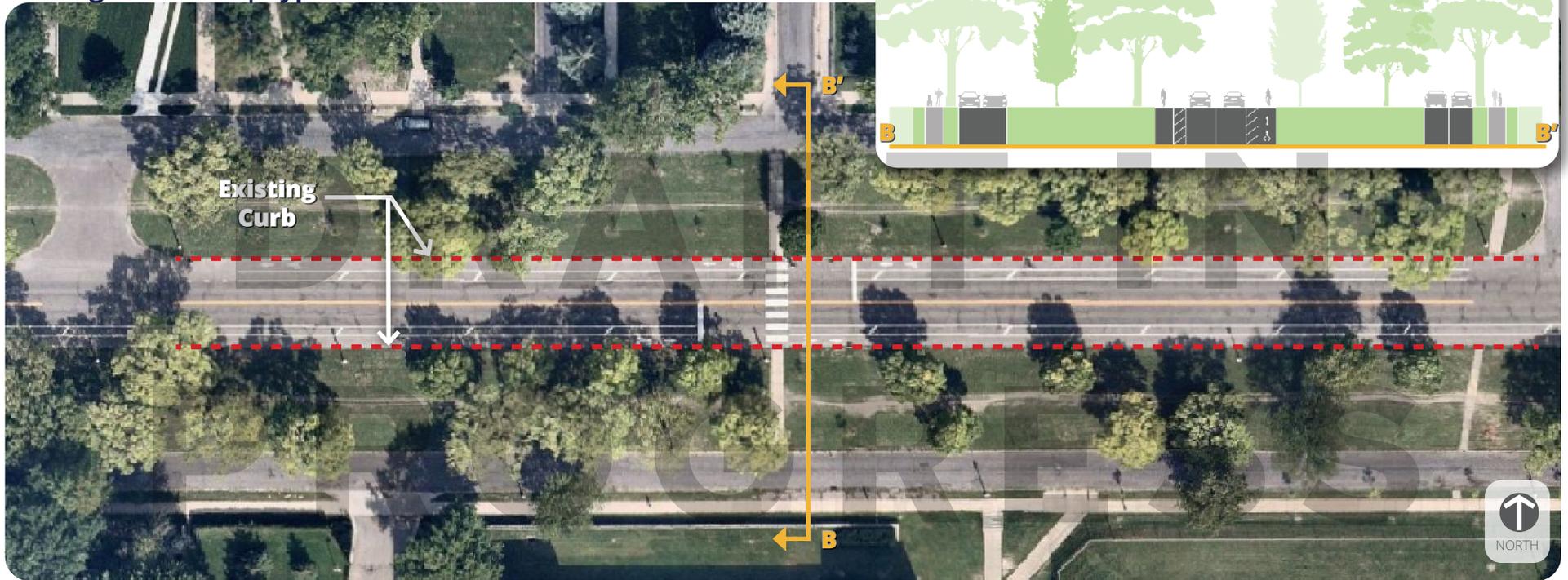
Location Map



Development Concept

Segment B | Existing Conditions

Existing Condition | Typical Block



Existing Condition | Typical Section

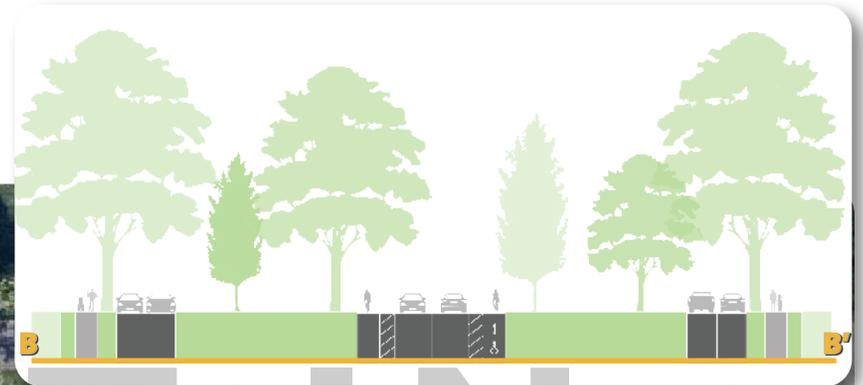


Fig. 4-7 | Segment B - Existing Condition - Typical Block

Segment Characteristics

Segment B is the most unique within the corridor in terms of the median and roadway conditions. The central roadway is the main thoroughfare for both vehicles and bicycles, with the north and south one-way roads primarily serving the local residences and institutions. Like other

segments, the medians provide a park-like amenity with the expansive greenspace and mature overhead canopy. Both Macalaster College and Ramsey Middle School are within segment B. Consideration of these student populations and the logistical needs of these institutions will

be important. Community members have voiced concerns about the safety at these intersections, particularly at the intersection of Summit Avenue and Snelling Avenue, where a number of bicycle related crashes have occurred.

Development Concept

Segment B | Proposed Concept

Proposed Trail Facility | Typical Block

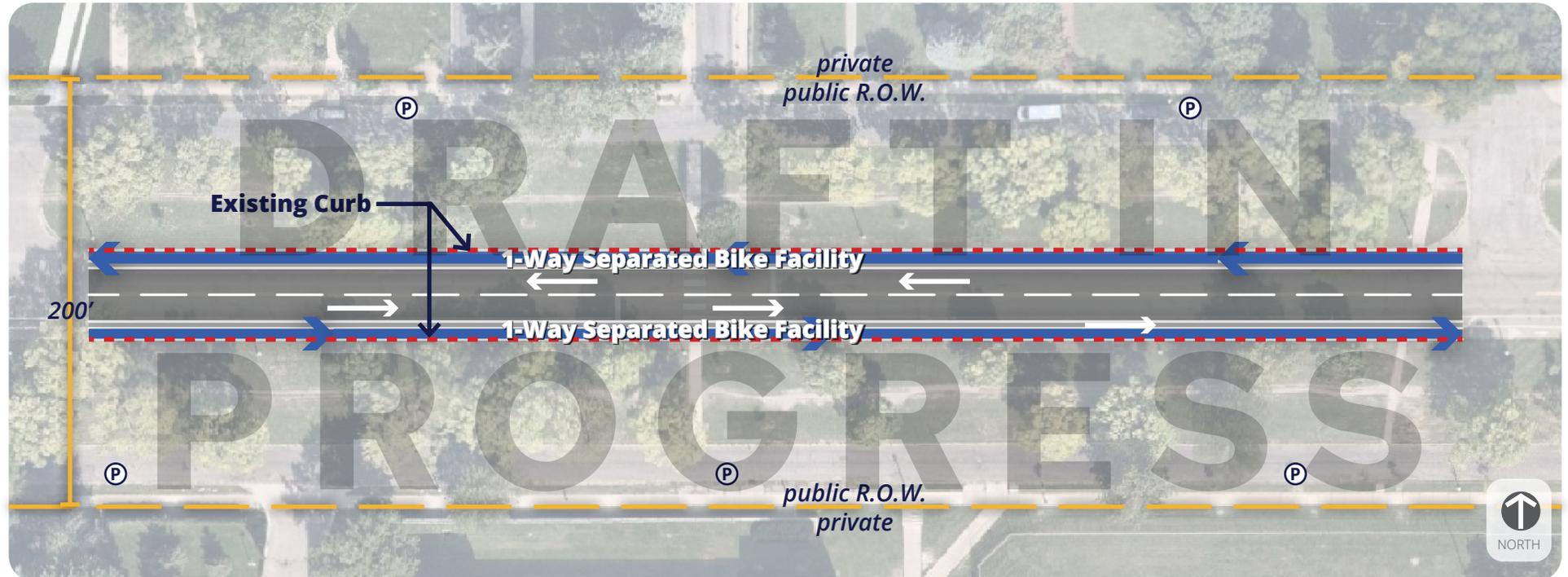


Fig. 4-8 | Segment B - Proposed Concept - Typical Block

The typical alignment of the bike facility in Segment B proposes one two-way bike facility on the north side of Summit Avenue. The north and south frontage roads will not be impacted by the proposed trail facility; parking is to remain throughout this segment. The trail facility will be separated from the drive lanes by a curb as well as a buffer zone both for safety,

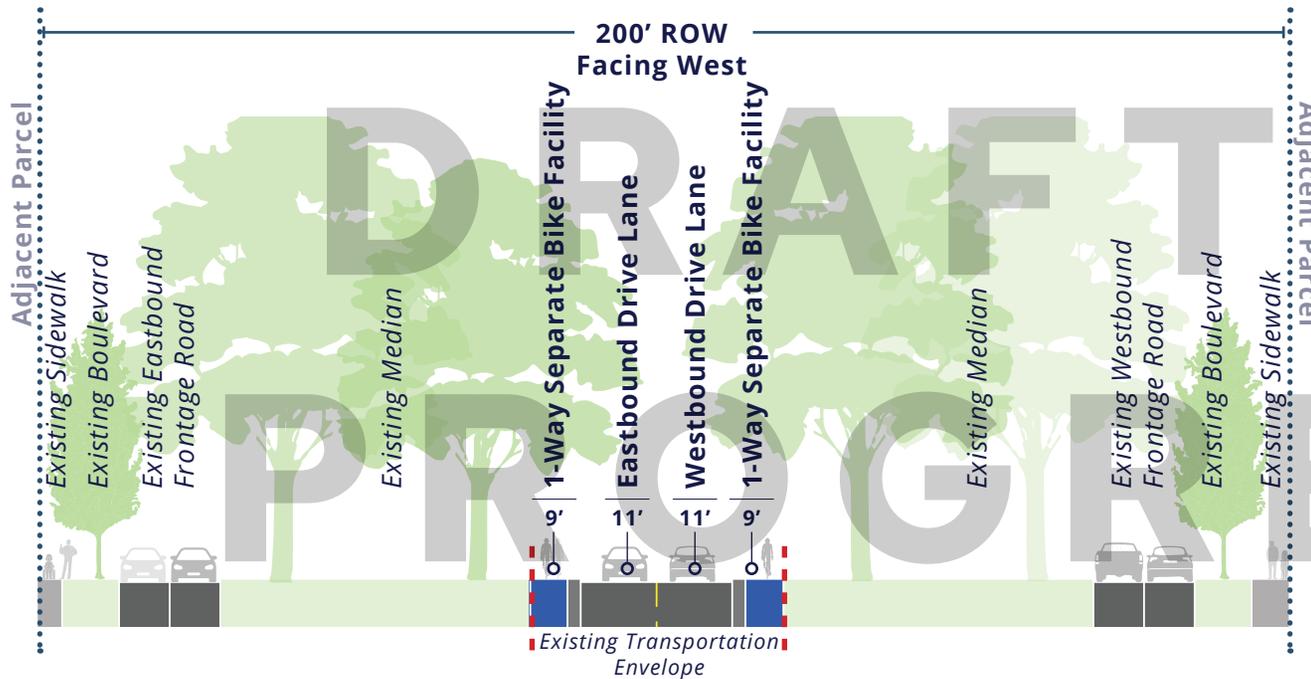
and for maintenance and snow removal. The proposed trail alignment would not impact the area outside the existing curb and would maintain the greenspace within this segment. All improvements for the trail facility would occur within the existing roadway.

Legend

- - - Existing Curb
- ↔ One-Way Bicycle Facility
- — Public/Private Delineation
- Roadway
- Buffer
- P On-Street Parking

Development Concept

Segment B | Proposed Concept



Segment Recommendations

Design Approach:

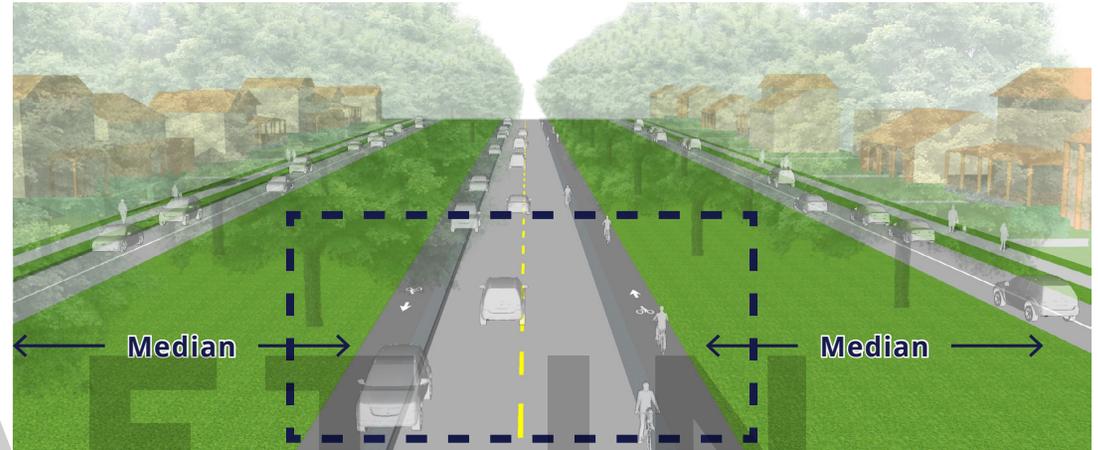
- Implement two, one-way separated bicycle facilities on the north and south sides of the central drive lane on Summit Avenue
- To avoid impacts beyond the curb line, the paved treadway will be a 9' width which includes a 6' trail with a 3' paved maintenance buffer
- Maintain parking and one-way traffic on frontage roads
- Maintain eastbound and westbound traffic lanes in central roadway

* Proposed trail facility in segment B does not impact existing frontage roads; driveways will remain in their current condition.

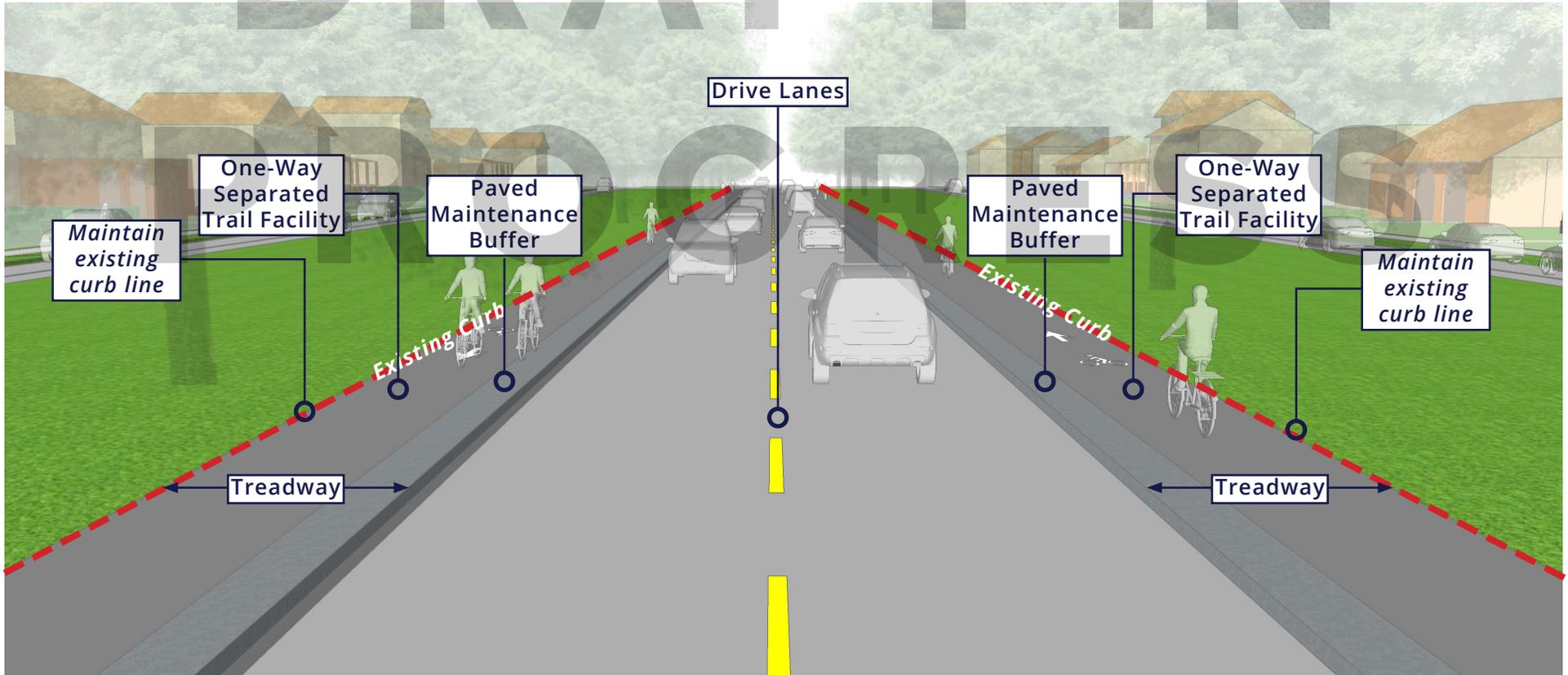
Development Concept

Segment B | Proposed Concept

Public Right-of-Way Corridor | Facing West

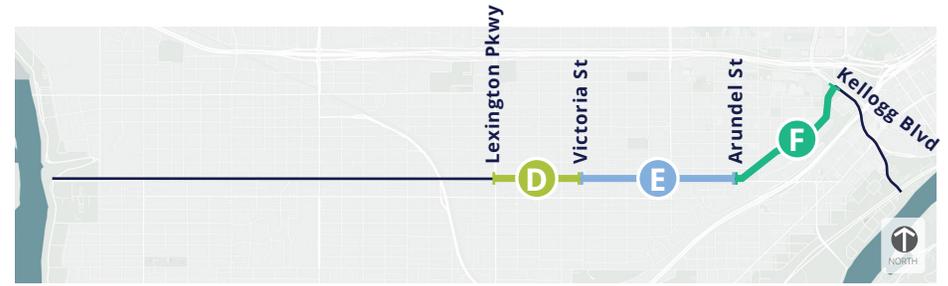


Center Two-Way Roadway



Development Concept

Segments D, E, and F | Existing Conditions



Development Concept

Segments D, E, and F | Existing Conditions

Existing Condition | Typical Block

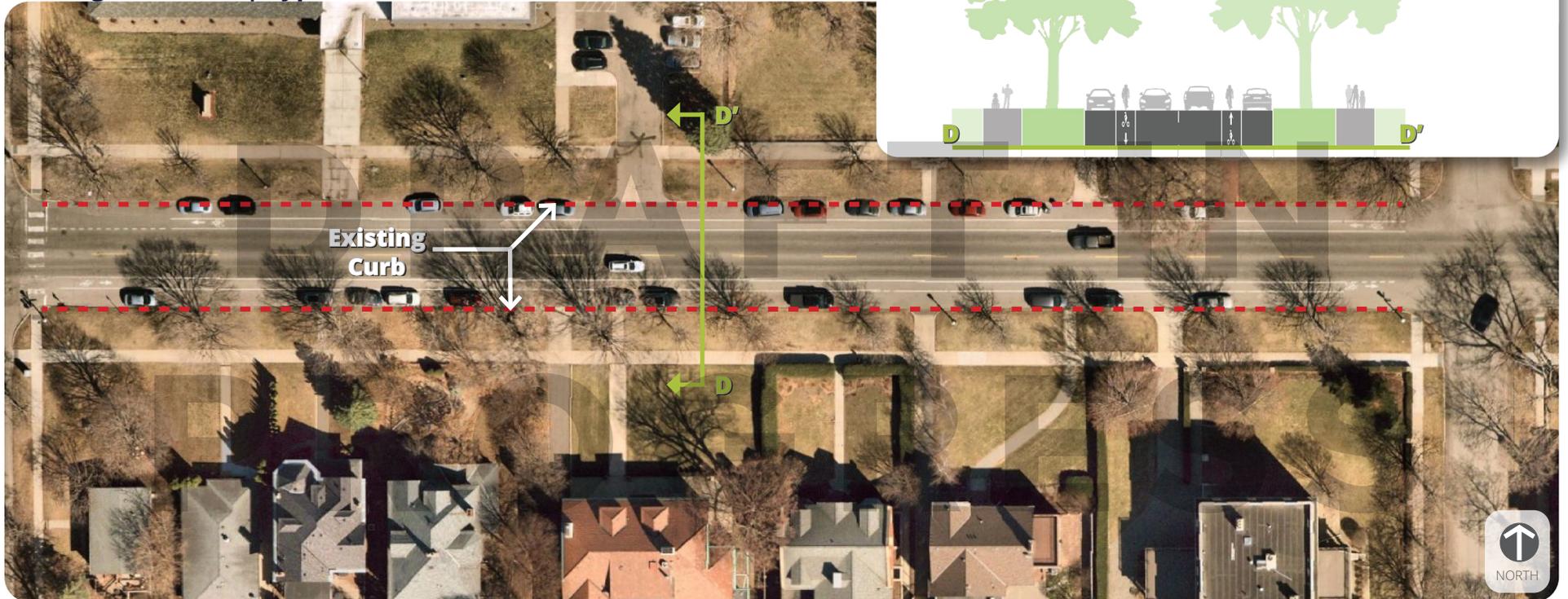


Fig. 4-9 | Segment D, E, F - Existing Condition - Typical Block

Segment Characteristics

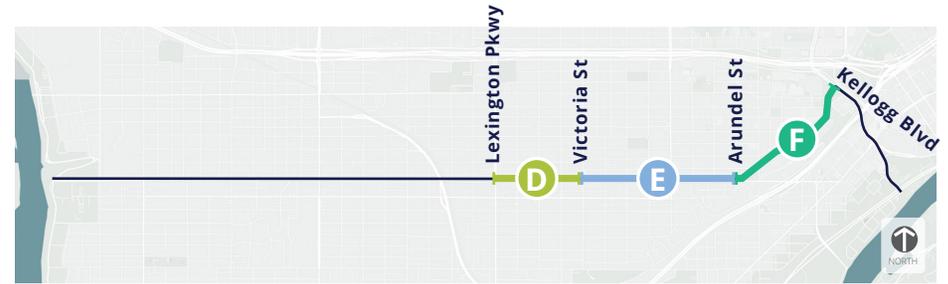
Segments D, E, and F serve as the transition point between the park-like western end of the segment, and the more urban eastern end of the corridor in downtown. The right-of-way in these segments is narrower than segments A, B, and C at 100' instead of 200', but is still wider than the typical

Saint Paul streets. This allows for generous green boulevards and a dense tree canopy, and in some areas, 10' pedestrian sidewalks. Several historic properties and a number of public parks are within this segment, providing an opportunity for the regional trail to connect users to historic

and cultural landmarks along Summit Avenue. Segment D will be the first to be implemented, so a cohesive strategy beginning in these segments is critical to the planning process for the entire regional trail corridor.

Development Concept

Segments D, E, and F | Proposed Concept



Preferred Trail Facility | Typical Block

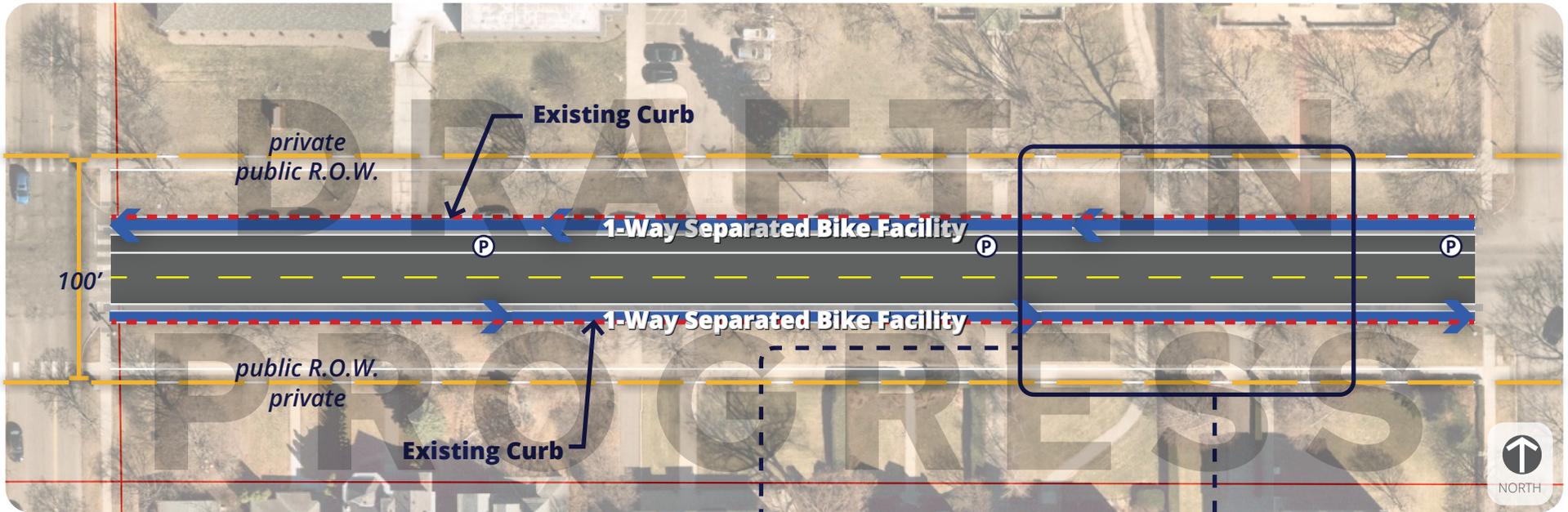


Fig. 4-10 | Segment D, E, F - Proposed Concept - Typical Block

These segments have the most constrained right-of-way conditions within the proposed trail corridor. For this reason, a preferred alignment has been identified, but additional approaches are being considered to allow for a context-specific decision making approach at the time of design and implementation when the corridor conditions can be studied with more accuracy. Recommendations are outlined on this page and the next.

Alternate Approach Parking Removed



Alternate Approach Two-Way Trail



Development Concept

Segment Recommendations

Recommendations for both the preferred and alternate alignments are outlined below:

Preferred Alignment | Narrowed Treadway:

- Implement two, one-way separated bicycle facilities on the north and south side of Summit Avenue
- Retain parking on one side of Summit Avenue, alternating between north and south based on land use and parking needs of adjacent properties
- Provide 9' treadway, encompassing a 6' bike lane and a paved 3' maintenance buffer.

Alternate Alignment | Parking Removed:

- Implement two, one-way separated bicycle facilities on the north and south side of Summit Avenue
- Remove parking on both sides of Summit Avenue
- Provide 7' bike lane, and 5' buffer on both the north and south sides of Summit Avenue

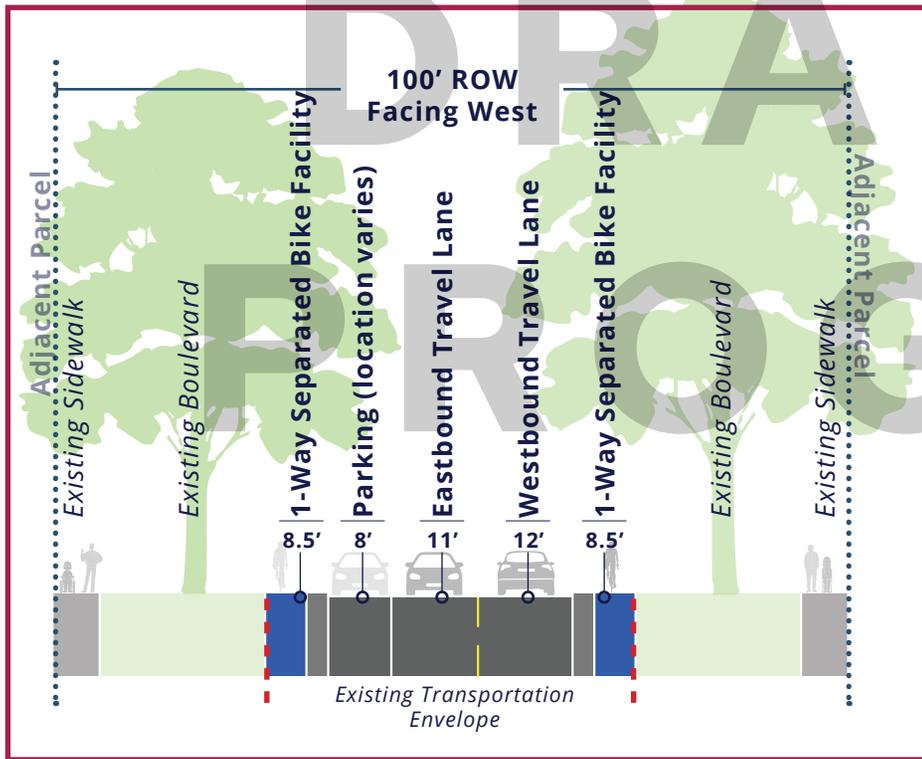
Alternate Alignment | Two-Way Bike Facility:

- Implement 2-way separated bicycle facility on the north side of Summit Avenue (westbound drive lane)
- Provide buffer between bicycle facilities and vehicular routes
- Alternate parking on north and south sides of Summit Avenue using a chicane in the roadway. Use a context-based approach to locate parking in areas of highest need.
- Maintain eastbound and westbound traffic lanes
- Further coordination is needed with Public Works to implement roadway chicane during future phases.
- See page 150 of this document for trail recommendations at driveways.

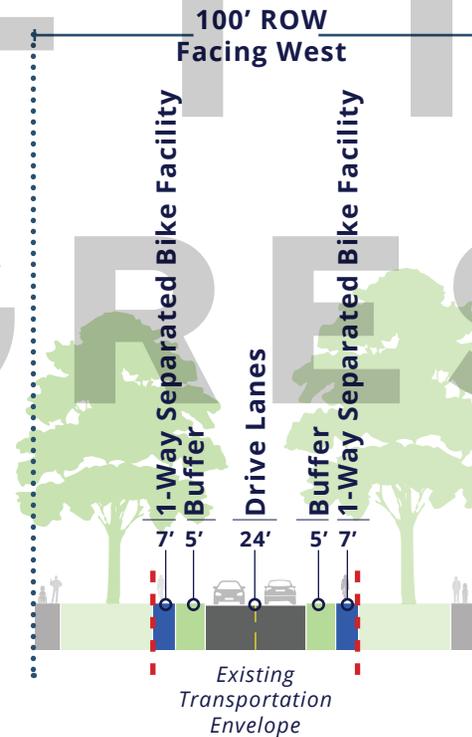
Development Concept

Segments D, E, and F | Proposed Concept

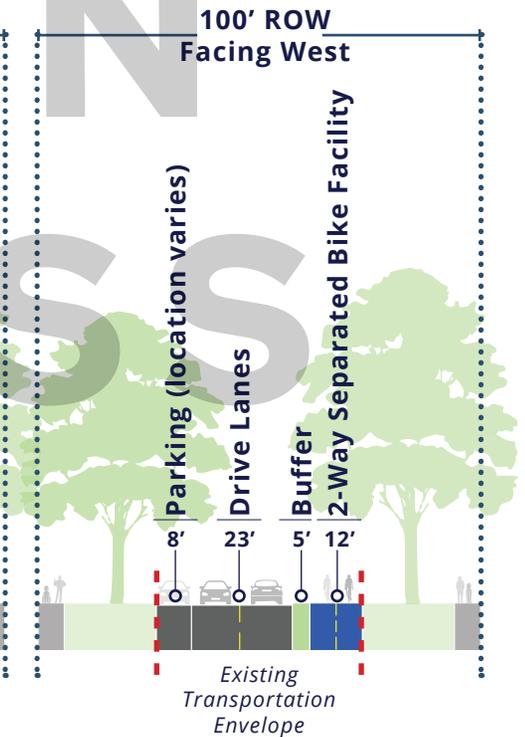
Preferred Trail Facility One-Way Facilities | Narrow Treadway



Alternate Approach One-Way Facilities | Parking Removal



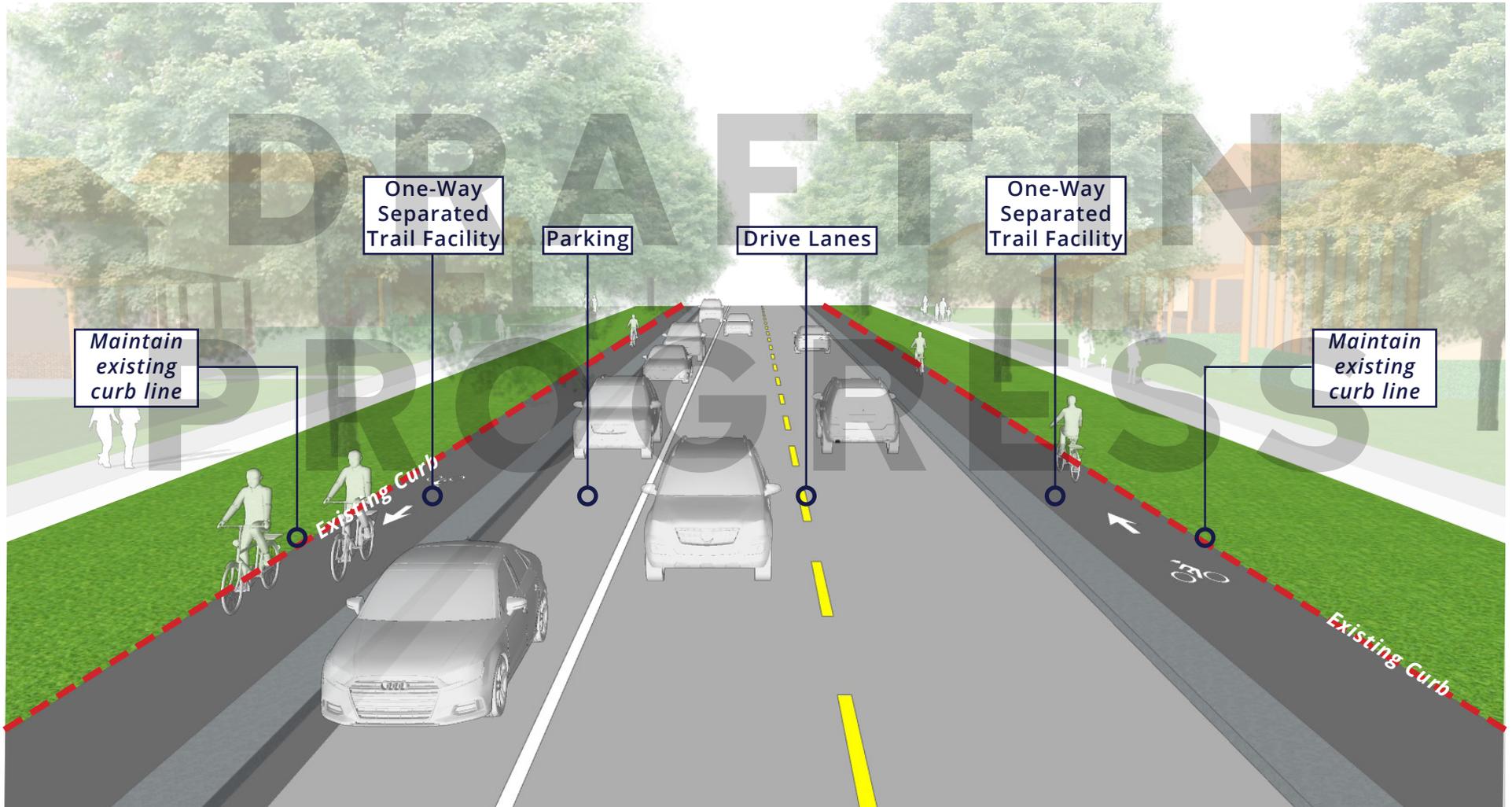
Alternate Approach Two-Way Facilities



Development Concept

Segments D, E, and F | Proposed Concept

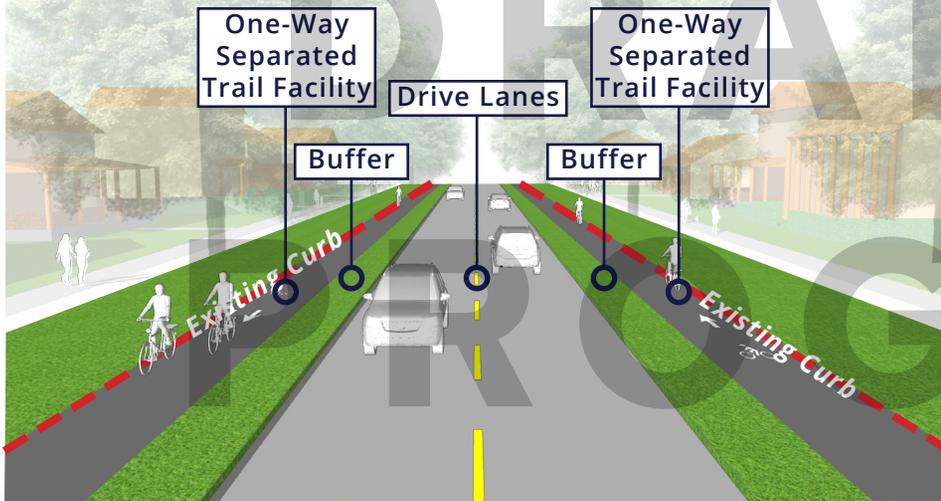
Preferred Trail Facility | Public Right-of-Way Corridor | Facing West



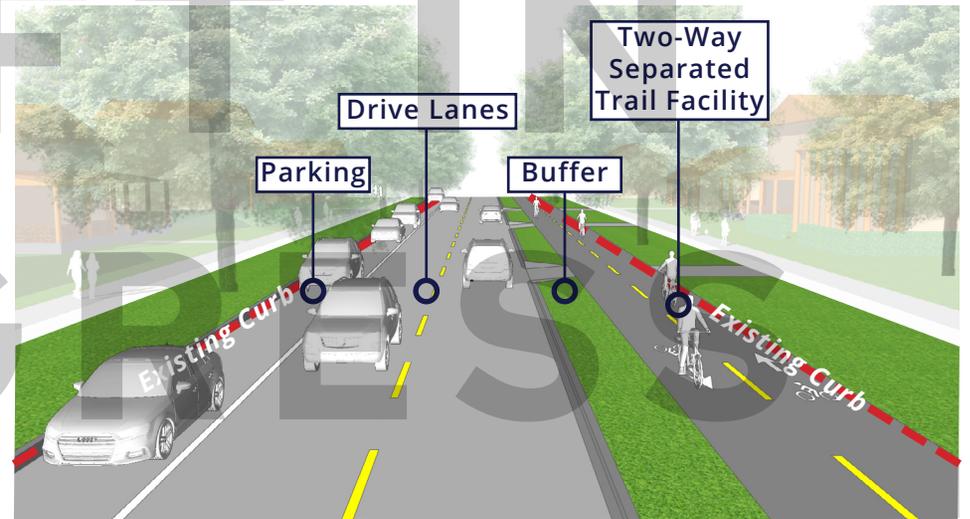
Development Concept

Segments D, E, and F | Alternate Concepts

Alternate Approach
One-Way Facilities | Parking Removal



Alternate Approach
Two-Way Facility



Development Concept

Segment G

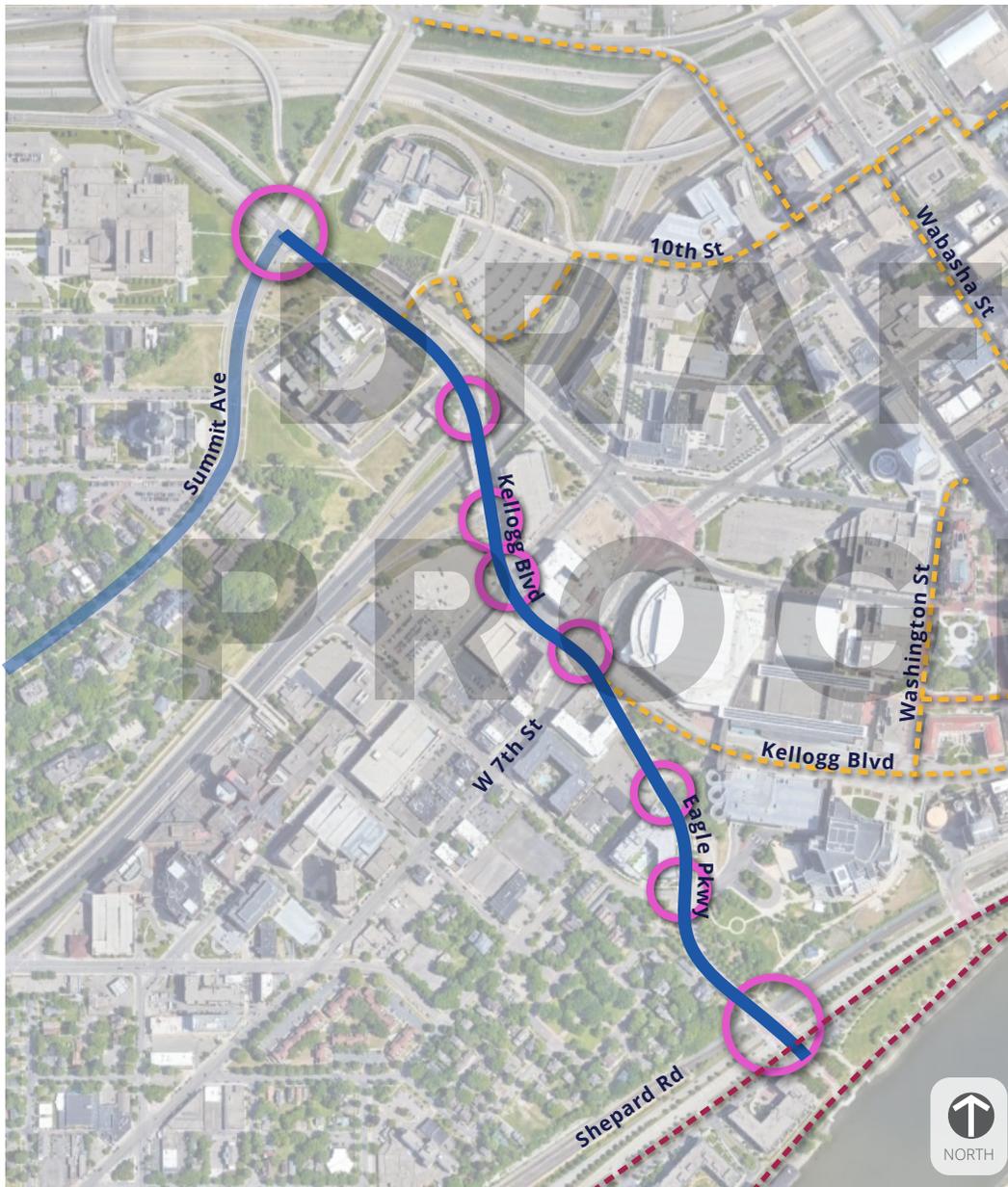
Segment G of the proposed regional trail has a very different, and more urban character than the other segments of Summit Avenue. This portion of the trail provides an important connection to other bicycle, pedestrian, and transit routes in and adjacent to the downtown area, as well as the Sam Morgan Regional Trail at the eastern most end of the Summit Avenue Regional Trail.

The section of the trail corridor along Kellogg Blvd is planned to share a facility with the future Capital City Bikeway. The design process for that project will inform trail location and facility dimensions.

The section of the trail corridor along Eagle Pkwy currently has a 12', multi-use bicycle and pedestrian facility. The proposed trail along this segment of the corridor will remain as-is, and the regional trail will be incorporated into the existing multi-use path. Additional pedestrian and bicycle facilities will be added as needed to support both current and future users of this segment. Additional wayfinding and signage will also be added for trail consistency and accessibility.

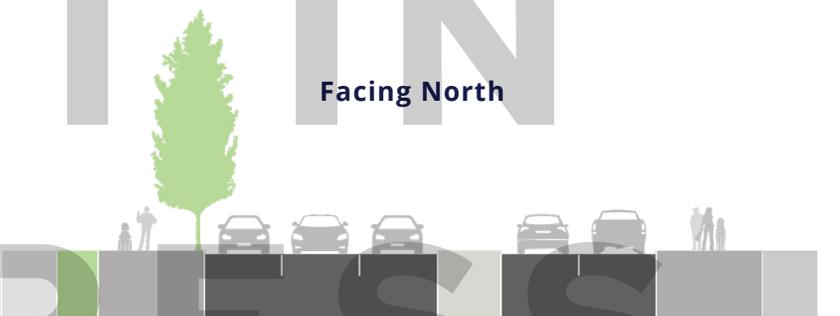


Development Concept

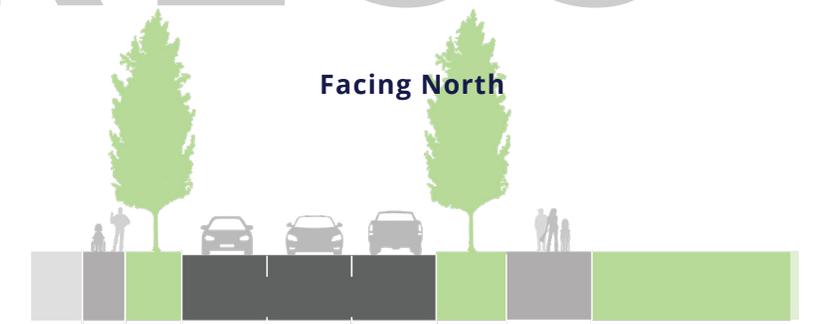


Legend

- Proposed Summit Avenue Regional Trail
- - - Planned Capital City Bikeway
- - - Existing Trails
- Signalized Intersection



Existing Condition | John Ireland Blvd to West 7th St



Existing Condition | West 7th St to Shepard Rd
Conditions Vary

Fig. 4-11 | Segment G - Existing Condition

Development Concept

Segment G | Capital City Bikeway

The Capitol City Bikeway: Network Study and Design Guide details the preferred cross sections for all segments of the bikeway, including the segment shared with the proposed Summit Avenue Regional Trail. Relevant cross sections are shown here.



Fig. 4-13 | Capitol City Bikeway Proposed Conditions

BIKEWAY IMPLEMENTATION PLAN

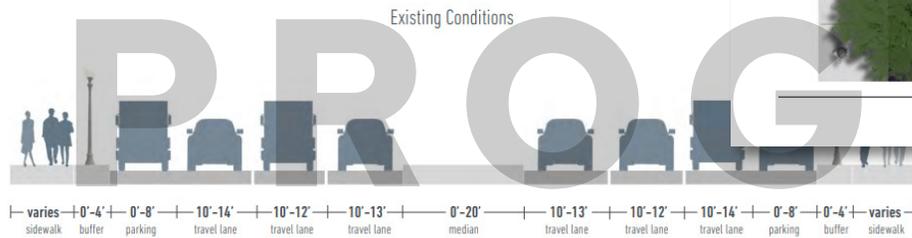


Fig. 4-12 | Capitol City Bikeway Existing Conditions on Kellogg Blvd

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.

Development Concept

Segment G | Eagle Parkway



**Eagle Parkway
Typical Block**
Shared-use trail on
existing path

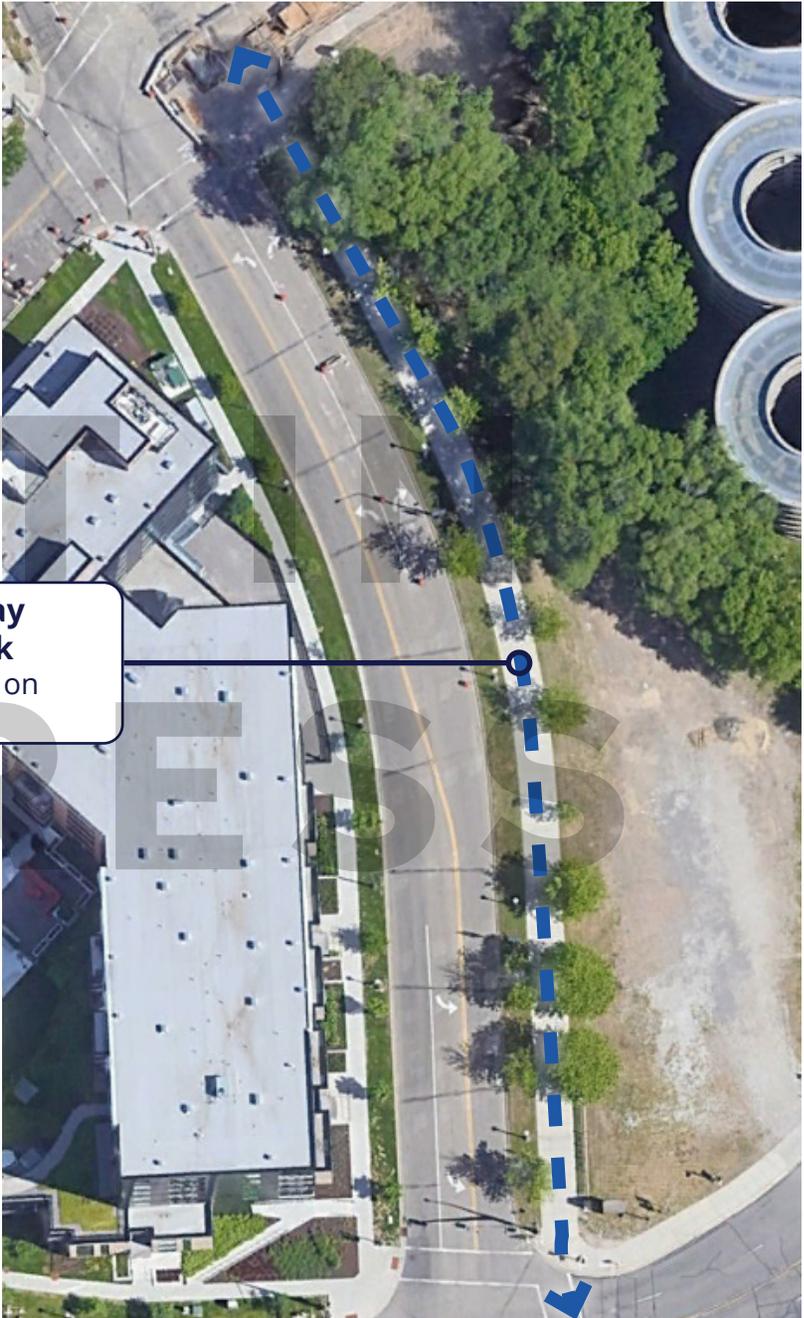


Fig. 4-14 | Segment G - Eagle Pkwy
Typical Existing Condition

Development Concept

Facility Transitions Toolkit

- Upgrade all crossings to be ADA compliant
- Provide consistent bicycle and pedestrian facilities, include visual and physical cues for increased visibility
- Consider contrasting pavement colors/materials, elevated crosswalks, signals for each mode, and other industry best practices
- Final intersection treatments will be determined during future design phases and coordinated with Saint Paul and Ramsey County Public Works.



PROGRESS

Facility transition locations and strategies will be determined at the time of final master plan trail alignment recommendations

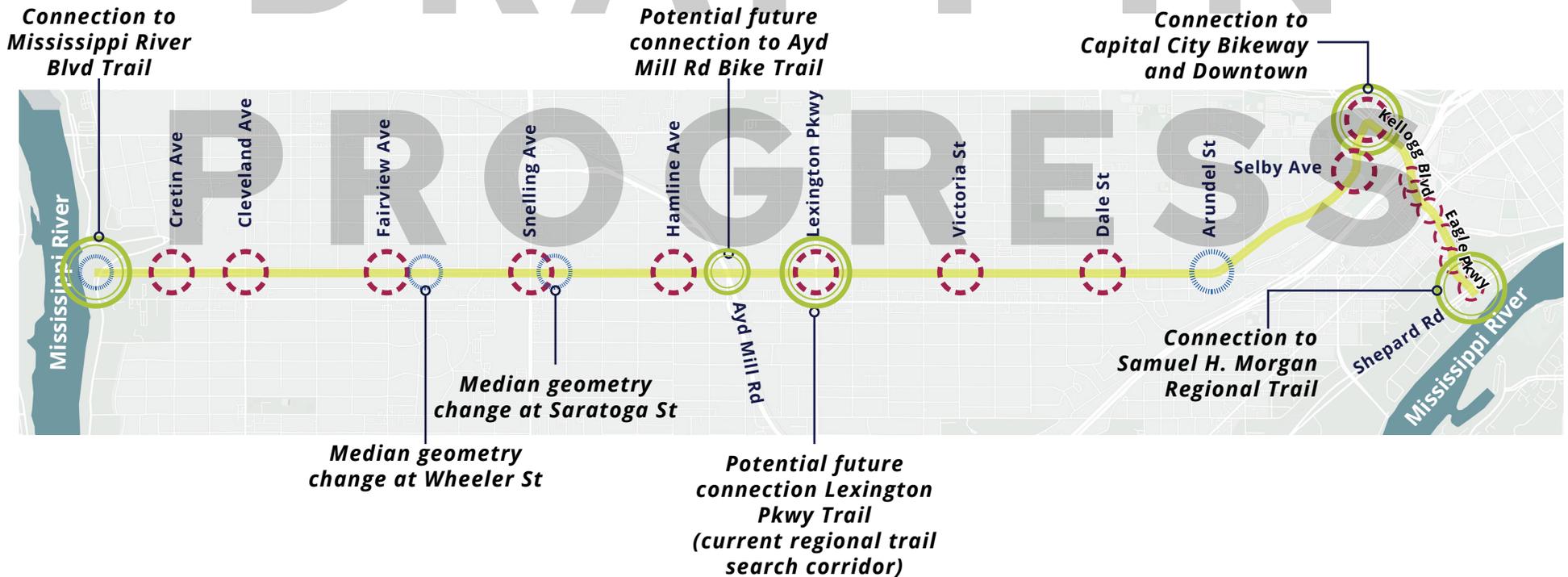
Development Concept

Existing Intersections

Legend

-  Signalized Intersection
-  Connection to existing trail/bikeway
-  Non-signalized, significant intersections

DRAFT IN PROGRESS



Development Concept

Intersection Design Toolkit

Intersection Design Guidelines

- Prioritize pedestrians and cyclists at intersections; ensure safety for all modes of travel
- Use consistent design strategies for all intersections along the Summit Avenue corridor that will be legible and familiar to all users
- Use infrastructure strategies for pedestrian, bicycle, and vehicle facilities that work in harmony and prioritize safety in a multi-modal trail corridor.
- Final intersection treatments will be determined during future design phases and coordinated with Saint Paul and Ramsey County Public Works.

Roadway Infrastructure

- 1 Construct curb extensions, or bump outs, at intersections to reduce the width of the road, and signalize that pedestrians and bikes are crossing.
- 2 Improve crosswalks to include updated ADA facilities. At unsignalized intersections, consider tabled crosswalks to make pedestrians and bicyclists more visible, and to provide a physical and visual cue to drivers to watch for pedestrians.
- 3 When reconstructing curbs, consider reducing curb radii and shrinking drive lane widths. These strategies encourage slower driving speeds.

Striping and Pavement Markings

- 4 Bike Boxes allow bicycles to be ahead of vehicular traffic at intersections, improving visibility and reducing bicycle/vehicle conflicts
- 5 Intersection crossing markings indicate the bicycle path through an intersection. They are visible to both cyclists and drivers to anticipate movements and reduce conflicts and confusion
- 6 Two-Stage Turn Queue Boxes can be used to transition between one-way and two-way bicycle facilities by creating a designated queuing zone for cyclists at transition intersections.

Design Strategies

Traffic Signals

- Prohibit right turn on red at intersections with high volumes of vehicles, pedestrians, and bicycles

Development Concept

Intersection Design Toolkit

DRAFT
PROGRESS



Image Courtesy of NACTO



Image Courtesy of NACTO

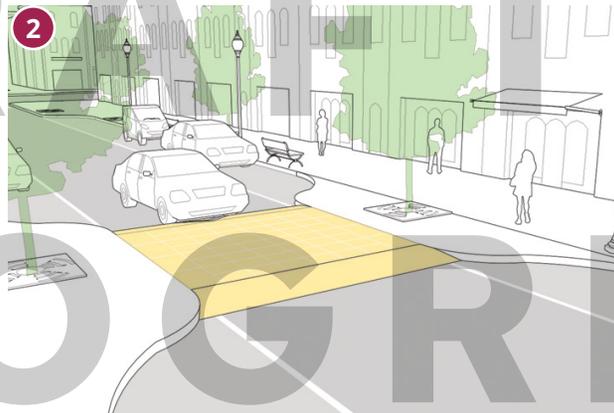


Image Courtesy of NACTO



Image Courtesy of NACTO



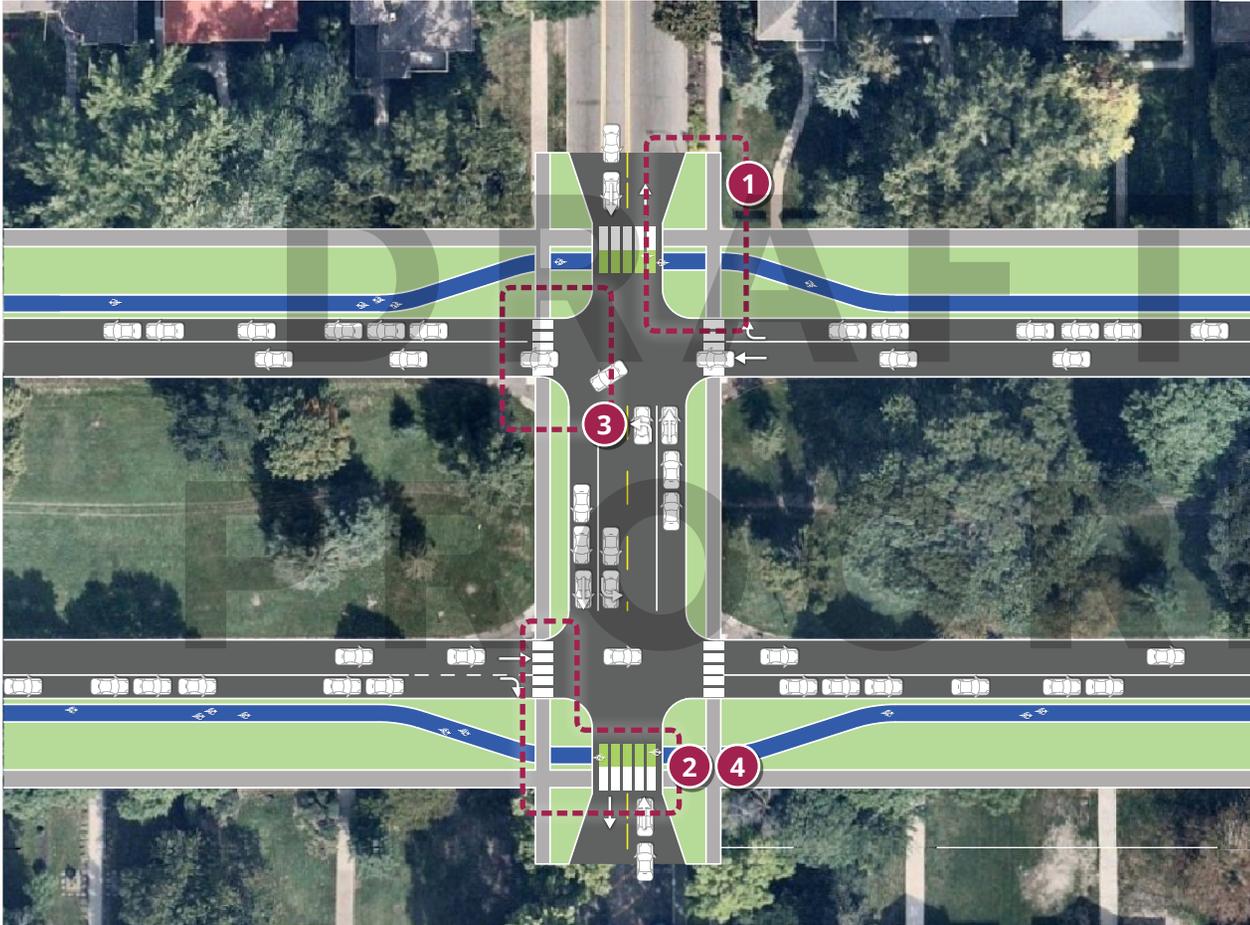
Image Courtesy of FHWA



Image Courtesy of NACTO

Development Concept

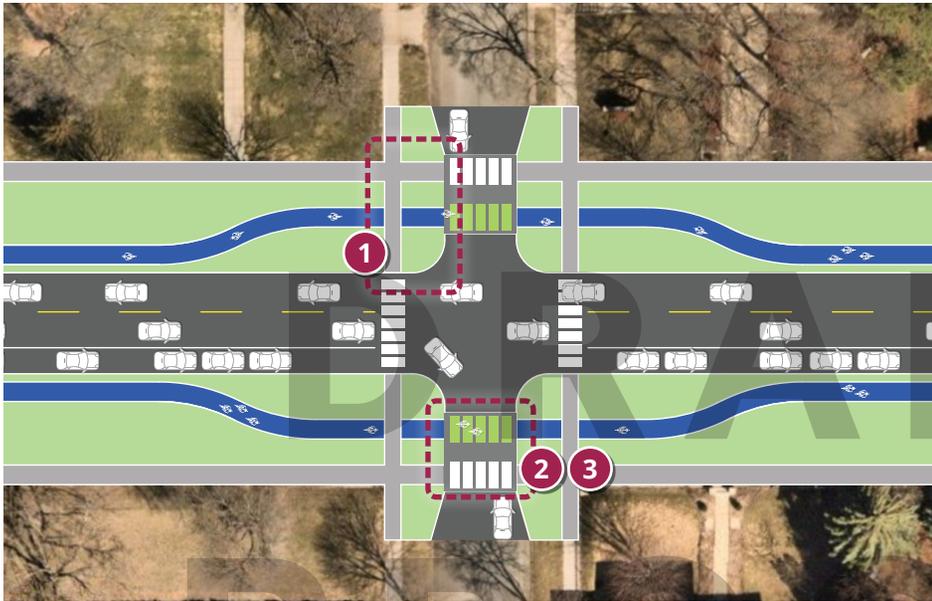
Typical Signalized Intersection (Fairview Avenue)



- 1 Corner Bump-outs
- 2 Intersection Crossing Markings
- 3 Reduce Curb Radii
- 4 Improve crosswalks

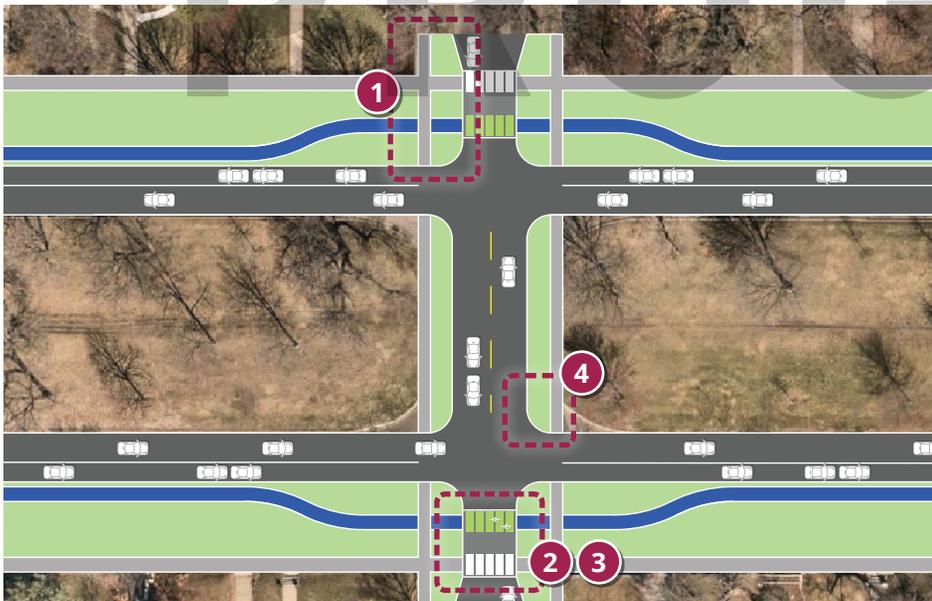
Adjusting sidewalks at intersections will be determined based upon tree health, and final alignment will be evaluated beyond the master plan during design and engineering of a trail facility.

Development Concept



Typical Unsignalized Intersection
(Segments D, E, and F)

- 1 Corner Bump-outs
- 2 Raised Crosswalk
- 3 Intersection Crossing Markings



Typical Unsignalized Intersection
(Segments A and C)

- 1 Corner Bump-outs
- 2 Raised Crosswalk
- 3 Intersection Crossing Markings
- 4 Reduce Curb Radii

Adjusting sidewalks at intersections will be determined based upon tree health, and final alignment will be evaluated beyond the master plan during design and engineering of a trail facility.

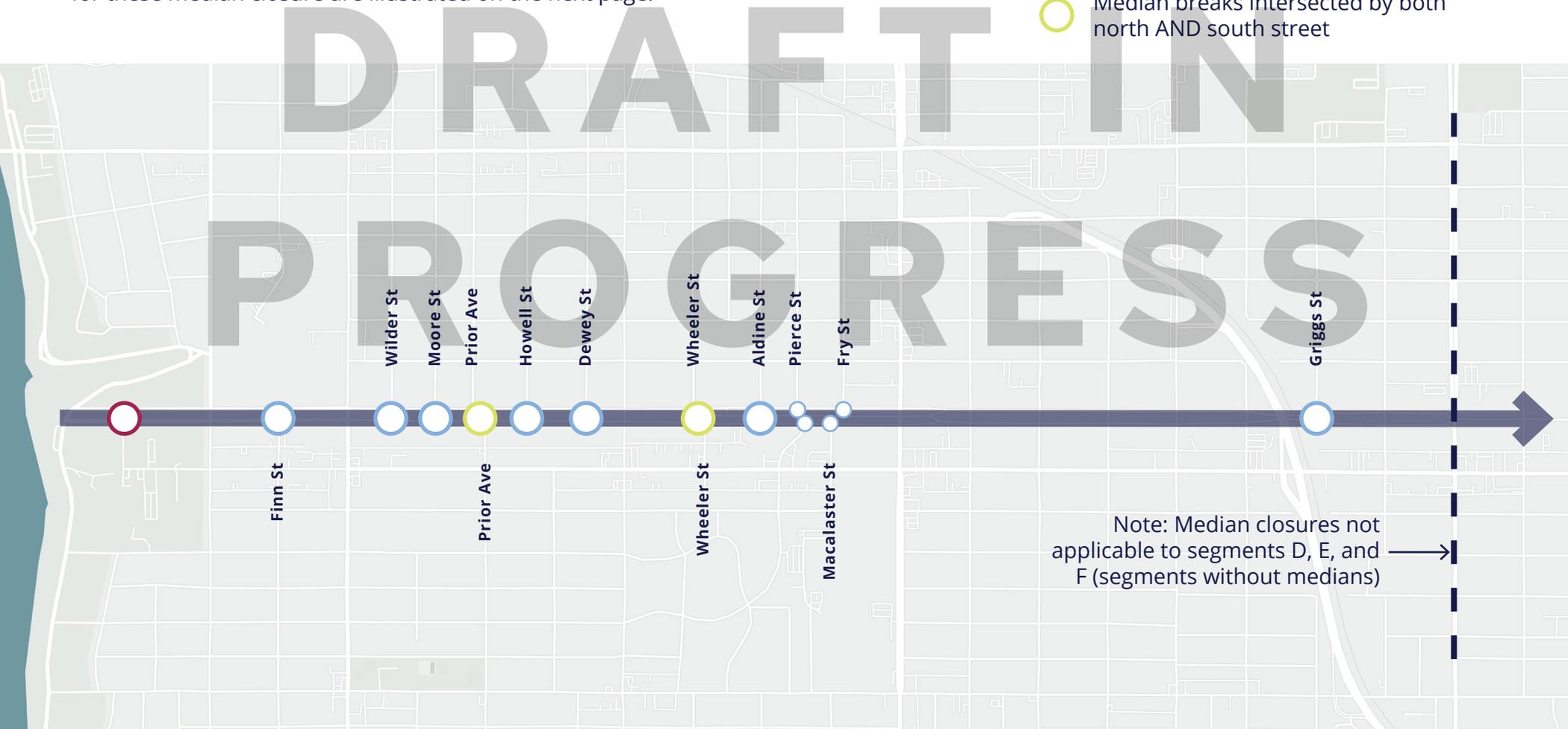
Development Concept

Special Considerations | Median Closures

In certain conditions, medians along Summit Avenue may be considered for closure, converting them from a vehicle-oriented space, to a more pedestrian-friendly space with a continuous park-like character. Locations to consider median closures can be found on the diagram on this page. Concepts for these median closure are illustrated on the next page.

Legend

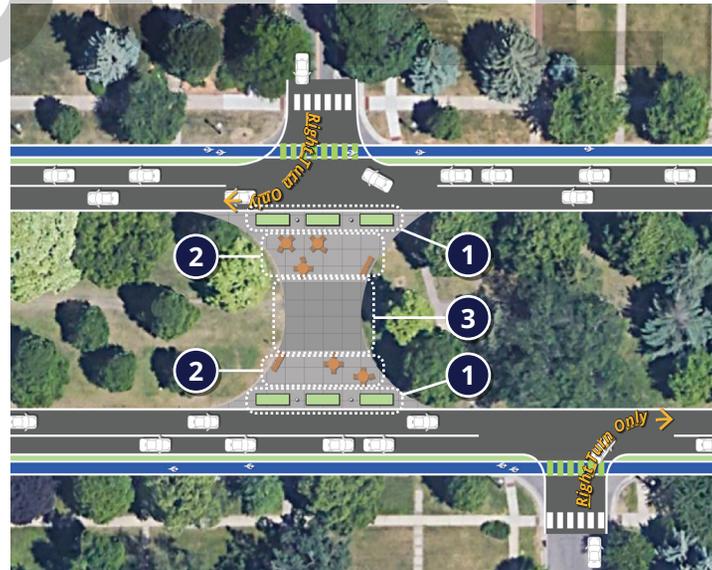
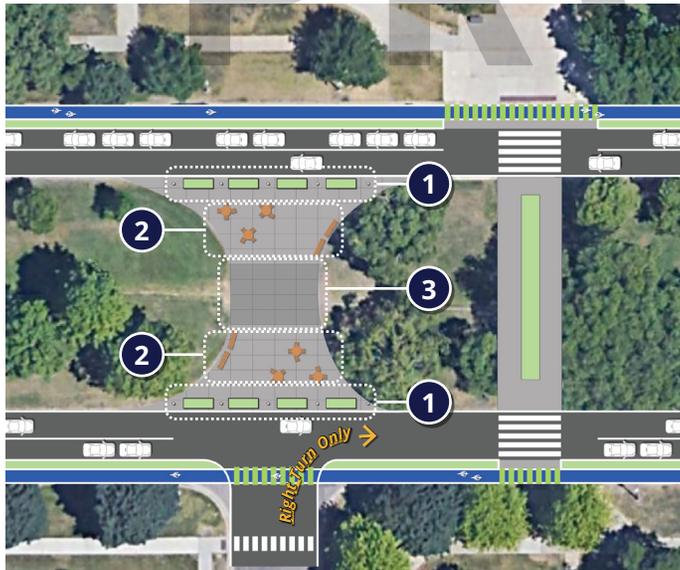
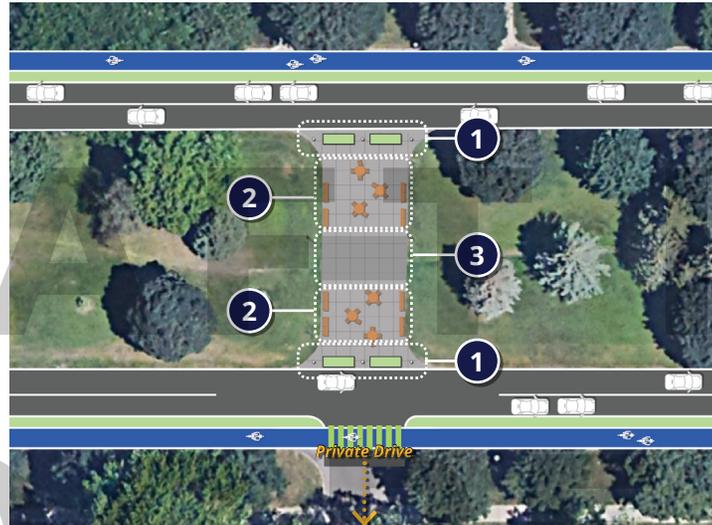
- Median breaks not intersected by north/south street
- Median breaks intersected by either north OR south street
- Median breaks intersected by both north AND south street



Development Concept

Special Considerations | Median Closures

- 1 **Vehicle Barriers**
Bollards, planters, etc.
- 2 **Seating**
Benches, tables, etc
- 3 **Decorative Paving**
Reflect historic character of neighborhood through paving design; differentiate path through center to connect informal running path in median



Development Concept

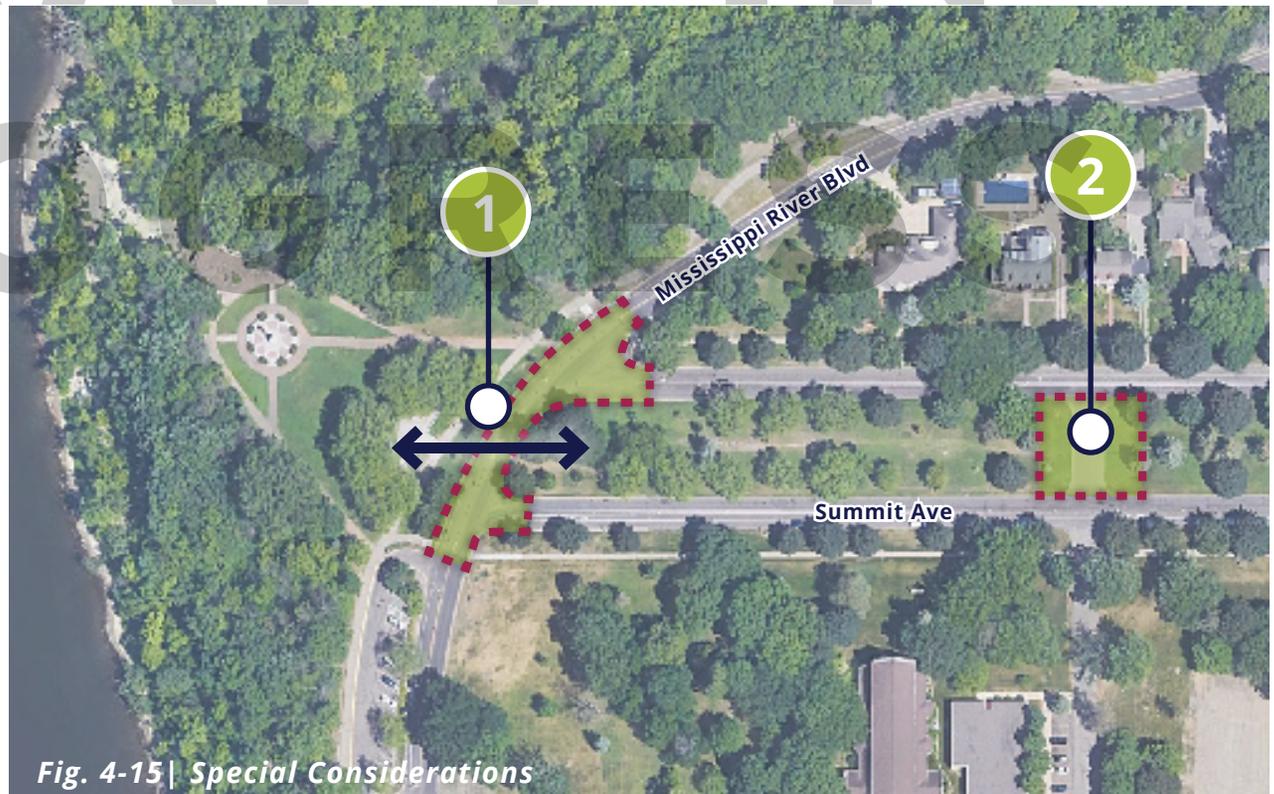
Special Considerations

1 Connection to Mississippi River Blvd and Shadow Falls Park

- Pedestrian Oriented Crossing
 - Pavement color/material that provides visual contrast
 - Elevate crosswalk 4-6" above roadway - physical cue
 - Consider stop signs for vehicular traffic on Mississippi River Blvd.
 - Pedestrian/bike crossing warning lights
 - Clear sight lines between drivers and pedestrians/cyclists
- Connect trail facilities
 - Provide clear and consistent bicycle facilities
 - Wayfinding and signage to orient users

2 Consider Temporary Pedestrian Space at Existing Vehicle turnaround

- Create a more continuous median for a park-like experience that prioritizes pedestrians over vehicles
- Planters on north and south side of turnaround to deter vehicles
- Moveable, seasonal seating
- Temporary pavement delineation to provide continuation of median trail
- Wayfinding and signage



Development Concept

3 Connection to Greenspace

- This area, sometime referred to as 'Short Line Park' is within public right-of-way that is commonly used as a community park open space. Consider process for creating and designating this as City Parkland to support long-term maintenance, amenities, and improvements

- Retain mature oaks to preserve character and provide shade and comfort
- Consider trail amenities here - bike rack and fix-it station, wayfinding and signage, and seating

4 Connection to Ayd Mill Rd Bike Trail

- Provide connection between trail facility on Summit Ave and Ayd Mill bike trail with stairs, bike runnel, etc.

5 Community Identified Area of Significance

- Lilac path in central median - beloved by current users of Summit Avenue

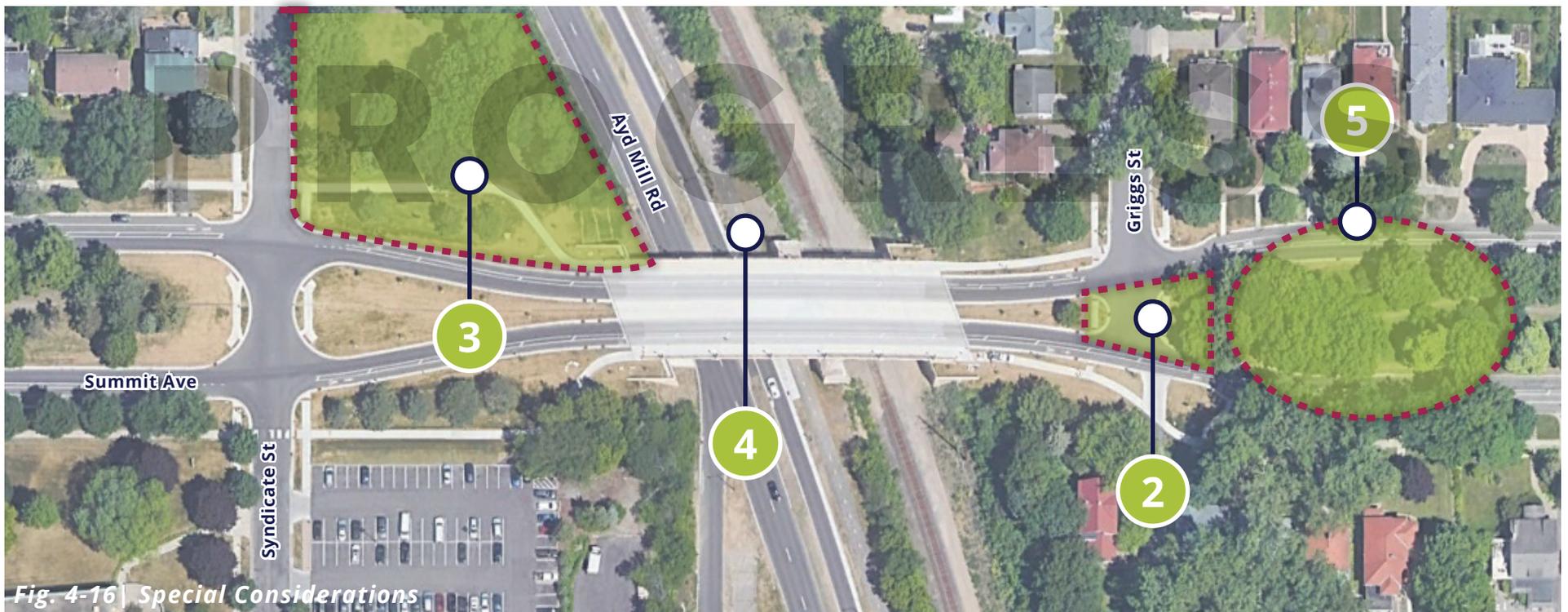


Fig. 4-16 | Special Considerations

Development Concept

Special Considerations

6

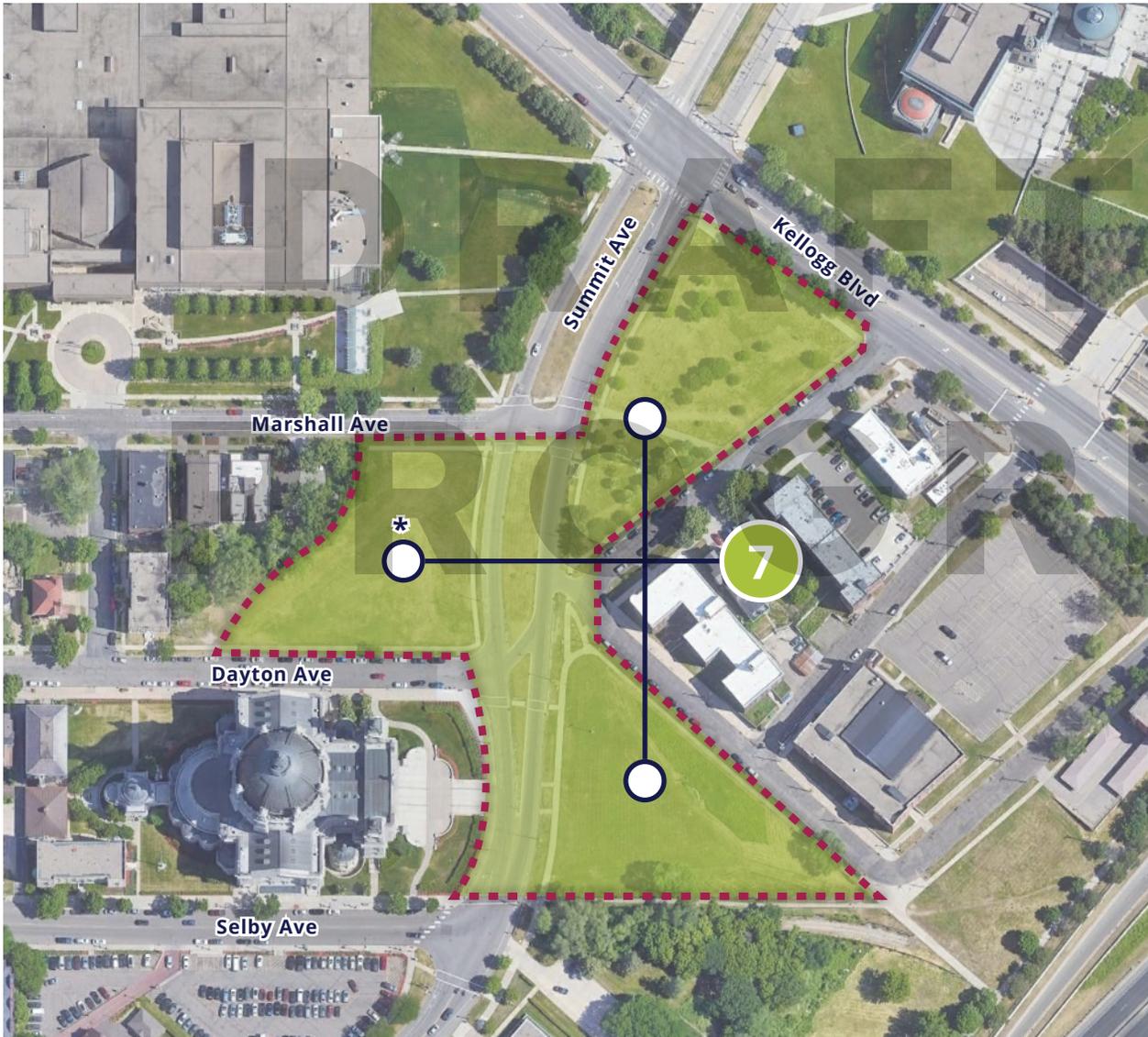
Connection to Summit Overlook Park and Nathan Hale Park

- Special Crossing
 - Pavement color/material that provides visual contrast
 - Elevate crosswalk 4-6" above roadway - physical cue
 - Wider crosswalk for both cyclists and pedestrians
- Trail Amenities
 - Consider trail amenities here - bike rack and fix-it station, wayfinding and signage, and seating
 - Integrate parks into trail experience



Fig. 4-17 | Special Considerations

Development Concept



7

Utilize greenspaces for pedestrian- and cyclist-oriented amenities

- Trail Amenities
 - Consider trail amenities here - bike rack and fix-it station, wayfinding and signage, and seating
 - Integrate parks into trail experience
- Safety
 - Provide safe crossings on Summit Avenue and prioritize bicycles and pedestrians over vehicular traffic

* Coordination with Saint Paul Public Works will be required for the parcel west of Summit Ave, between Marshall Ave and Dayton Ave.

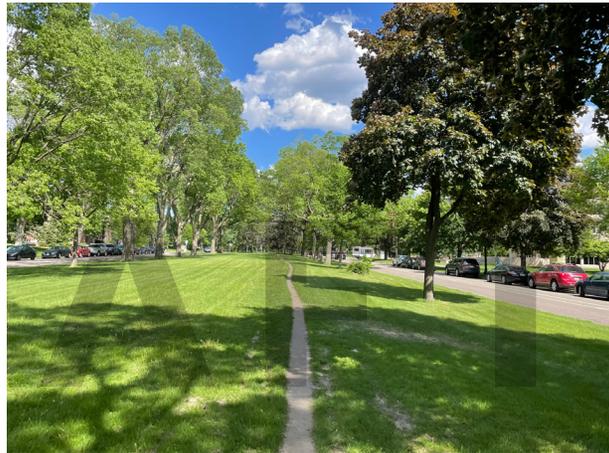
Fig. 4-18 | Special Considerations

Development Concept

Special Considerations



As segments of the regional trail are implemented, considerations should be made to repair adjacent amenities that can support the broader goals of connectivity and access for the proposed trail. For example, repairing and re-opening the Walnut Street Staircase can provide a connection from Summit Avenue to pedestrian path and 35W bridge crossing. Additional signage and wayfinding can be incorporated into these repairs to make use accessible and safer. Other amenities should be considered such as bike parking, and/or a bike rail to transport bikes between elevations.



Maintain informal running path in central median.



Consider closing some roads cutting through the median to provide a continuous median park space

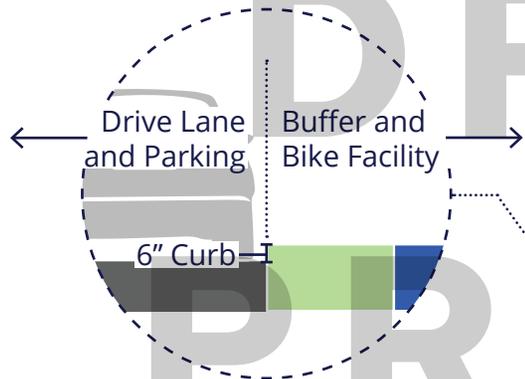
If closures to thru vehicles are implemented, explore ways to reflect the historical curb geometry and spatial pattern of the roadway in what would become continuous pedestrian-oriented space. Coordinate with Saint Paul Public Works.

Development Concept

Typical Driveway Conditions

Driveways located between the sidewalk and the street will be removed and replaced as part of a future street reconstruction. Coordinate with Public Works on engineering solutions that ensure usability by residents.

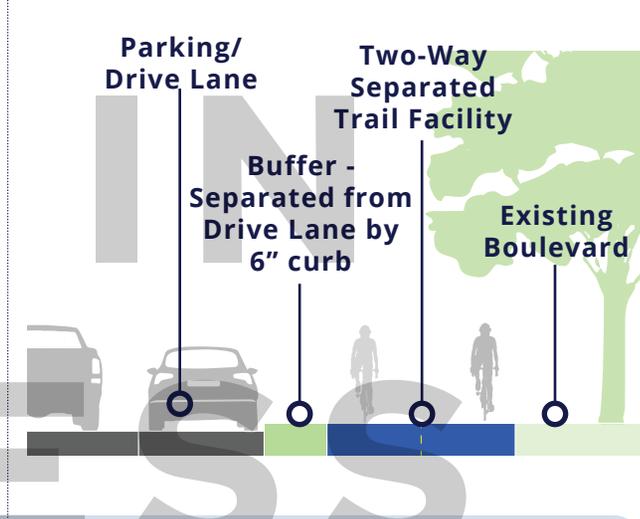
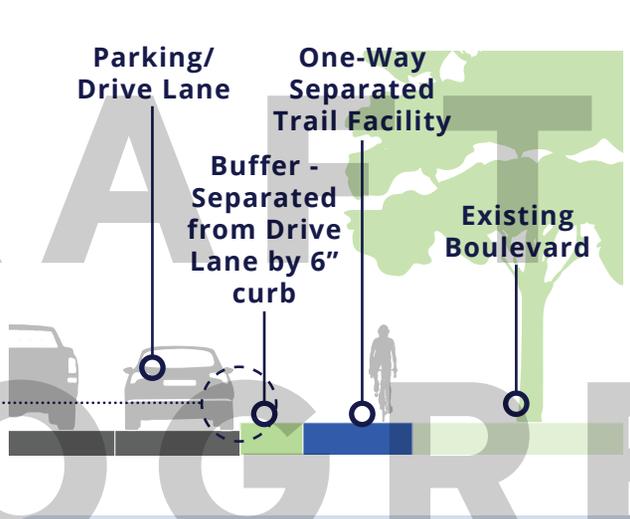
Typical Curb Separation Between Vehicular and Bike/Pedestrian Modes



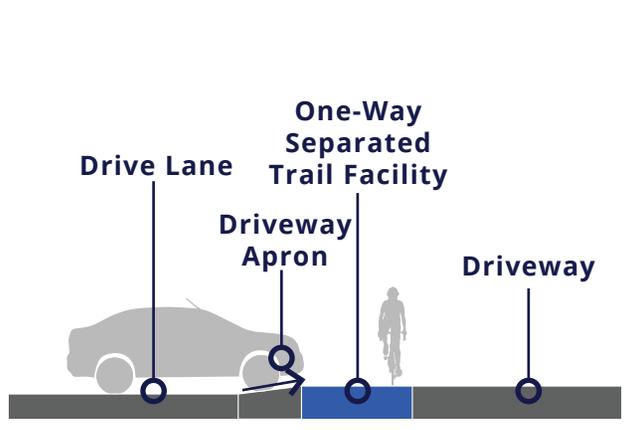
Typical Driveway at Separated Facility



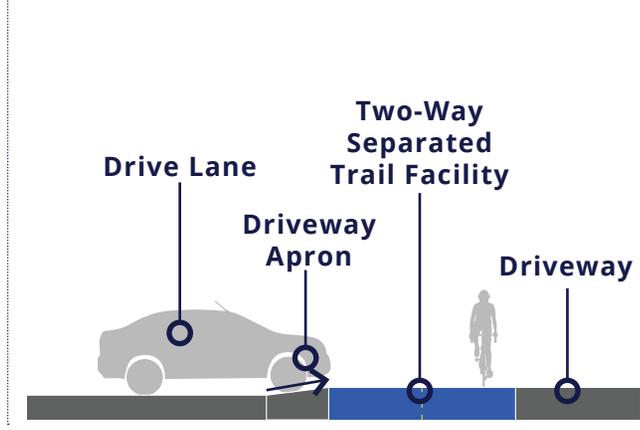
Standard Curb Condition



Driveway Curb Condition



Driveway Curb Condition



Accessibility

Accessibility Toolkit

- Repair pedestrian walkways that do not meet ADA accessibility guidelines
- Provide pedestrian and bicycle ramps at all grade changes
- Provide accessibility upgrades at all intersections through implementation including curb ramps, landing areas, and tactile warning strips
- Include visual cues to clearly mark transition areas
- Consider benches and seating along the corridor to provide opportunities for rest
- Ensure wayfinding signage follows accessibility guidelines
- Create a comfortable trail facility for all users regardless of ability
- Provide connections to existing regional trail and other bike trail facilities with familiar design queues and signage to encourage users from around the region to feel safe and comfortable using the trail
- Provide signage to nearby transit facilities including direction and distance between trail facility and nearest transit stop

Images to illustrate accessibility upgrades within the Summit Avenue corridor

Wayfinding

Wayfinding and other signage types along the trail corridor will help provide a consistent, safe, and unique experience for trail users. As the corridor evolves, additional signs may be added to indicate new connections to transit, regional parks and trails, and other amenities along the corridor.

Locations and types of wayfinding signage indicated on the plan reflect feedback from community engagement. Significant places, connections, and character features were identified by community member

Wayfinding Toolkit

- Follow accessibility guidelines for all signage along trail corridor
- Develop a corridor-wide signage plan to ensure a cohesive strategy for wayfinding
- Adhere to other signage standards for the City of Saint Paul Parks and Recreation signage plan for consistency and legibility.

Legend

H Historical Marker

Signage to indicate historically significant districts and properties along the corridor including those listed on the National Register of Historic Places.

G Connection to Greenspace

Signage at parks, public green spaces, or significant vegetation features along the trail corridor.

T Connection to Transit

Indicate direction and distance to transit routes that intersect or closely connect with the trail.

D Directional Signage

Include signage at the beginning and end of trail, and at intervals along the trail and major intersections that connect to other trails and pedestrian connection points.

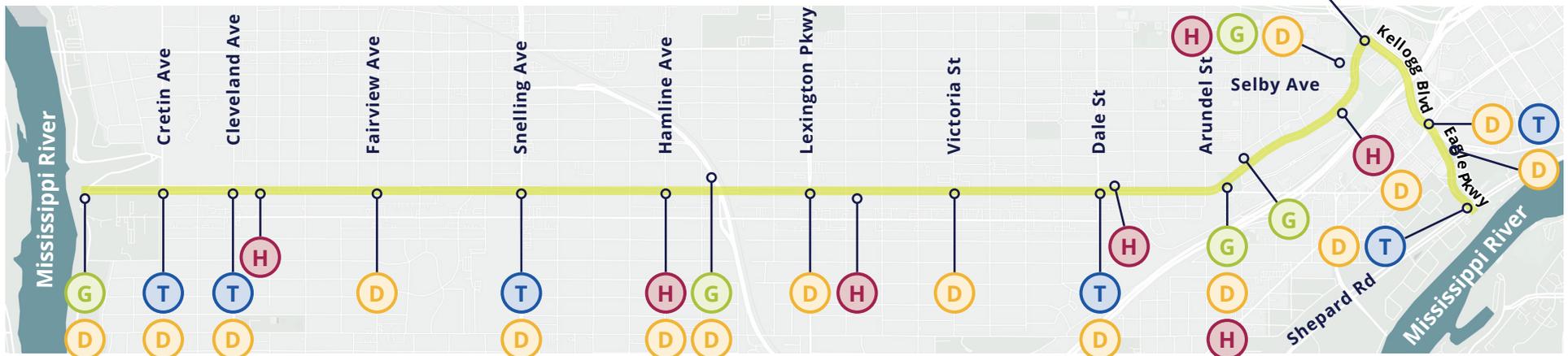


Fig. 4-19 | Wayfinding

Sidewalks and Pedestrian Infrastructure

The pedestrian route along Summit Avenue is one of the defining character features of the corridor. Additionally, the sidewalk is a preferred way of residents and visitors to experience and enjoy the historical and natural features of the corridor. Of the top five walking locations collected in 2019 by the City of Saint Paul, three of the segments were along Summit Avenue (Summit Ave east of Cleveland Ave, Summit Ave east of Fairview Ave, and Summit Ave east of Western Ave). The existing sidewalks vary, from 6' concrete sidewalks along most of the corridor, to the wider 10' sidewalks east of Dale St that reflect the historic character of the community.

The regional trail facility proposed in this master plan seeks to maintain the existing sidewalks as they are, and augment the pedestrian experience by providing a bike facility that is separate from both the roadway and the pedestrian sidewalks to provide a regional facility that is safe for all users.

As the regional trail facility is implemented, sidewalks may be considered for reconstruction depending on condition and safety. As intersection updates are implemented, sidewalks that do not meet ADA accessibility guidelines will be reconstructed.

Images to illustrate improvements to sidewalks and pedestrian infrastructure within the Summit Avenue corridor



Furnishings and Amenities

Specific types and locations of furnishings and amenities will be reviewed during design and implementation of the regional trail

Public Art



Bike racks and amenities

Interpretive Signage

Seating

DRAFT
PROGRESS

Lighting



Wayfinding and signage

Public Art Process

**DRAFT IN
PROGRESS**

The final Master Plan document will include a framework for the Public Art process that can be utilized by projects during design and engineering for implementation.

Greenspace and Tree Canopy

Natural Resources Toolkit

Ash Tree Removal

Since 2010, the City of Saint Paul has employed the “Structured Removal” of ash trees to strategically reduce the total percentage of ash trees on boulevards and in parks throughout the City. By addressing the issue of Emerald Ash Borer before trees become infected, the City is reducing the number of dead and potentially hazardous ash trees in the City. The general approach for removal is a three-year planned process or as part of active construction projects.

- Year 1 - Removal
- Year 2 - Stump Removal
- Year 3 - Re-planting

Summit Avenue ash tree removals typically occur between January and July. As of spring 2022, the removals process has begun on Summit Avenue, with the ash trees between Fairview Ave and Dewey St already having been removed. The section of Summit Avenue between Mississippi River Blvd and Arundel St began removals in winter 2021. The section of Summit Avenue between Arundel St and Kellogg Blvd is planned for removals starting in 2023. Additional updated information about ash tree removals and replacements is available on the City Forestry website (<https://stpaul.maps.arcgis.com/apps/webappviewer/index.html?id=f9d56f2cc231474c81dc2ef45c45136f>).

Tree Preservation and Protection

Chapter 176 of the Saint Paul city code applies to this area. Chapter 74, the Heritage Preservation Districts and Programs also apply. Articles for both the Summit Avenue West Heritage Preservation District and Heritage Hill Historic Preservation District are contained within this chapter and provide some guidance concerning tree preservation and general landscaping. The 2010 Park and Street Tree Master Plan is the City’s guide to all aspects of street tree planting, maintenance, and preservation. This document will guide future maintenance of trees and greenspace within the regional trail corridor. “Landmark trees” noted within the greenspace analysis have been nominated by residents or groups as significant trees. This designation does not provide any formal protections or requirements regarding these trees.

Design and Mitigation of Impacts

Critical and structural root zones are starting points for evaluation. Species comes into play as well as to how a tree would be impacted.

Structural root zone: once damage occurs, there is potential for tree failure.

Zones of impact can be limited at curbs. Generally, significant roots are not found beyond curb lines and existing paved areas.

Best practices to mitigate impacts in structural root zone:

- Minimize excavation
- Air-spade roots to evaluate field design and work around plant and get materials in (labor intensive)
- City standard tree-protection details to be utilized

Evaluate trees on private property within 10’ of the back of sidewalks. These may be impacted or required further evaluation during construction to minimize impacts.

Conflicts

Environmental and Historical Review Process

Trail Consistency and Functionality Through Phased Implementation

Space Allocation

- Parking
- Greenspace



PROGRESS



Implementation

Project Phasing

Phase 1

Lexington Pkwy - Victoria Ave

- 2023 mill and overlay project including restriping
- Curb lines remain
- Funding sources TBD

Phase 2

Phase 2A | Lexington Pkwy to Kellogg Blvd

- Distance: 1.7 miles
- Partnered funding approach (federal and local)
- Funding NOT currently available

Phase 2B | John Ireland Blvd to Shepard Rd

- Distance: 0.75 miles
- New trail: Capital City Bikeway Process (John Ireland Blvd to 7th St): 2027 Funding request submitted
- Enhance existing multi-use trail at Eagle Pkwy
- Funding NOT currently available

Phase 3

Phase 3A | Lexington Pkwy to Fairview Ave

- Distance: 1.5 miles
- Partnered funding approach (federal and local, MnDOT potential at Snelling Ave)
- Funding NOT currently available

Phase 3B | Fairview Ave to Mississippi River Blvd

- Distance: 1.0 miles
- Partnered funding approach (federal and local)
- Funding NOT currently available

Partner Engagement

- Saint Paul Parks and Recreation
- Saint Paul Public Works
- Metropolitan Council
- Ramsey County Public Works
- Minnesota Department of Transportation
- State Historic Preservation Office
- Historic Preservation Commission

Project Costs

Project Information

Project Length - Miles (approx.) <i>includes segments from Mississippi River Blvd to Kellogg Blvd</i>	4.7
Project Length - Linear Feet (approx.)	24,816
Units (per 100')	249
Number of Intersections (max)	46
Number of Major Intersections	12

Corridor Costs (interim)

**On-Street Buffered Bikeway
(Potential interim condition) =
\$4,000-\$5,000 per 100' Length**

Assumptions:

- No paving
- Parking removal
- Pavement markings and signage only
- Flexible delineators

Corridor Costs

**One-Way Separated Bikeway =
\$45,000-\$50,000 per 100' Length**

Assumptions:

- Maintain existing sidewalk and boulevard
- Remove roadway pavement and install bikeways
- Remove curb and gutter (each direction)
- Remove 23' wide roadway pavement
- New curb and gutter, 4' grassed buffer and 7.5' bikeways
- Includes drainage structure relocation
- Includes driveway paving
- Includes signage
- Does not include lighting or utility relocation
- Does not include trail amenities

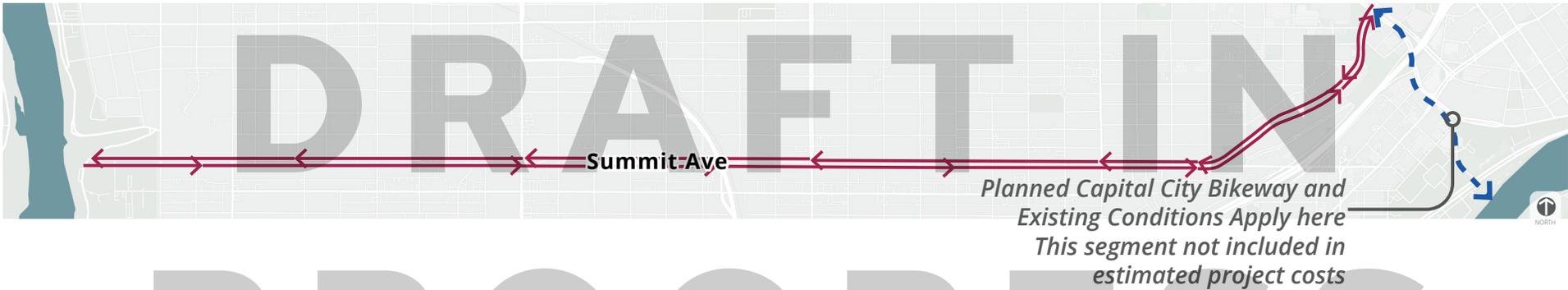
**Two-Way Separated Bikeway =
\$30,000-\$35,000 per 100' Length**

Assumptions:

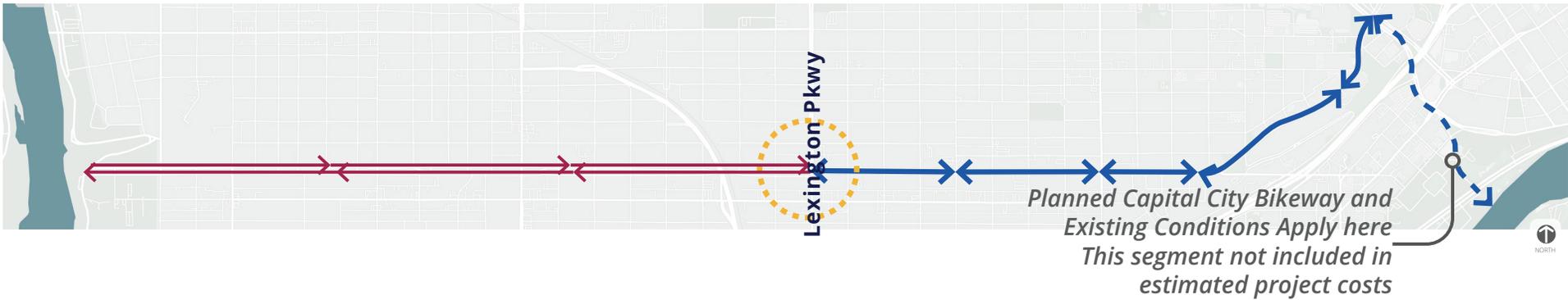
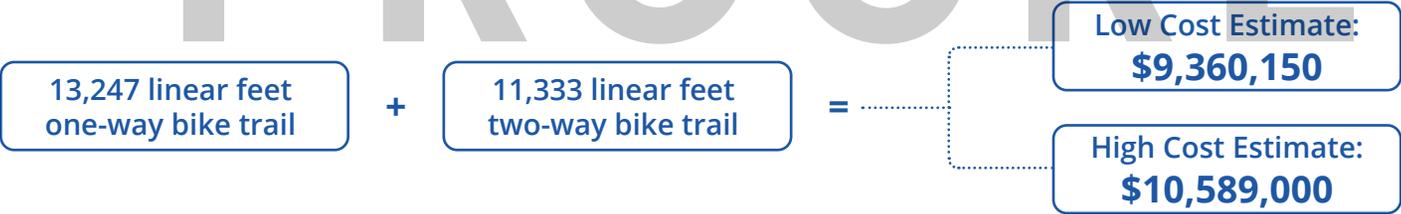
- Maintain existing sidewalk and boulevard
- Remove roadway pavement and install bikeway
- Remove curb and gutter (one side)
- Remove 16' wide roadway pavement
- New curb and gutter, 4' grassed buffer and 12' bikeways
- Includes drainage structure relocation
- Includes driveway paving
- Includes signage
- Does not include lighting or utility relocation
- Does not include trail amenities

Project Costs

Potential Project Costs: Preferred Development Concept:



Potential Project Costs: Alternate Development Concept:



Boundaries and Acquisition Costs

Boundaries

The project boundaries include the public Right-of-Way along Summit Avenue from Mississippi River Blvd to W Kellogg Blvd, along Kellogg Blvd from Summit Ave / John Ireland Blvd to Eagle Pkwy, and Eagle Pkwy from W Kellogg Blvd to the Sam Morgan Regional Trail at Shepard Rd.

Acquisition Costs

There are no property acquisitions anticipated for the implementation of the Summit Avenue Regional Trail facility. A more detailed study of properties adjacent to the proposed trail corridor will be completed as segments of the trail corridor are implemented.

Property Impacts

Impacts to private property are not anticipated to be necessary to identify a trail alignment and design along Summit Avenue. The 100- and 200- foot right-of-way and existing parkway are expected to provide sufficient space for a trail to be sited within the existing corridor section.

Should property impacts be identified, they are anticipated to be temporary in the form of easements for construction. Specific property elements which may be impacted depending on the preferred design include:

- Existing stairs and retaining walls
- Trees on private property (with critical root zones near the public ROW)
- Planting beds
- Driveway aprons

As project segments are implemented, property owners will be notified about potential impacts prior to implementation.

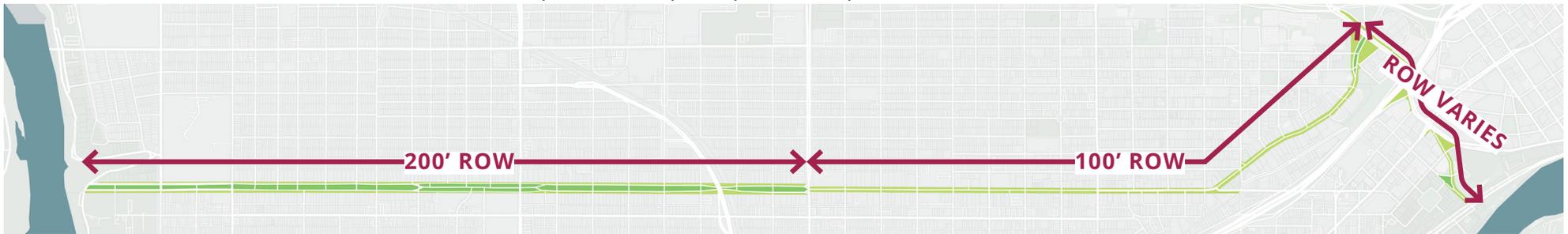
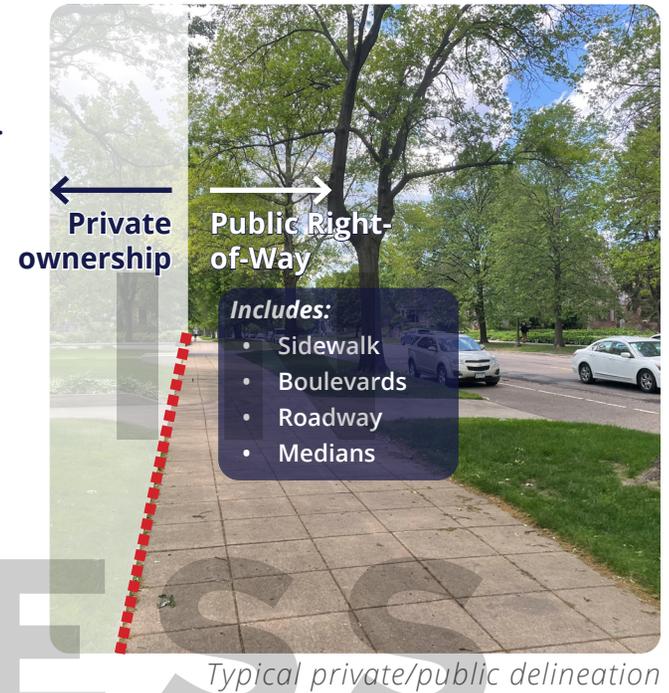


Fig. 5-1 | Summit Avenue Regional Trail Corridor, approximate project boundaries

Operations and Maintenance

All regional trails within Saint Paul are included in the park operations and maintenance budget. This includes annual assessment of the trail conditions, repair, and renovations or the trail components as needed. The completed trail facility will be included in the normal operations and maintenance cycle funded in part with the Regional Park maintenance fund.

Winter Maintenance

The community engagement process has highlighted the importance of snow removal and winter maintenance of bike facilities along Summit Avenue. Separated bike facilities will be managed by City Parks and Recreation staff as part of the City's overall maintenance schedule of trail facilities. As a component in the City and County's non-motorized transportation planning, snow plowing would be performed as needed following measurable snow falls. Materials for the trail facility should be durable and should be selected with year round maintenance in mind. Additionally, a buffer zone or other designated areas for snow storage from both street and trail snow removal should be incorporated into the design and implementation of the trail facility.

Mowing and Tree Care

Mowing adjacent turf areas will continue to be completed routinely by residents. Tree pruning in the right-of-way will continue to be completed by Parks and Recreation Forestry Division. A tree inventory and preservation plan should be included during the design phase. Future projects should limit removals of healthy trees within the corridor and plan for special accommodations for trees during and after construction.

Probable Maintenance Costs

Task	Annual Cost
Plow Snow (<5", 2 passes)	\$xxx,xxx
Broom Winter (2 passes)	\$xxx,xxx
Sand/salt path	\$xxx,xxx
Mow grass (2 passes)	\$xxx,xxx
Broom Summer	\$xxx,xxx
Pick Litter	\$xxx,xxx
Empty Trash	\$xxx,xxx
Brush Back	\$xxx,xxx
Site Furnishings	\$xxx,xxx
Patching	\$xxx,xxx
Annual Total	\$xxx,xxx

Natural Resources and Stewardship Plan

The Summit Avenue corridor is situated in a unique environment - adjacent to Saint Paul's downtown core, but defined by the greenspace and mature tree canopy that provide a natural, park-like feel. The stewardship plan for this regional trail prioritizes preservation of these special natural features, and an approach for the future that maintains and enhances the park-like character of the parkway while also accommodating recreational features.

Stewardship Guiding Principles:

- *Preservation*
- *Recreation*
- *Plan For Future Trail Users*



Natural Resources and Stewardship Plan

Tree Preservation Strategies and Forestry Best Practices

The mature tree canopy is one of the most important features of this corridor. As a regional trail facility, preserving this tree canopy is a top priority and a major consideration in the planning and implementation of the facility. The master plan does not provide preservation strategies for each individual tree along the corridor, but rather provides guidance for future project implementation and a corridor-wide vision. Guiding principles and strategies are listed below:

- To the extent possible, retaining the existing curb line on Summit Avenue will have the best outcome for long term tree health
- The existing tree canopy of Summit Avenue has a variety of tree species. Selection of new plantings should continue to prioritize species diversity.
- Construction impacts vary depending on tree species. As the master plan is implemented through construction, forestry should be consulted and should inform design in a way that limits negative impacts to existing trees as much as possible.
- Factors that may influence trail placement based on existing trees include health of existing trees, existing grades at boulevards and medians, and overall root space and distance between curb and trunk.

- As part of the implementation, consider including new trees in the right-of-way and work with Forestry to include in future plans.

Watersheds and Wetlands

Several different sub-watershed intersect with the Summit Avenue Regional Trail corridor, all part of the larger Capitol Region Watershed District. The proposed trail route does not impact any delineated wetlands in the region. See regional map below showing regional watersheds and delineated wetlands.

Stormwater Management

The Minnesota Pollution Control Agency identified several best management practices for stormwater management including flow controls, vegetation stabilization, bioengineering, structural stabilization, rip-rap stabilization, and filtration practices. Where necessary, as each segment of the regional trail is designed, stormwater management will be an integral part of the planning and implementation for the new facility. Future projects will adhere to requirements of the MN Pollution Control Agency, the City of Saint Paul, the MRCCA, and other specific governing bodies related to the project.

Legend

- Watershed Boundary
- ▒ Delineated wetland



Fig. 5-2 | Regional Wetlands and Watersheds

Public Services

Wayfinding and Signage

Wayfinding and signage is an integral part of implementing a cohesive and usable trail facility. Signage to indicate directions and wayfinding, culture and history, connections to transit, and connections to greenspace should be considered for the trail facility. Chapter 4 of this master plan details a wayfinding strategy for the trail corridor.

Bicycle Amenities

Through engagement, community members have expressed a desire for more bicycle-oriented facilities. Bike racks and public bike repair stations should be implemented at appropriate intervals along the trail, particularly at the intersections of other trails or bikeways, and at public green spaces along Summit Avenue. Other amenities including restrooms, drinking fountains, and site furnishings should also be considered at these high use areas.

Pedestrian Lighting

To augment the existing roadway and pedestrian lighting on Summit Avenue, additional lighting for the trail facility should be implemented where necessary. Existing lighting should be inventoried during the design phase to inform additional trail light locations.

Utilities

Utilities currently exist within the Summit Avenue corridor to serve the adjacent community. Additional utility needs will be determined during the design process.

Roadway Repairs

Several segments of the existing Summit Avenue corridors are in need of pavement repairs. Timing the construction of these projects with the implementation of the regional trail facility would be beneficial to both the road and trail projects, as well as neighbors and users of the corridor. These repairs will be a coordinated effort between Saint Paul Public Works and Parks and Recreation.

DRAFT
PROGRESS

Public Awareness

City of Saint Paul

As part of the community engagement plan, the Summit Avenue Regional Trail gained public awareness via social media and the project engagement website. Once complete, the trail will be promoted through City web pages, social media and other trail related publications available at park facilities. A grand opening will be considered to celebrate and publicize the new regional trail.

Adjacent Trail Facilities

Summit Avenue intersects with many existing bike and pedestrian trails, as well as parks including Mississippi River Blvd trail, the Ayd Mill Rd trail and Short Line Park, Summit Overlook Park, Cochran Park, Nathan Hale Park, Cathedral Hill Park, the proposed Capitol City Bikeway segment on Kellogg Blvd, Upper Landing Park, and Sam Morgan Trail. All of these public amenities and greenspaces provide an opportunity for signage to alert the public of the regional trail facility along Summit Avenue.

Notices are posted to the facilities website if park or trail closures occur. Occasionally, the trail facility may be closed for planned events. Trail users can also subscribe to receive updates through the City of Saint Paul Parks and Recreation website.





Appendix

Project References

Metropolitan Council
<https://metro council.org/>

Regional Parks and Trails Equity Tool
<https://metrotransitm n.shinyapps.io/regional-parks-equity-tool/>

Regional Park System Visitation Report
<https://metro council.org/Parks/Publications-And-Resources/PARK-USE-REPORTS/Annual-Use-Estimates/PlayFeatures-Visits-to-the-Regional-Park-System-in.aspx>

Summit Hill Association
<https://www.summithillassociation.org/history>

Visit St. Paul
<https://www.visitsaintpaul.com/blog/summit-avenue-history-the-story-of-saint-pauls-famous-street/>

Minnesota Historical Society
<https://www.mnhs.org/>
James J. Hill House
<https://www.mnhs.org/hillhouse/learn/house>

National Association of City Transportation Officials
<https://nacto.org/>

Saint Paul 2040 Comprehensive Plan
https://www.stpaul.gov/sites/default/files/2022-01/CSP_2040_CompPlan_FinalAdopted_101521.pdf

Saint Paul Bicycle Plan (2015)
<https://www.stpaul.gov/sites/default/files/Media%20Root/Public%20Works/Saint%20Paul%20Bicycle%20Plan.pdf>

2021 Minnesota Statutes (MRCCA)
<https://www.revisor.mn.gov/statutes/2021/cite/116G.15/subd/116G.15.8#stat.116G.15.8>

Minnesota Administrative Rules
<https://www.revisor.mn.gov/rules/6106.0130/>

University of Minnesota | Mapping Prejudice
<https://mappingprejudice.umn.edu/>

NPR | Racial covenants, a relic of the past, are still on the books across the country
<https://www.npr.org/2021/11/17/1049052531/racial-covenants-housing-discrimination>

Mapping Inequality | Redlining in New Deal America
<https://dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58&text=intro>

NOTE: Document re-posted on 11/03/2022 to correct pixelated graphics in the Appendix.

Technical Memorandums

Technical Memorandum #1



Real People. Real Solutions.

111 Washington Avenue S
Suite 650
Minneapolis, MN 55401

Ph: (612) 416-0220
Fax: (612) 416-0222
Bolton-Menk.com

TECHNICAL MEMORANDUM #1

DRAFT
PROGRESS

Date: January 7, 2022
To: Mary Norton, PLA
From: Cody Christianson, P.E. and Madeline Dahlheimer, PLA
Subject: Summit Avenue Regional Trail Master Plan
City of St. Paul
BMI Project No.: 0L1.126160

This technical memo summarizes our initial findings related to existing conditions, applicable best-practices and precedents, and potential trail alternatives for **Segments A-F** of the Summit Avenue Regional Trail.

Segment G: Segment G will be analyzed and concepts explored once we have refined alternatives for the remainder of the trail. Currently, our assumption is that the Summit Avenue Regional Trail alignment will follow the Capital City Bikeway alignment and proposed facilities along Kellogg Boulevard and our task with this master plan will primarily be to address the intersections of Summit Ave/Kellogg Blvd and Kellogg Blvd/7th St.



Figure 1: Corridor Segments

H:\STPL\0L1126160\2_Preliminary\C_Reports\Tech Memos\126160 Summit Ave Regional Trail_Tech Memo 1 DRAFT.docx

Bolton & Menk is an equal opportunity employer.

Existing Conditions

Roadway Characteristics

In order to better understand the trail corridor and efficiently explore alignment alternatives, we have identified typical sections, intersection types, and transitions by segment. Necessary deviations from these typical treatments will be identified as we refine potential trail alignments.

Typical Sections

The following three typical sections are present in segments A through F:

Typical Sections:	Segment:					
	A	B	C	D	E	F
200-foot ROW with single median						
200-foot ROW with double median						
100-foot ROW without median						

Table 1: Typical Sections by Segment

Segments D, E, and F vary in their sidewalk width. All three segments include approximately 26-feet behind the back of curb. Segment D includes a 6-foot sidewalk; the sidewalks in Segment E vary from six- to eight-feet; and Segment F includes a 10' sidewalk.

Figure 2: Typical Section, Segments A and C

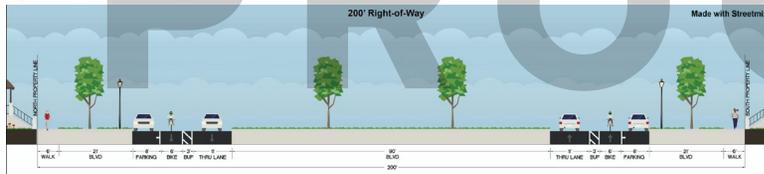


Figure 3: Typical Section, Segment B

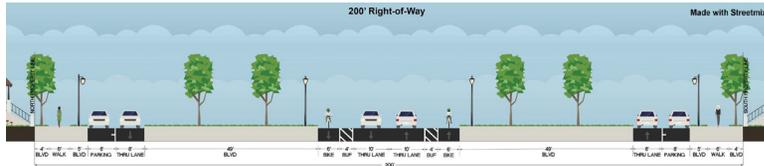
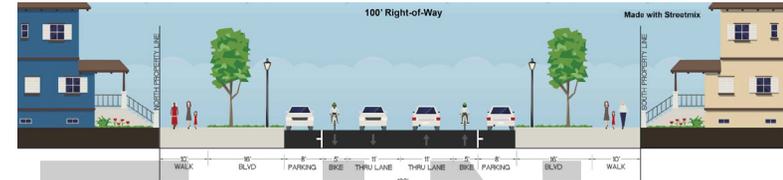


Figure 4: Typical Section, Segments D, E, and F



Intersection Types

There are 48 roads intersecting the identified trail corridor between Mississippi River Boulevard and Kellogg Boulevard (segments A through F, 4.7 miles). Of these 48 intersections, **45 are full access** and **3 are reduced access** (S Wheeler St, Aldine St, Cambridge St). The dominant traffic controls at intersections are side street stops and signalized intersections. Intersections are spaced anywhere from approximately 350- to 900-feet apart. Intersection spacing is more regular, at around 650-feet, east of Snelling Avenue.

All segments – and sections - include both of these intersection types creating six “typical” intersections.

- Traffic signal at single median
- Side-street stop at single median
- Traffic signal at double median
- Side-street stop at double median
- Traffic signal without median
- Side-street stop without median

Two intersections fall outside of these intersection types. The intersection with Mississippi River Boulevard has side street stops on Summit and there is an all-way stop at the intersection with Ramsey Street.

The implications of intersection types will become more apparent as we narrow down feasible trail alignments.

Transition Types

The transitions between typical sections will require additional attention and exploration of how to best design the regional trail to ensure a consistent alignment, user-friendly wayfinding, and safe & comfortable crossings at roadways. The three transitions and their locations are listed below. All transitions occur at signalized intersections:

- Fairview Avenue - single to double median
- Hamline Avenue - double to single median
- Lexington Parkway - single median to no median

Atypical Areas

There are several sections and points in the corridor which are atypical and do not align with the previous descriptions. The Ayd Mill Road bridge is the primary atypical component in segments A through F. Segment G may also be considered atypical as its character and roadway characteristics differ considerably from Summit Avenue.

Trail alignment and design alternatives for these areas will be explored as we refine how the trail will be integrated in the more typical segments. This will provide a clearer understanding of what we are tying into and how to respond to the restraints of the atypical areas.

Site Evaluation**Corridor Context**

Summit Avenue is one of the most iconic public spaces in the Twin Cities with national recognition. Incorporating a regional trail connection between the Mississippi River to Downtown Saint Paul through this historic corridor requires careful consideration and sensitivity of the corridor context to create a value-adding amenity.

Corridor History

The historical significance of Summit Avenue cannot be overlooked. The historic architecture, the wide medians, and the mature tree canopy are a big part of what makes this corridor unique. The project team will coordinate with the applicable historic preservation agencies to identify design and alignment alternatives that will not detract from this special character.

The following historic districts overlay Summit Avenue. The implications of these designations will be explored as part of a future technical memo:

- **National Register of Historic Places** (National Park Service - NPS)
 - West Summit Avenue Historic District: Summit Avenue between Lexington Parkway and Mississippi River Boulevard (Segments A-C).
 - Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Lexington Parkway to the intersection with Dayton Avenue (Segments D-F).
- **State Historic District** (State Historic Preservation Office - SHPO)
 - Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Ayd Mill Road to the intersection with Marshall Avenue (Segments C-F).
- **Local Historic Districts** (City of Saint Paul Historic Preservation)
 - West Summit Avenue Historic District: Summit Avenue between Lexington Parkway and Mississippi River Boulevard (Segments A-C). *The extents of the local and national districts vary slightly, but include the same corridor segments as part of this trail master plan.*

- Historic Hill District: This district extends past Summit Avenue, but includes the corridor from Lexington Parkway to the intersection with Dayton Avenue (Segments D-F).
- Historic Sites: Historic sites along the corridor have been identified on **Figures 6-12** and include:
 - Dr. Ward Beebe House, 2022 Summit Avenue (*local and nationally listed*)
 - Pierce and Walter Butler House, 1345 - 1347 Summit Avenue (*local and nationally listed*)
 - Irvine, Horace Hill, and Clotilde House (Governor's House), 1006 Summit Avenue (*local and nationally listed*)
 - F. Scott Fitzgerald House (Summit Terrace), 587-601 Summit Avenue (*Local, State, and Nationally Listed*)
 - Burbank-Livingstone-Griggs House (James C. Burbank House), 432 Summit Avenue (*Local, State, and Nationally Listed*)
 - James J. Hill House, 240 Summit Avenue (*Local, State, and Nationally Listed*)
 - St. Paul Cathedral-Catholic, 239 Selby Avenue/225 Summit Avenue (*Nationally Listed*)

Land Use

Figures 6-12 identify government, education, and religious institutions along the corridor as well as commercial businesses. The primary land use along the corridor is single family homes; locations of multi-family housing have been identified on the figures.

Grand Avenue parallels Summit and includes a high concentration of commercial businesses and restaurants at the intersections with Cambridge Street (Segment B), Snelling Avenue (Segment B), and from the intersection of Ayd Mill Road to Dale Street (Segment C-E). A grocery store is at the intersection with Syndicate Street (Segment C). These commercial concentrations may have impacts on the demands within the right-of-way on Summit due to their proximity. These areas will be further explored as part of parking demand evaluation on the corridor.

Integrating Systems

The existing transit routes and stations, and bikeways have also been identified on the above referenced figures. It will be important as we begin to identify a preferred trail alignment that we consider connections to existing multi-modal transportation networks and facilities.

Property Impacts

Impacts to private property are not anticipated to be necessary to identify a trail alignment and design along Summit Avenue. The 100- and 200- foot right-of-way and existing parkway character are expected to provide sufficient space for a trail to be sited within the existing corridor section.

Should property impacts be identified, they are anticipated to be temporary in the form of easements for construction. Specific private property elements which may be impacted depending on the preferred design include:

- Existing stairs and retaining walls

- Trees on private property (with critical root zones near the ROW)
- Planting beds

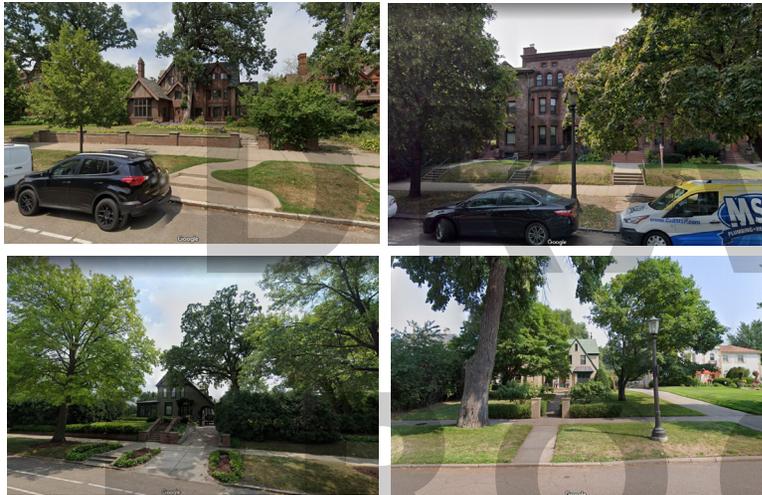


Figure 5: Retaining walls, concrete stairs, and planting beds about the right-of-way along Summit Avenue

Vegetation

The mature tree canopy along Summit Avenue is highly valued by the community and visitors alike. Plantings in the boulevards and medians create the parkway character which invites a regional trail facility along this corridor. Impacts to vegetation will be considered as part of trail alignment alternatives.

The following information was provided to the design team by the City Forester regarding trees along Summit Avenue:

Preservation / Protection of Trees:

- City Code Chapter 176 applies, no overlays beyond Heritage Preservation District language
- 2010 Park and Street Tree Master Plan is latest version approved as a reference for approach to Street Trees
- “Landmark trees” notable by nomination as significant trees, not protected formally or beyond that recognition

Design and Mitigation of Impacts:

- Critical and Structural root zones are starting points for evaluation; species comes into play as well, as to how a tree would be impacted
- Structural root zone: Once you begin damaging that there is more potential for failure of the tree; typically, within 8-10 feet of the trunk
- Zones of impact can be clipped at curb, generally speaking significant roots are not found beyond these existing paved areas.
- Best practices to mitigate impacts in structural root zone:
 - Minimize excavation
 - Air-space roots to evaluate field design and work around plant and get materials in (labor intensive)
 - City standard tree-protection details to be utilized
- Evaluate trees on private property within 10’ of the back of sidewalks. These may be impacted or require further evaluation during construction to minimize impacts.

Ash Trees: The general approach for removal is a three-year planned process or as part of active construction projects: year 1 – removal; year 2 – stump removal; year 3 – re-planting

Summit Avenue ash tree removals typically occur January to July. Trees have been removed between Fairview Avenue and Dewey Street. Summit Avenue west (Mississippi River Boulevard to Arundel Street) is planned for removals starting in winter 2021. Summit Avenue east (Arundel Street to Kellogg Boulevard) is planned for removals starting in 2023.

Multimodal Travel Volumes

The City of Saint Paul’s Department of Public Works has conducted annual bicyclist and pedestrian counts since 2013. These counts take place mid-week in September during peak hours (4-6 p.m.). Benchmark locations are used each year to measure annual changes in non-motorized traffic. Typically, 30 benchmark sites for bicyclist traffic and 25 benchmark sites for pedestrian traffic have been counted since 2013. The number of locations counted is dependent on the number of participating volunteers who manually tabulate the counts. In 2019, 21 benchmark sites were counted for bicyclist traffic and 13 benchmark sites were counted for pedestrian traffic.

In the 2019 bicyclist and pedestrian counts, Summit Avenue (east of Fairview Ave) had the second highest bicycle counts, and three of the top five top walking counts (east of Cleveland Ave, east of Fairview Ave, and east of Western Ave).

Bicycle:

- Summit Avenue (east of Fairview Ave) had 252 bicyclist counts in 2019, an average of 239 (2013-2019), a 6% drop from 2013-2019, and a 20% increase from 2018-2019.
- Summit Avenue (east of Dale St) had 126 bicyclist counts in 2018, an average of 135 (2013-2018), and a 25% drop from 2013-2018.
- Summit Avenue (east of Cleveland Ave) had 121 bicyclist counts in 2019, an average of 180 (2017-2019), and a 46% drop from 2017-2019.

- Summit Avenue (east of Western Ave) had 78 bicyclist counts in 2019, an average of 112 (2013-2019), and a 37% drop from 2013-2019.

Pedestrian:

- Summit Avenue (east of Fairview Ave) had 180 pedestrian counts in 2019, an average of 239 (2013-2019), a 6% drop from 2013-2019, and a 20% increase from 2018-2019.
- Summit Avenue (east of Dale St) had 143 pedestrian counts in 2018, an average of 171 (2013-2019), and a 16% drop from 2013-2018.
- Summit Avenue (east of Cleveland Ave) had 228 pedestrian counts in 2019, an average of 256 (2017-2019), and a 22% drop from 2017-2019.
- Summit Avenue (east of Western Ave) had 171 pedestrian counts in 2019, an average of 135 (2013-2019), and an 8% increase from 2013-2019.

Vehicular: Annual average daily traffic volumes on Summit Avenue are 7,000-8,400 west of Lexington Avenue, 11,200 from Lexington Avenue to Ramsey Street, and 3,900 from Ramsey Street to John Ireland Boulevard. 2040 Forecasted volumes remain the same. Snelling Avenue, Lexington Avenue, and Kellogg Boulevard have the highest traffic volumes of the cross streets in the trail corridor at 17,000-28,000 AADT. (Source: MnDOT Traffic Counts)

Traffic Considerations

Traffic and intersection impacts will be evaluated as we identify feasible trail alternatives and alignments. Intersections which are more complex – for example, at transition points, with higher traffic volumes, or with a high number of conflict points – will be evaluated with potential trail facilities to identify design solutions that support the multi-modal nature of the corridor.

Parking

Figures 13-19 inventory the existing parking conditions along the trail corridor. Parallel, on-street parking is consistent along Summit Avenue with variations in restrictions (permit requirements, hours, etc.). There is no on-street parking along Kellogg Avenue or Eagle Parkway (Segment G).

Further data is required to identify utilization level and implications to potential regional trail alignments. Utilization of on-street parking will be especially important from Lexington Avenue to Kellogg Boulevard (Segments D-F) where the 100-foot right-of-way adds limitations to where a trail facility can be constructed.

Regional Trail Facility Guidance

Previous Planning Documents

Existing planning documents adopted by the City provide parameters on how the Summit Avenue Regional Trail fits into the larger vision for the City.

2040 Comprehensive Plan

Celebrating Parks is one of the **core values** shaping the comprehensive plan for the City. Summit Avenue with its wide vegetated medians is characterized by many as a linear park. The alignment and design elements of the regional trail will support this character and use.

Community/Public Health is listed as a **focus area** of the comprehensive plan. The existing corridor serves as both an active transportation and recreation corridor enabling people to meet their daily

physical activity needs. Enhancing this aspect with the regional trail will expand this function of the corridor and the geographic reach of the recreational user. Implementation of the bike and pedestrian plans (outlined below) are included with the draft policy (policy # T-24 and T-25) to support community health for all.

Summit Avenue is identified as a major collector with an existing on-road bikeway. Additionally, it has been identified as a Regional Bicycle Transportation Network (RBTN) Tier 2 Corridor.

Regional Bicycle Transportation Network (RBTN)

The goals of the RBTN include establishing an arterial network of on-street bikeways and off-road trails throughout the metro area to accommodate bicycle trips connecting regional destinations.

Tier 1 and Tier 2 priority corridors are identified based on where they can most effectively promote active transportation mode choices (biking, walking, transit) and where supporting travel demand exists.

The *Transportation* chapter identifies the following goals. We have included notes on the subsequent policies which are applicable to this master planning process.

- Investment that reflects the City's priorities.
 - T-3: Design per the following modal hierarchy: pedestrians, bicyclists, transit, other vehicles
- Safety and accessibility for all users.
 - T-7: Implement intersection safety improvements such as...pedestrian countdown timers, and leading pedestrian signal intervals...and other elements to lower motor vehicle speeds
 - T-10: Design sidewalks, trails, and transit stops for personal safety (real and perceived)...
 - T-13: When street design changes involve the potential loss of on-street parking spaces, prioritize safety for all transportation modes. Explore mitigation of lost spaces where feasible and practical.
- A transportation system that supports access to employment and economic opportunity.
- True transportation choice throughout the city, with a shift from single-occupant vehicles toward other modes.
 - T-24: Implement the Bicycle Plan
 - T-25: Implement the Pedestrian Plan
- Sustainable and equitable maintenance models.
- Environmentally-sustainable design.
- Functional and attractive Parkways.
 - T-41: Maximize space for recreation and landscaping uses within Parkway rights-of-way, and prioritize recreation and landscaping in Parkway design in order to maintain a park-like feel, particularly on the Grand Round.
- A system that responds to technology and shapes its implementation

The *Parks, Recreation, and Open Space* chapter identifies the following goals. We have included notes on the subsequent policies which are applicable to this master planning process.

- Equitable allocation of programs, resources and amenities.
- People, programming and spaces responsive to changing needs.

- PR-9: Use customer and resident feedback on needs, satisfaction and trends to improve park experience, advance equity and bring in new users
- 3. Environmental and economic sustainability.
 - PR-19: Improve the environmental sustainability and resiliency of parks through strategies such as shared, stacked-function green infrastructure; best management practices in stormwater management; increased tree canopy; increased plant diversity and pollinator-friendly plantings
- 4. A healthy network of community partnerships.
- 5. Strong and accessible connections.
 - PR-35: Prioritize safety and equity when filling gaps in the trail and bikeway system to ensure seamless connections throughout the city for pedestrians and bicyclists of all ages and abilities.
 - PR-36: Integrate parkways and trails with the city's broader transportation network to provide convenient and safe access to the park system.
 - PR-38: Improve and encourage pedestrian and bicycle connections between park facilities and other significant destinations, such as lakes and rivers, schools, transit facilities and Neighborhood Nodes.
 - PR-39: Emphasize safety, convenience and comfort when designing new trails or rebuilding those that already exist.
 - PR-40: Provide interpretive elements to educate users about unique aspects of the park system
 - PR-41: Provide consistent wayfinding signage in each project or park so that it is recognizable as part of the broader City system.
 - PR-44: Support facility improvements that better connect neighborhoods to the Mississippi River

2015 Bicycle Plan*

Summit Avenue is identified in the 2015 Bicycle Plan as a major bikeway with planned in-street facilities (bike lanes, buffered bike lanes, one-way cycle tracks, or two-way cycle tracks).

The bicycle plan references the Metropolitan Council's guidance on regional trails as facilities for recreational travel along linear pathways for bicyclists, pedestrians, and other users throughout the metropolitan area. In urban areas such as Saint Paul, the regional trail network also plays an important function for transportation bicycling and often forms the backbone of the bicycle transportation network. Regional trail facilities are often developed along natural or linear features, which can limit the number of intersections, greatly enhancing safety and comfort for trail users.

The Saint Paul Bicycle Plan identifies the existing regional trails and other linear trails that pass through regional parks, as well as planned regional trails and regional trail search corridors. The regional trail search corridors include Summit Avenue. The Metropolitan Council requires the city to prepare a master plan document for all planned regional trails. Regional trail search corridors are defined by the Metropolitan Council in the Parks Policy Plan.

Action Item 6.5.1: *Actively pursue designation and development of additional regional trails... Identify regional trail alignments within the regional trail search corridors and prepare regional trail master plans for trails where alignments are known.*

**Saint Paul is currently working on an update to the bicycle plan.*

2019 Pedestrian Plan

The Saint Paul Pedestrian Plan addresses citywide walking needs such as connecting the sidewalk system, providing safer ways to cross streets and education and enforcement programs to support safe walking. It includes recommendations to achieve the plan's vision: ***Saint Paul is a walking city—we are more healthy, resilient and connected when walking is safe and appealing for all.***

Saint Paul community members have identified three priorities for making walking safer and easier:

- Crossing busy streets
- Filling sidewalk gaps
- Improving snow and ice removal

Summit Avenue from Hamline Avenue to Lexington Parkway and from St Albans Street to John Ireland Boulevard are identified as medium priorities based on census tracts for sidewalk investment. There are no priority segments of Summit Avenue identified as sidewalk gaps.

The following actions are included in the Saint Paul Pedestrian Plan to improve pedestrian safety and comfort at busy street crossings.

- 1-1. Plan, design, build and maintain the city's transportation system in a way that prioritizes walking first, followed by bicycling and transit use and lastly other vehicles.
- 1-2. Advocate for a statewide reduction in urban speed limits as part of the city's legislative agenda.
- 1-3. Follow best practices for marking crosswalks. Convert crosswalks marked with parallel bars to high-visibility crossings to improve visibility of crosswalks. Whenever possible, use durable crosswalk marking materials.
- 1-4. Ensure visibility of pedestrian crossings. Review street lighting, sign placement, street furniture, bus shelters, foliage growth, and parking restrictions at intersections as part of all reconstruction projects and requests for crossing improvements.
- 1-5. Establish a consistent process for reviewing, improving and prioritizing pedestrian crossings. Review and update policies as necessary to incorporate best practices and national guidelines. Apply these policies to all projects and requests that include crossing improvements.
- 1-6. Reduce pedestrians' exposure to motor vehicles and lower street design speeds. Pursue changes in street designs that lower design speeds and reduce roadway crossing widths.
- 1-7. Coordinate with transit providers and the Saint Paul Bicycle Plan to ensure pedestrian solutions complement bicycling and transit needs.
- 1-8. Develop a program to proactively implement infrastructure improvements in high crash risk locations. Conduct a Pedestrian Systemic Safety Analysis to identify the highest risk locations for pedestrian crashes. Develop a prioritized list of candidate pedestrian safety improvements on high-risk streets and a five-year plan for implementation.
- 1-9. Dedicate additional funding to improve pedestrian crossings in conformance with best practices and support on-going maintenance of these treatments.
- 1-10. Provide regular crossing opportunities on collector and arterial streets, prioritizing streets in High Priority Areas for Walking Investments.

1-11. Work with partners to support safe walking environments through initiatives like Crime Prevention through Environmental Design, lighting improvements, neighborhood walks, and trash cleanup.

1-12. Identify resources to improve on-going maintenance of existing crossing facilities, including snow and ice removal at crossings, crosswalk markings and replacement of flexible traffic posts in temporary crossing improvements.

2-1. Design streets in accordance with Saint Paul’s Street Design Manual to promote a comfortable walking environment on all street types in Saint Paul.

3-1. Pursue opportunities to install and maintain interim pedestrian crossing improvements using low-cost materials.

3-2. Review and update the Saint Paul Department of Public Works Temporary Pedestrian Access Route (TPAR) policy (originally adopted 2014) to define requirements for TPAR implementation and mandate use of best practices identified by Public Right-of-Way Accessibility Guidelines. Proactively inspect TPARs and enforce contractor compliance with city policy.

3-3. Maximize impact of capital projects through coordination with partner jurisdictions such as Ramsey County, MnDOT and Metro Transit. Define internal structure for managing external partnerships and identifying opportunities to maximize use of resources during capital projects

Metropolitan Council Regional Parks Policy Plan

The Summit Avenue Regional Trail has been designated as a regional trail search corridor in the Metropolitan Council’s 2040 regional Parks Policy Plan. As outlined in this document, regional trails:

- serve the entire metropolitan region
- are developed for one or more varying modes of nonmotorized recreational travel
- are a sufficient length to serve as a link between two or more regional parks
- connects public interest destinations
- serves as backbone to local trail network, with regional trail functioning much like regional highway
- include sufficient corridor width to protect natural resources
- are off-road facilities; on-road trails are acceptable when off-road trails are not feasible
- should not duplicate an existing trail
- should be placed where the trail treadway will have no adverse impact on the natural resource base

Regional trails are categorized further into Destination Trails and Linking Trails. These facilities meet all of the above characteristics and are distinct in that:

- **Regional Destination Trails or Greenways** are a sufficient length and highly scenic to be considered standalone destinations. They are preferably adjacent to high quality natural

areas. Destination trails are visually separated from the road system (more than 50% off-road)

- **Regional Linking Trails:** when feasible, should attempt to connect to population, economic and social centers along its route. May be on-road separated facilities.

Industry Best-Practices

The following table outlines current best practices for bicycle facilities based on traffic volumes. Based on the existing annual average daily traffic counts on Summit, the majority of the corridor falls into the > 6500 vpd category. The segment from Ramsey Street to John Ireland Boulevard is a 3,900 vpd.

Roadway Traffic Volume	Posted Roadway Speed	Recommended Facility Type		
		FHWA Bikeway Selection Guide	MnDOT Bicycle Facility Design Manual	NACTO Designing for All Ages & Abilities
< 3000	25-30 mph	Shared Roadway or Bike Boulevard	Shared Roadway or Bike Boulevard	Bike Boulevard (<25 mph)
3000 – 6500	25-30 mph	Bike Lane (Buffer Pref.)	Bike Lane (Buffer Pref.)	Bike Lane (<6000 AADT and <25mph)
> 6500	25-30 mph	Separated Bike Lane or Sidepath	Separated Bike Lane or Sidepath	Separated Bike Lane or Sidepath

Table 2: Industry Best-Practices

Outstanding Items

Coordination items or clarifications needed in order to complete this master plan as of the submittal of this technical memo are listed below:

- Emergency services – minimum roadway width requirements
- Metropolitan Council – trail design requirements (materials, minimum design standards, and modal separation allowances)
- Historic Preservation – trail integration requirements or preferences



111 Washington Avenue S
Suite 650
Minneapolis, MN 55401
Ph: (612) 416-0220
Fax: (612) 416-0222
Bolton-Menk.com

TECHNICAL MEMORANDUM #2

DRAFT
PROGRESS

Date: January 28, 2022
To: Mary Norton, PLA
From: Cody Christianson, P.E. and Madeline Dahlheimer, PLA
Subject: Summit Avenue Regional Trail Master Plan
City of St. Paul
BMI Project No.: 0T4.126438

The goal of this technical memo is to summarize and centralize information from several discussions that have occurred over the past month related to design parameters and begin to explore potential alignments and characteristics of the regional trail.

Agency Coordination

The project team has connected with several agency stakeholders to discuss the design characteristics of the regional trail along Summit. As the interests in this corridor are wide and varied, it is our hope that these discussions will aid in setting design parameters from which we can begin to identify and evaluate feasible alternatives.

The following section summarizes primary takeaways from these meetings. It is important to note that the project team will need to further evaluate some of the agency positions to establish what is considered guidance or preference versus what is considered to be a mandatory requirement and any potential mitigation measures that may be necessary.

Parks and Public Works Operations & Maintenance – November 30, 2021

Participants: Karin Misiewicz, Nick Fadden (Parks O&M); Beverly Farraher, Matt Morreim (PW O&M); Mary Norton, Brett Hussong, Katie Hamerlinck (City Parks)

Discussion Takeaways:

- Maintenance division between departments
 - Parks - medians, boulevards, greenspace, and trail facility
 - Public Works – roadway, lighting, drainage
 - Property owners – snow removal along sidewalks
- Avoid impacts to corridor retaining walls – historically difficult to identify who owns
- Pervious pavement requires additional maintenance and resources
- No additional/new equipment is anticipated in either department – level of service expectations would be best if facility is compatible with existing equipment

H:\STPL\074126438\2_Preliminary\C_Reports\Tech Memos\126438 Summit Ave Regional Trail_Tech Memo 2.docx
Bolton & Menk is an equal opportunity employer.

Planning and Economic Development (PED) – January 2, 2022

Participants: Emma Siegworth (PED); Barb Mundahl, Reuben Collins (City Engineering); Brett Hussong, Katie Hamerlinck (City Parks)

Discussion Takeaways:

- Selective removal of parking may have success – removal on both sides as non-starter
 - Citywide policies/guidance supporting pedestrians and multi-modal access priorities over parking
- Goal is to make bicycling and pedestrian travel safer as a priority
- More confident riders will continue to use the street, regardless of off-trail facilities
- Summit Hill District revised neighborhood plan (in progress)
 - More bicycle and pedestrian friendly access, improve safety (separated lanes, off-street paths)

State Historic Preservation Office (SHPO) & Heritage Preservation Commission (HPC) – January 6, 2022

Participants: Sarah Beimers (SHPO); George Gause (HPC Staff); Brett Hussong, Katie Hamerlinck, Barb Mundahl (City Staff)

Discussion Takeaways:

- Important to understand the historic nomination that currently exists, Historic Hill designation 1976 and West Summit Ave. Historic District designation 1993.
 - Recommend a preliminary study to evaluate what is the historic integrity of the corridor in the context of these historic districts.
 - Identify design strategies which would be considered to have an “adverse effect”
- SHPO and HPC have advisory role during planning; established processes to follow with implementation

Metropolitan Council – January 7, 2022

Participants: Tracey Kinney, Chee Yang (Met Council); Brett Hussong, Katie Hamerlinck, Barb Mundahl, Reuben Collins (City Staff)

Discussion Takeaways:

- Goal to identify community preferences through engagement
- Corridor constraints should be communicated related to design decisions
 - Trail may be separated or adjacent to curb
 - Maintain on-street bike lanes as part of trail if ROW or other constraints limit other alternatives
- Consider regional trail from edge of cycle track (curb) to edge of pedestrian realm (homes) – regional trails often include natural environment (boulevard) in corridor
 - Clarify and understand maintenance implications of greenspace between facilities in this scenario. Boulevards are currently maintained by homeowners.
- Combining existing 6’ sidewalks and new 12’ cycle track as regional trail facility may require additional wayfinding/placemaking to communicate trail status (signage as example)
- Aggregate surface acceptable if desire of community
- Excerpt from Thrive MSP Regional Linking Trail description (Table 3-1):

- *When feasible, linking trails should attempt to connect to population, economic, and social centers along its route*
- *The trail treadway should be placed where it will have no adverse impact to the natural resource base*

Department of Safety and Inspections – January 14, 2022

Participants (email correspondence): Ann Blaser (DSI); Mary Norton (City Parks)

Discussion Takeaways:

- 20-feet is the minimum roadway width to maintain emergency access
- The 20-foot requirement does not need to determine what the lane use are (drive lane, parking, bike lane, etc.)

Bolton & Menk (BMI) Cultural Resources – January 18, 2022

Participants: Renee Barnes, Scott McBride (BMI); Mary Norton (City Parks)

Discussion Takeaways:

- NRHP Nomination for West Summit Historic district calls out medians as contributing element; width and plantings also discussed
 - Hill district includes same general characteristics
- Asphalt trail down center of median may be considered an adverse effect
- Design approaches which improve safety may supersede historic preservation requirements
- Commercial nodes and residential areas may have different considerations/standards
- *BMI to provide scope for corridor historical analysis*

Mississippi River Corridor Critical Area (MRCCA)

The Mississippi River Corridor Critical Area program provides coordinated land use planning and regulations surrounding the Mississippi River as it winds through the seven-county metropolitan area. The development of local government plans and ordinances is required by state statute. **The west and east termini of the Summit Avenue Regional Trail cross into this critical area.**

The required MRCCA chapter in City’s Comprehensive Plan includes the following guidance on *Open Space & Recreational Facilities*:

Policy CA-35. Maintain and expand public access to the river’s edge.

Policy CA-36. Maintain and expand open space and recreational facilities along the river, connect them with one another as part of the Great River Passage, and connect them to adjacent neighborhoods.

Policy CA-38. Encourage the creation, connection and maintenance of open space, recreational facilities and other public connections to the Mississippi River.

The addition of a regional trail facility is not anticipated to create conflict with goals and guidance of the MRCCA program.

Corridor Vision, Goals, & Objectives

A draft corridor vision and objectives for the regional trail have been developed by the project team after review of the public engagement conducted by the City of St. Paul through the Engage Saint Paul online platform.

The following vision, goals and objectives will be refined following upcoming Technical Advisory Committee (TAC) and Design Advisory Committee (DAC) meetings where the vision for the trail will be discussed. Feedback from these meetings will be used to finalize these guiding statements and assist in identifying priorities and evaluation measures.

Draft Vision

The Summit Avenue Regional Trail offers a high-quality recreational experience celebrating the past and present along with the natural and built environments. The trail provides regional and local connections serving a broad range of users.

Goals

- Identify a regional trail alignment on Summit Ave. to improve recreation experience and safety for all users
- Identify ways to balance the context of Summit Ave. when modernizing infrastructure
- Improve connectivity and public access to open space
- Support the evolving needs of users to create a more resilient, people-oriented corridor

Objectives

1. Identify design strategies to improve safety and comfort
2. Serve all ages and abilities with trail facility design
3. Protect vegetation where possible to maintain the natural context and parkway character of the corridor
4. Identify a trail facility design and alignment compatible with the historic context
5. Identify infrastructure compatible with available or attainable maintenance practices
6. Align trail improvements with available funding opportunities and coordinated capital improvement projects

Corridor Analysis

Evaluating land uses along the corridor and their compatibility with a regional trail facility can assist in identifying a preferred alignment. **Figures 1-6** illustrate the corridor land uses by segment along with other inventoried information from the Technical Memo #1. The following table outlines compatible, neutral, and conflicting land uses.

Table 1: Land Use Compatibility

Compatible Land Use	Neutral Land Use	Conflicting Land Use
<ul style="list-style-type: none"> • green space (real or perceived) • historically significant properties (interpretive opportunity) • educational institutions • multifamily homes • commercial businesses* 	<ul style="list-style-type: none"> • single family homes • religious institutions 	<ul style="list-style-type: none"> • commercial businesses*

*Commercial businesses have been identified as both potentially compatible and conflicting with the regional trail. While connections to commercial centers are generally an asset to a trail network, we are currently exploring the feasibility of removing on-street parking on one side of the street in order to construct a trail facility. In this case, it is assumed that the preference would be to maintain parking on the same side as the commercial businesses, therefore making them incompatible with the trail.

Specific corridor characteristics have also been called out on the figures which are compatible or could potentially be in conflict with the regional trail or construction of the regional trail:

- Compatible
 - Existing or planned transit stops
 - Ash trees
- Conflicting
 - Retaining walls
 - Landmark trees

Note: A third revision of this set of figures will be created following the stakeholder meetings and completion of a parking study. Additional insights or values related to compatible land uses may arise from stakeholder discussions. Underutilized parking areas may provide an opportunity for trail alignment or may provide additional insight into which side of Summit the trail. The final version of the figures, couples with the priorities identified through stakeholder engagement, should be a useful tool in identifying trail alignment

Parking Study

Initial review of corridor typical sections and possible locations for the regional trail indicates the potential for a need to eliminate parking on one side of the street in order to avoid undesired impacts to the corridor character and vegetation. It is assumed that elimination or reduction in parking may be necessary in segments D, E, and F, where there is a 100-foot right-of-way, and not in segments with a 200-foot right-of-way.

Existing City planning documents, namely the 2040 Comp Plan, have set a modal hierarchy for designing rights-of-way with pedestrians first (with a focus on safety), bicyclists second (with a focus on safety),

transit third, and other vehicles last. In order to better understand the feasibility of removing parking and the impact it may have on surrounding uses, the project team is compiling parking utilization rate information along the corridor.

2019 Parking Study

A parking study was conducted by the City along Summit Avenue in the summer and fall of 2019 to determine the feasibility of overnight parking restrictions in order to perform routine maintenance along the road. The parking counts spanned from Mississippi River Boulevard to Selby Avenue (segments A-F of the trail alignment). Counts were taken on three different Thursday and Friday nights between the times of midnight and six a.m. The following excerpt from the memorandum dated January 31, 2020 (Kathy Lantry, Department of Public Works), summarizes the results of the study:

- Parking utilization rates well below 50% were observed along most of Summit Avenue on all six count dates.
- Parking utilization rates above 75% were consistently observed for a two block segment near Dale Street as well as on intersecting side streets near Dale Street.
- Parking utilization rates above 50% were observed near the University of St. Thomas in September when school was in session.

2022 Supplementary Parking Study

As part of this trail master planning process, Bolton & Menk will collect additional parking utilization information from Lexington Avenue to John Ireland Boulevard to supplement the overnight counts from 2019. To provide a full picture of the parking demand the following days and times have been proposed. Results of this parking study will be provided with Technical Memo #3.

- Weekday afternoon – identify parking utilization when Mitchell Hamline School of Law is in session
- Saturday evening – understand parking utilization with commercial activity along Grand Avenue
- Sunday morning - understand impact to parking due to corridor churches

Traffic Analysis

Intersections which will require traffic analysis are yet to be determined at the time of this Technical Memo. It is still the position of the consulting project team that these intersections will become more evident once trail alignment and/or typical sections alternatives are identified.

It is assumed that traffic analysis on intersecting local streets may not be necessary as the addition of a regional trail facility is not anticipated to impact traffic patterns or intersection controls. Consideration may need to be made if pedestrian leading intervals or separate bicycle signal phases are suggested at intersections and would drastically change the signal timing or if roadway configuration changes are proposed (ex. eliminating a turn lane). A meeting with the City’s traffic group representative will allow

the project team to understand what information is readily available for local streets and intersections and where additional information may be needed.

State and County intersecting roads may require additional traffic analysis in order to communicate potential impacts to those agency stakeholders. These roads include Snelling Avenue (State Highway 51), Lexington Parkway (County Road 51), Dale Street (County Road 53).

Possible Trail Configuration

Table 2 identifies possible trail configurations based on corridor typical sections. Maintaining the existing bike lanes assumes that the trail facility would need to be multiuse for recreational cyclists who are not comfortable using the on-street bike lanes. If the bicycle facilities were reimagined as separated cycle tracks, it is assumed that the trail facility could be split between the cycle track and a separate path for pedestrians.

Segment:	Segment A/C	Segment B	Segment D/E/F
Typical Section:	Single Median, 200' ROW	Double Median, 200' ROW	No Median, 100'ROW
Maintain Existing Bike Lanes	Trail in median	Trail in N median	Trail on N side
	Trail on N side	Trail in S median	Trail on S side
	Trail on S side	Trail on N side	
Re-Imagine Bike Facilities	One-way separated cycle track in median	One-way separated cycle track in median	One-way separated cycle track in boulevards
	One-way separated cycle track in boulevards	Two-way separated cycle track in median (north or south)	Two-way separated cycle track in boulevard (north or south)
	Two-way separated cycle track in median		
	Two-way separated cycle track in boulevard (north or south)		

Table 2: Possible Trail Configurations

Trail Design Tools

This section outlines and briefly describes design tools that can be used to improve corridor safety and user experience regardless of recommended trail alignment. The majority of the tools contribute to traffic calming and/or improve visibility of pedestrian, cyclists, and motorists. Once a preferred trail alignment has been identified recommended locations for these tools can be made for further exploration during design and implementation of individual trail segments.

Crossings**Reduce corner radii**

Corner radii directly impact vehicle turning speeds and pedestrian crossing distances. A smaller curb radii reduces turning vehicle speeds and decreases the crossing distances for pedestrians.

Curb extensions (bump-outs) at crossings

Curb extensions are devices that physically narrow the roadway, increasing the overall visibility of pedestrians by aligning them with the edge of the travel lane.

Median refuge island

A median refuge island is a protected space in the center of the roadway to facilitate 2-stage pedestrian crossing. An offset crossing is similar to a median refuge island, however the two legs of the crossing area offset to turn pedestrians in the direction of approaching traffic.

Raised crosswalks

A raised crosswalk is a crosswalk or bicycle crossing that is combined with a speed table, which raises the entire wheelbase of a motor vehicle. In addition to slowing motor vehicle traffic, raised crosswalks can also improve visibility between drivers, bicyclists and pedestrians at crossing locations.

High-visibility crosswalk

High-visibility crosswalk markings are ladder markings used to increase the visibility of a crossing location for drivers.

Rectangular Rapid Flashing Beacon (RRFB)

A rapid flashing beacon is an activated warning to drivers that pedestrians are present and intend to cross the road.

Bike signal phase (signalized intersections)

Bike signals should be considered at intersections where dedicated right turn lanes are present if a separated bike lane is considered as an alternative. Per FHWA guidance, no conflicting vehicular movements of any kind can be present during the bicycle crossing phase. All parallel vehicular traffic would need to be stopped during the bicycle crossing phase. Conversely, bicyclists would be held during parallel vehicle greens. For these reasons bicycle signal faces may be impractical without a dedicated right turn phase and substantial turn volumes (over 150 per hour).

Leading pedestrian interval (signalized intersections)

Leading pedestrian intervals give pedestrians and bicyclists a 3-7 second head start to cross an intersection during an all-red signal phase, allowing pedestrians to better establish their presence in the crosswalk before vehicles are allowed to turn.

Bicycle box (signalized intersections)

An intersection bicycle box is a designated area at the approach to a signalized intersection consisting of an advance stop line and bicycle symbols. Bike boxes are used primarily to facilitate queuing a larger number of bicyclists at the head of the traffic queue to reduce conflicts between drivers and bicyclists at the beginning of the green signal phase.

Two-stage turn queue box (signalized intersections)

A two-stage turn queue box designates an area at the intersection for bicyclists to wait for traffic to clear an intersection. It allows the bicyclist to traverse the intersection, enter the turn box, reorient

themselves to cross the road, and wait until the cross-street signal changes to cross. They can be used for either left or right turns.

Corridor**Median closures**

There are several secondary intersections along Summit which are currently full access, including a split in the median. Where feasible with traffic operations, some of these gaps could be closed to create a more continuous median and fewer conflict points between user groups.

Differential pavement/pavement markings

Utilizing different pavement types or finishes can aid in distinguishing the trail from other facilities and increase awareness of the trail. This approach can be applied along the trail corridor and/or at crossing locations where appropriate.

Placemaking

The following tools support placemaking, help to establish a trail character, and aid in traffic calming by adding additional detail to the experience of those traveling along the corridor.

Trail wayfinding signage

Wayfinding is signage intended to help pedestrians and bicyclists navigate an area, inform them of the direction and distance to specific destinations, or mark the location of a designated pedestrian or bike path. Wayfinding signage can be paired with community branding to mark a specific district.

Community Branding

Community branding is recognizable neighborhood character with consistent style of site amenities which may include monumentation, light poles with banners, or various site furnishings (benches, bike racks, etc.).

Interpretive Signage

Informational plaques or signs and historical markers can be used to draw attention to the unique history of Summit Avenue.

Public Art

Art in the boulevard or pedestrian space can be used as a tool for traffic calming as well as wayfinding or establishing a sense of place. Public art could be a sculpture, incorporated onto or into the pavement, added to vertical infrastructure, etc.

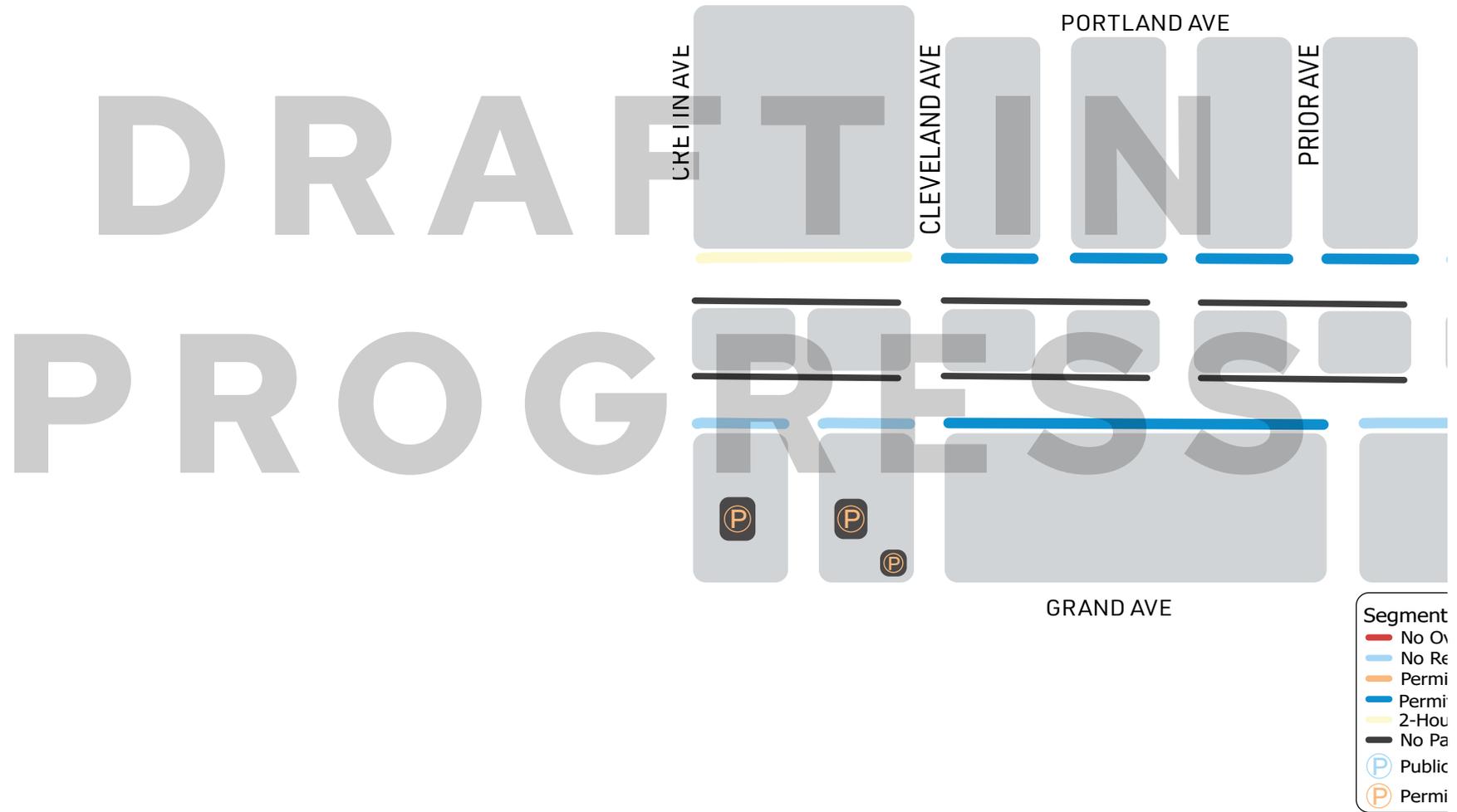
Outstanding Items

Coordination items or clarifications needed in order to complete this master plan as of the submittal of this technical memo are listed below:

- Corridor cultural resources review – *BMI waiting on direction from City*
- Supplementary parking study – *in progress*
- Meeting with St. Paul traffic to discuss traffic analysis needs
- Width of city maintenance equipment for sidewalks/trails

Technical Memorandum #2 |
 Parking Inventory

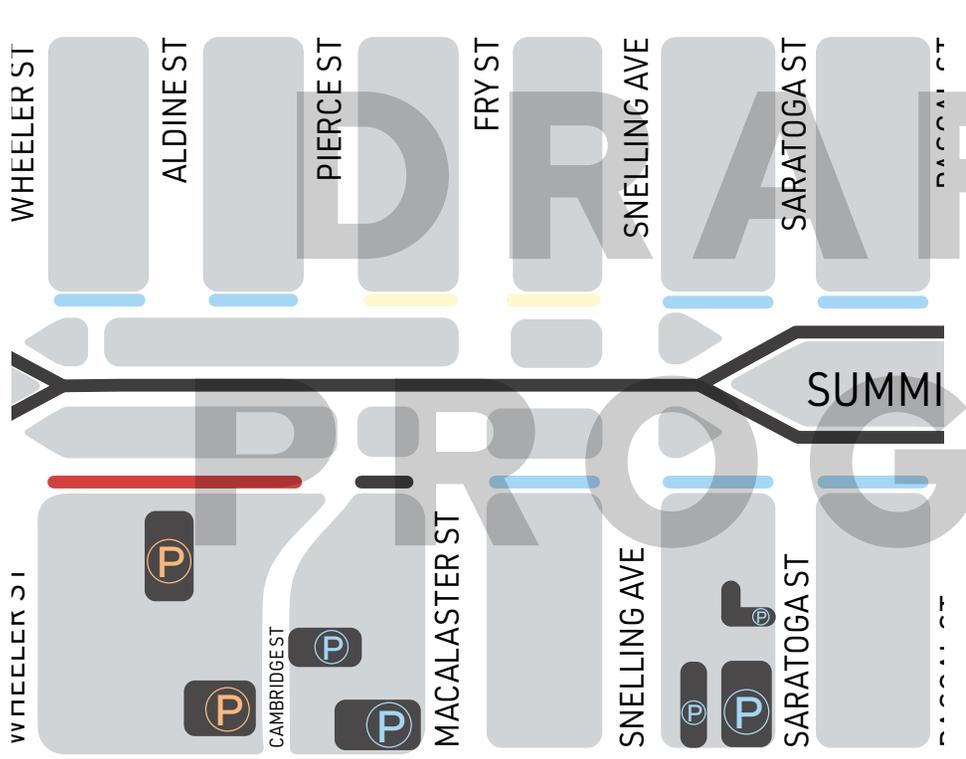
SEGMENT A



CREATION DEPARTMENT
 CONSTRUCTION DIVISION

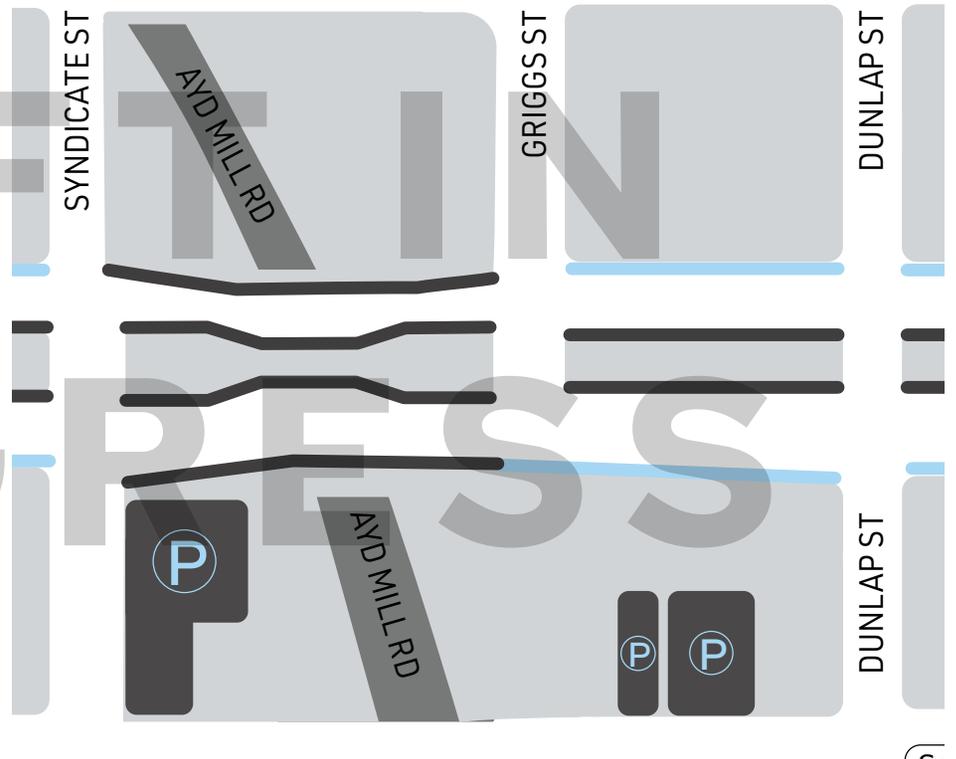
SITE E'

SEGMENT B



CREATION DEPARTMENT
CONSTRUCTION DIVISION

SEGMENT C

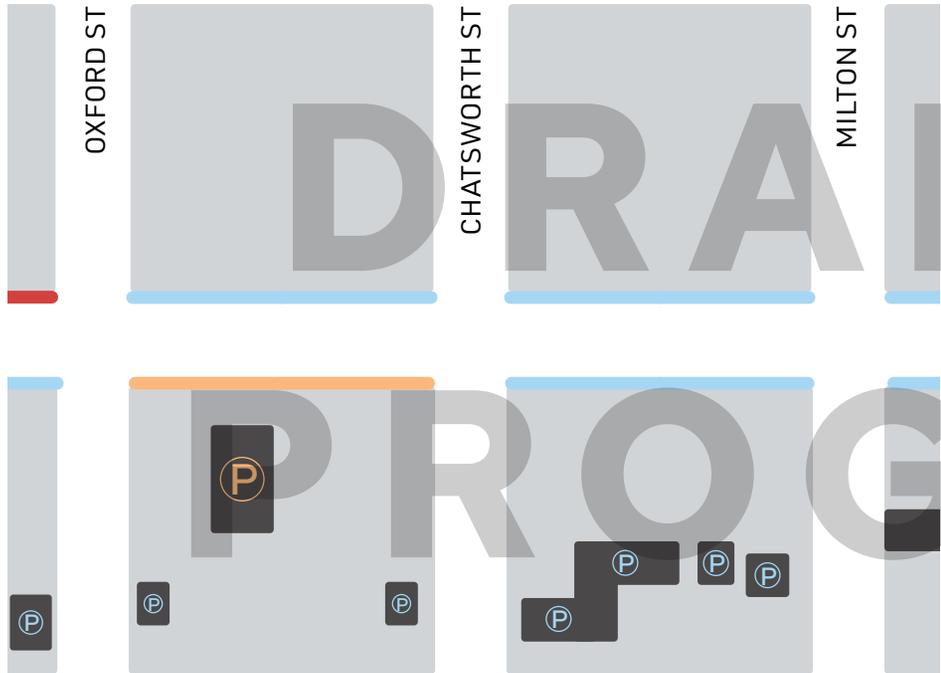


SITE E' CREATION DEPARTMENT
CONSTRUCTION DIVISION

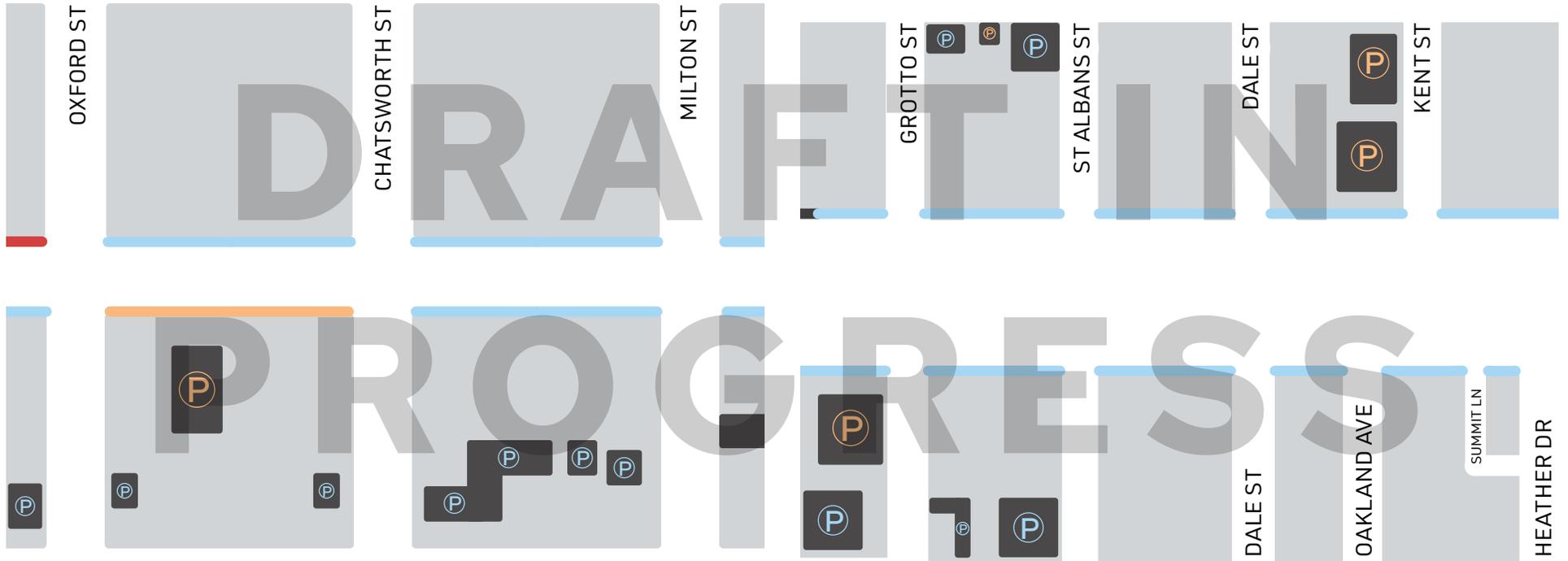
SITE E'



SEGMENT D



SEGMENT E



- Segment D**
- School Lr (7am-4pm)
 - No Restr
 - Emergen
 - P Public/Bu
 - P Time-Lim
 - P Permit Pa

- Segme**
- No
 - No
 - P Put
 - P Per

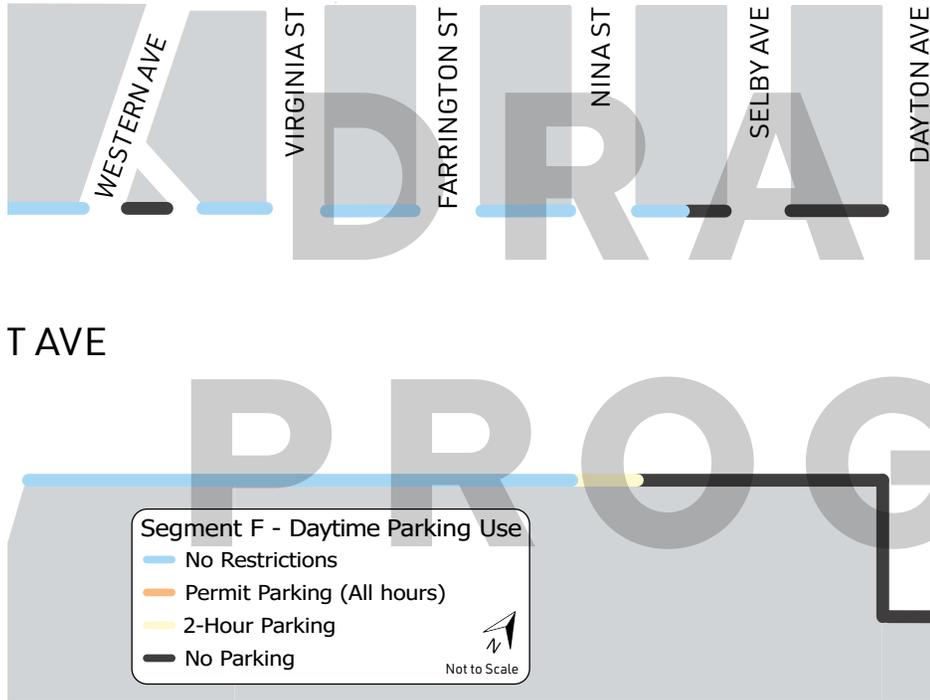
CREATION DEPARTMENT
CONSTRUCTION DIVISION

SITE E'

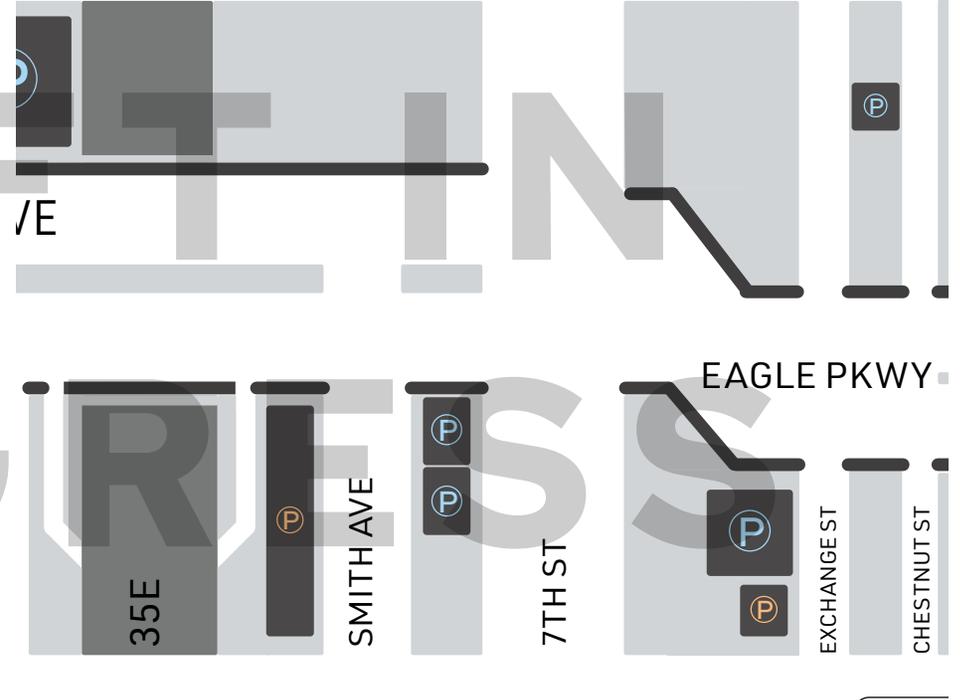
CREATION DEPARTMENT
CONSTRUCTION DIVISION

SITE E'

SEGMENT F



SEGMENT G

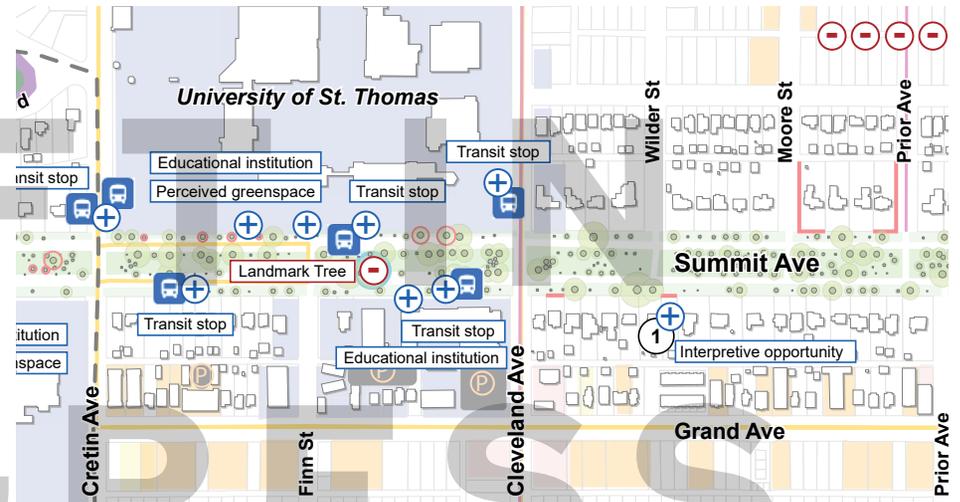


T AVE



SEGMENT A

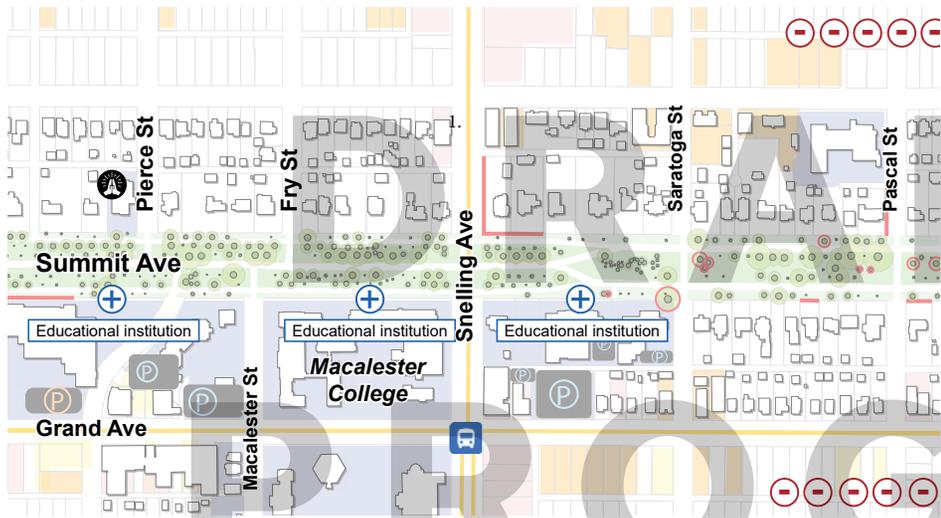
DRAFT
PROGRESS



CREATION DEPARTMENT
CONSTRUCTION DIVISION

TRAIL ALIGNMENT

SEGMENT B

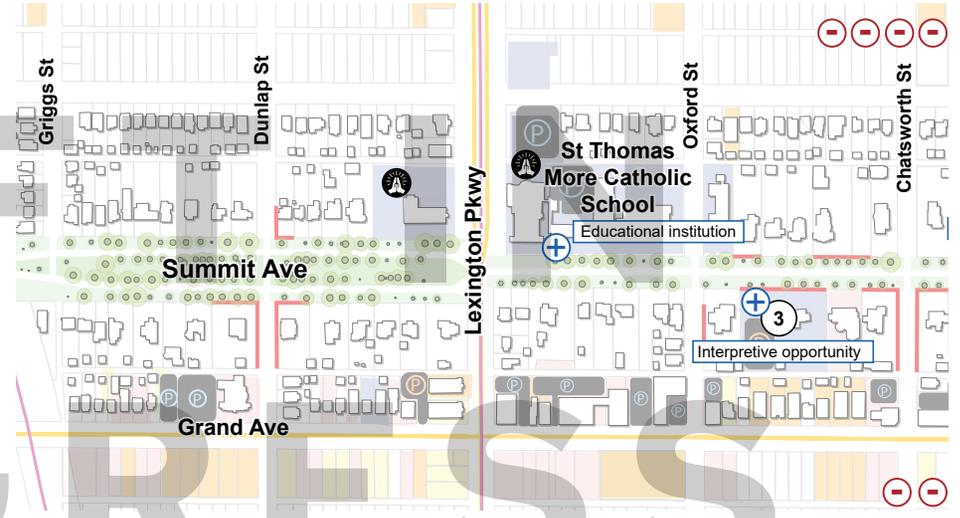


mit Avenue

CREATION DEPARTMENT
CONSTRUCTION DIVISION

TRAIL ALIGNMENT

SEGMENT C



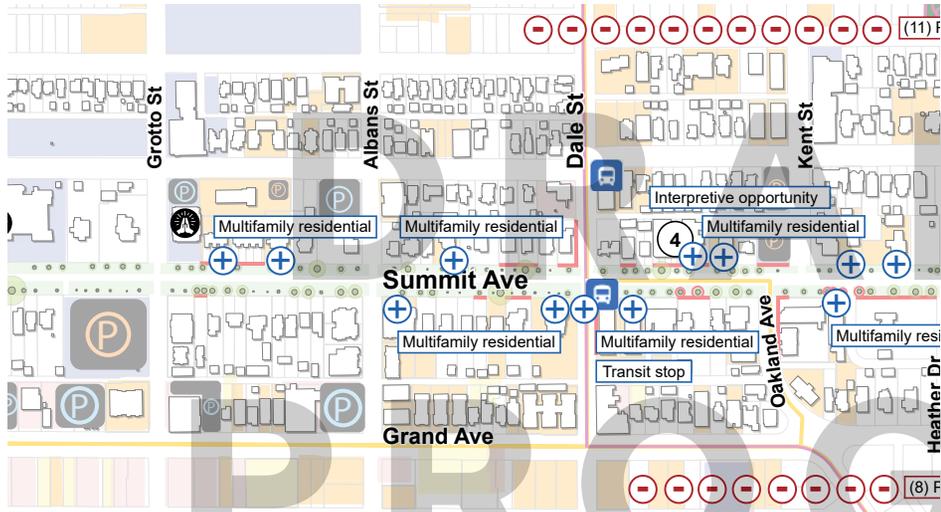
s House), 1006 Summit Avenue

CREATION DEPARTMENT
CONSTRUCTION DIVISION

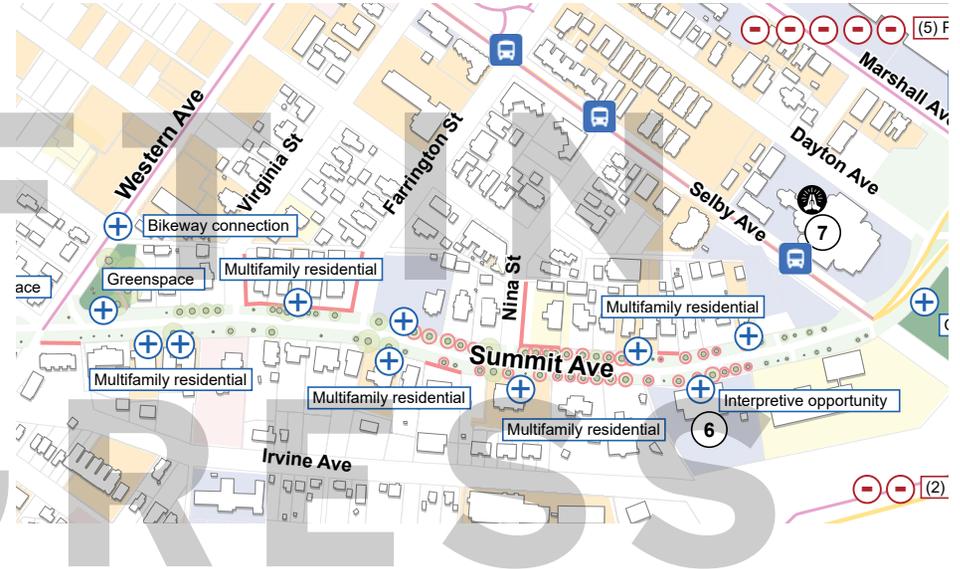
TRAIL ALIGNMENT

CORRIDOR ANALYSIS

SEGMENT E



SEGMENT F



- 5) Burbank-Livingstone-Griggs House (James C. Burbank House), 432 Summit Avenue
Local, State, and Nationally listed
- 3) James J. Hill House, 240 Summit Avenue
Local, State, and Nationally listed
- 7) St. Paul Cathedral-Catholic, 239 Selby Avenue/225 Summit Avenue
Nationally listed

pace), 587-601 Summit Avenue

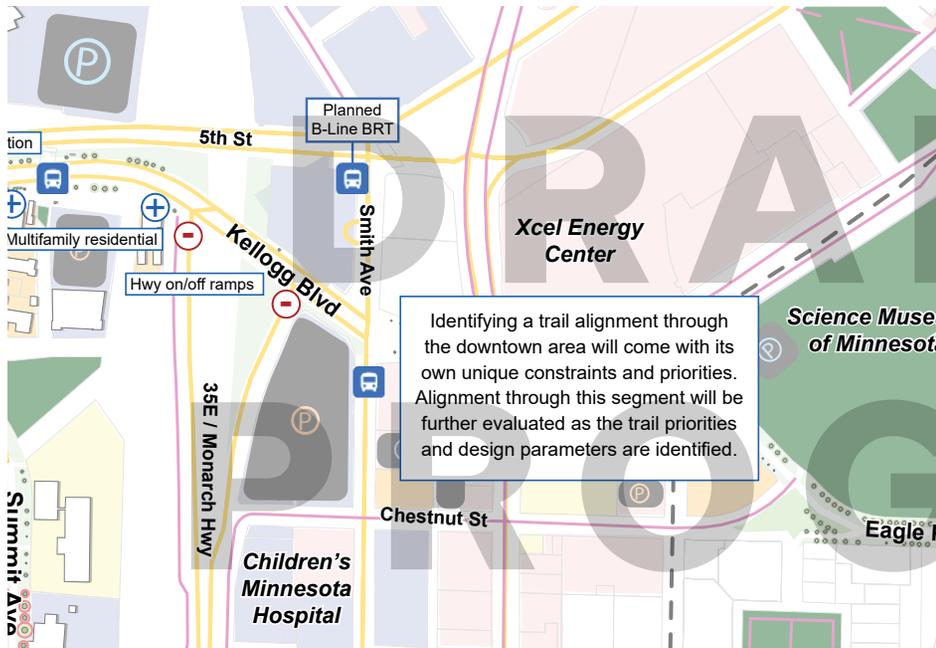
CREATION DEPARTMENT
CONSTRUCTION DIVISION

TRAIL ALIGNMENT

CREATION DEPARTMENT
CONSTRUCTION DIVISION

TRAIL ALIGNMENT

SEGMENT G



c/Business Parking Lot

it Parking Lot

CREATION DEPARTMENT
CONSTRUCTION DIVISION

TRAIL ALIGNMENT

MEMORANDUM

Date: March 23, 2022
To: Mary Norton, PLA
From: Cody Christianson, P.E., ENV SP
Subject: Summit Avenue Parking Study
City of St. Paul
Project No.: 074.126438

I. Introduction

As a part of the Summit Avenue Parking Study project a parking study was conducted to analyze both the park supply and utilization along portions of the project corridor and on adjacent side streets. Data was collected on Summit Avenue between Lexington Parkway and Selby Avenue, as well as on sides streets immediately adjacent to Summit Avenue between Grotto Street and Selby Avenue. Figure 1 shows the roadways on which data was gathered. The data collected in this study was compared to data collected between July and September 2019 (before COVID-19) for an overnight parking restriction study to help contextualize the results.

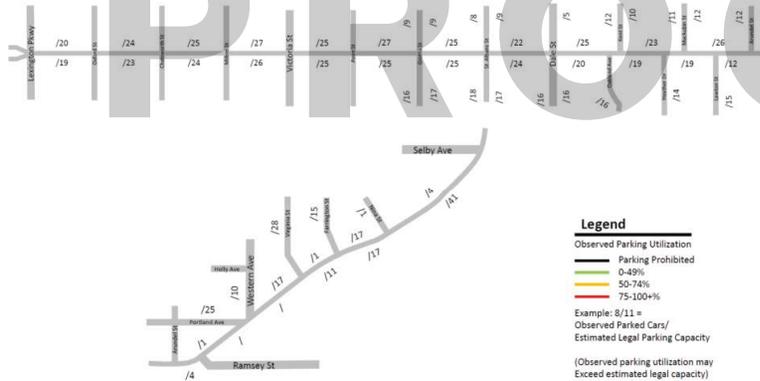


Figure 1 – Study Area

II. Methodology

Parking data was collected on three dates in February 2022: Thursday February 10th, Saturday February 12th, and Sunday February 13th. Data was collected during the following times, which include three sets on Thursday and Saturday and two sets on Sunday:

- Thursday (3 Collections): 12:00 PM, 2:00 PM, 4:00 PM
- Saturday (3 Collections): 4:00 PM, 6:00 PM, 8:20 PM
- Sunday (2 Collections): 8:15 AM, 10:15 AM

Data was collected about public on street parking at the locations shown above in Figure 1, which included both sides of Summit Avenue between Lexington Parkway and Selby Avenue, as well as the immediately adjacent side streets next to Summit Avenue between Grotto Street and Selby Avenue. For each location, data was collected by cars parked per block face, which allowed us to collect not only block by block data but also data by side of the street. One pass was recorded per collection. While every block face on Summit Avenue allows parking, nine of the side street blocks only allow parking on one side of the street.

The data collection locations for this study were similar to the overnight parking restriction study conducted in 2019. While the overnight parking restriction study went the entire length of Summit Avenue, from Mississippi River Boulevard to Selby Avenue, the new study collected data in the exact same spots east of Lexington Avenue. In 2019, the data was only collected during overnight periods, so the numbers cannot be directly compared, however they can help to provide context to the study.

III. Parking Supply

The total parking supply of the study area shown in Figure 1 is 1,095 spots, with 754 spots on Summit Avenue and 341 spots on side streets. Parking is allowed on every block face on Summit Ave, while many of the side streets have parking restrictions on one side of the street. Nine side street block faces have one sided parking restrictions, many of these due right of way constraints. These nine side streets are:

- Dale St
- Oakland Ave
- Heather Dr
- Lawton St
- Portland Ave
- Western Ave
- Virginia St
- Farrington St
- Nina St

IV. Parking Utilization

Table 1. Average Daily Usage

Average Usage - Total				
Location	Thursday	Saturday	Sunday	Combined
Summit Ave	26.7%	28.8%	23.9%	26.8%
Side Streets	33.3%	39.3%	39.7%	37.2%
Total	28.8%	32.1%	28.8%	30.0%

Over the entire study area, utilization was modest compared to the total supply of spaces. Table 1 shows the average usage of parking each day of the study. Combined, the analysis shows that the average parking utilization over all eight counts was 30%. The utilization of parking spaces was higher on side streets than on Summit Avenue, with 37% overall utilization on side streets compared to 27% overall utilization on Summit Ave. Saturday saw the most parked vehicles in total, with an average of 32.1% of spots being occupied during the three counts. Table 2 shows the average usage for each count broken up into spaces directly on Summit Avenue and spaces counted on side streets. The final count on Saturday, at 8:20 PM, had 33.2% usage among all block faces in the study area. At this time, 41% of side street parking spots were occupied, the highest percentage over the whole study. Summit Avenue spaces were 29.7% full, which was also the highest number seen on Summit Avenue over the duration of the study.

Table 2. Average usage per count

Average Usage – Thursday				
Location	12:00 PM	2:00 PM	4:00 PM	Daily Average
Summit Ave	28.4%	27.5%	24.3%	26.7%
Side Streets	30.5%	35.5%	34.0%	33.3%
Total	29.0%	30.0%	27.3%	28.8%

Average Usage – Saturday				
Location	4:00 PM	6:00 PM	8:20 PM	Daily Average
Summit Ave	29.2%	27.6%	29.7%	28.8%
Side Streets	37.2%	39.6%	41.1%	39.3%
Total	31.7%	31.3%	33.2%	32.1%

Average Usage – Sunday

Location	8:15 AM	10:15 AM	N/A	Daily Average
Summit Ave	21.6%	26.1%	N/A	23.9%
Side Streets	39.9%	39.6%	N/A	39.7%
Total	27.3%	30.3%	N/A	28.8%

These results were similar to what was found during the 2019 overnight parking restriction study. Those overnight counts found that parking on this portion of Summit Avenue was generally well below 50% full. Most of summit avenue was well below the 50% mark for all eight counts, with only a few sections having less than 50% of the spots available at any time.

One of the spots where parking utilization was high was near Dale Street. Both studies found that the blocks surrounding the Dale Street and Summit Avenue intersection were the busiest segments, with the observed parking utilization during the overnight study and the current study often above 75% full.

One section of note is Grotto Street north of Summit Avenue. For the first seven counts there were zero observed cars parked there. During the final count, at 10:15 AM on Sunday Morning, 14 of the 18 spots were utilized. Unity Church – Unitarian is located on the northeast corner of Portland Avenue and Grotto Street, which is a likely cause for the influx of parked cars in this location. They have services every Sunday at 9:00 and 11:00 AM.

Full counts of each observation of parking supply and utilization per block face are available in Appendix A.

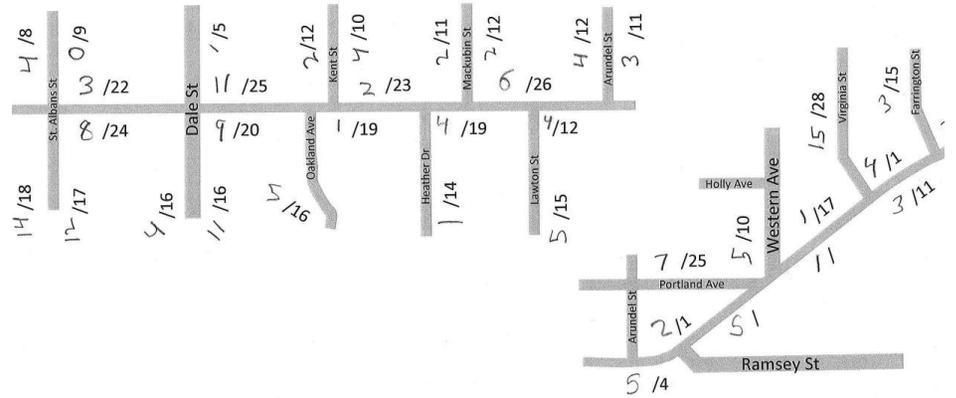
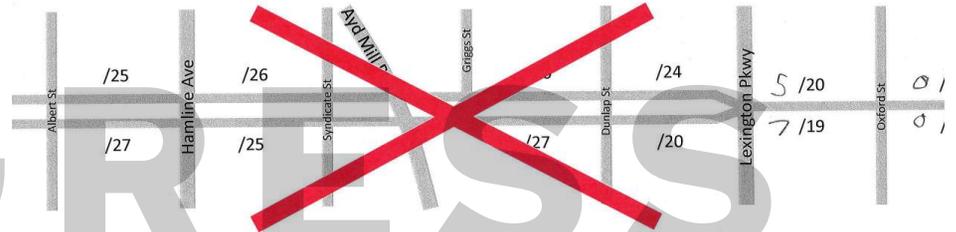
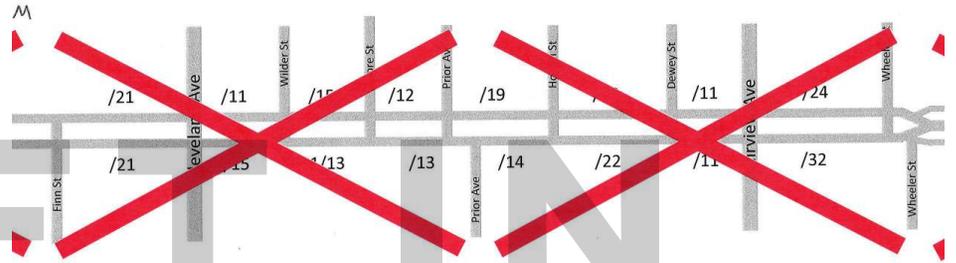
V. Conclusion

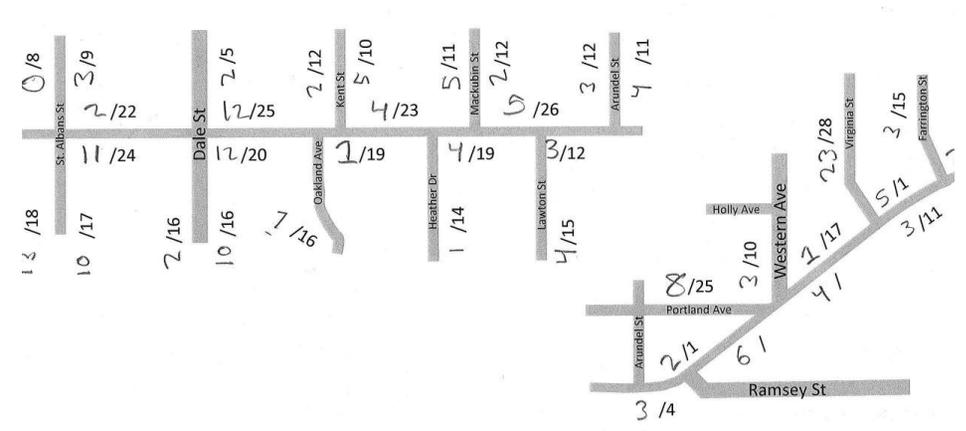
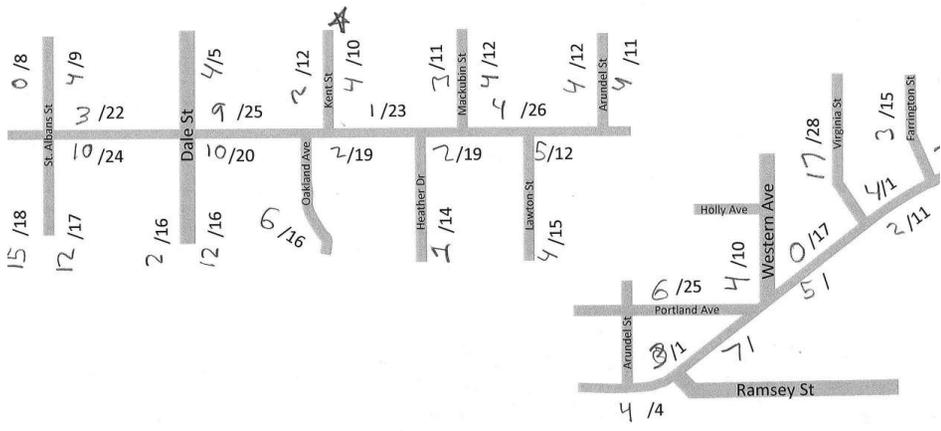
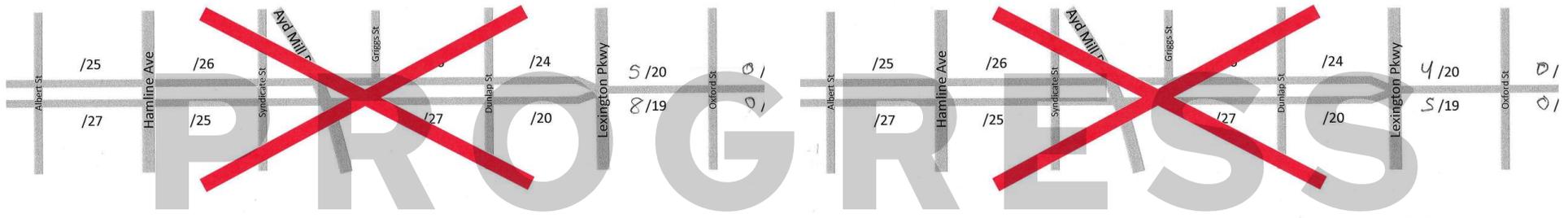
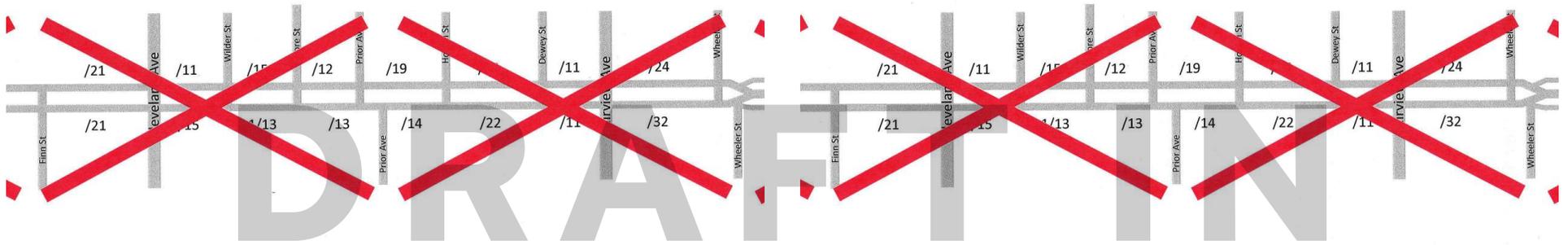
Parking utilization information was gathered across three days in February 2022, on a Thursday, a Saturday, and a Sunday. Eight counts in total were conducted, three counts on both Thursday and Saturday and two counts on Sunday. The analysis found that parking utilization in this corridor is generally modest, with an average of 30% utilization over the entire study area and all counts. There appeared to be ample parking available almost everywhere, with only the blocks surrounding Dale Street seeing consistently high usage. This amount of utilization is consistent with the overnight figures recorded before the COVID-19 pandemic started as a part of the overnight parking restrictions study.

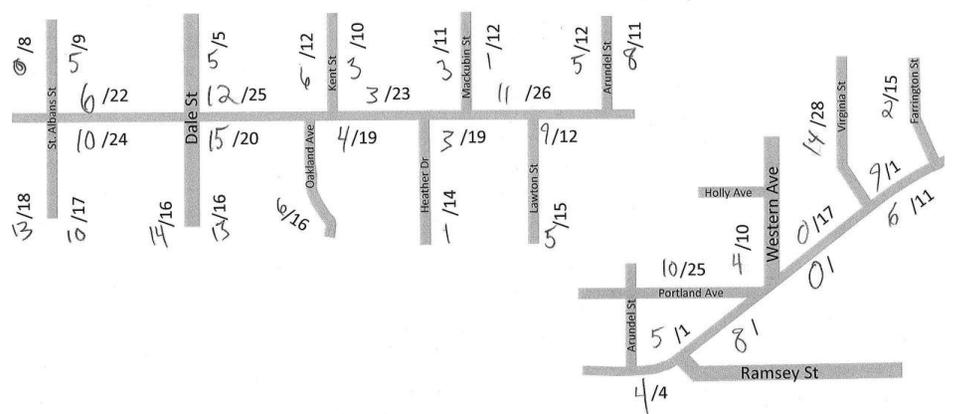
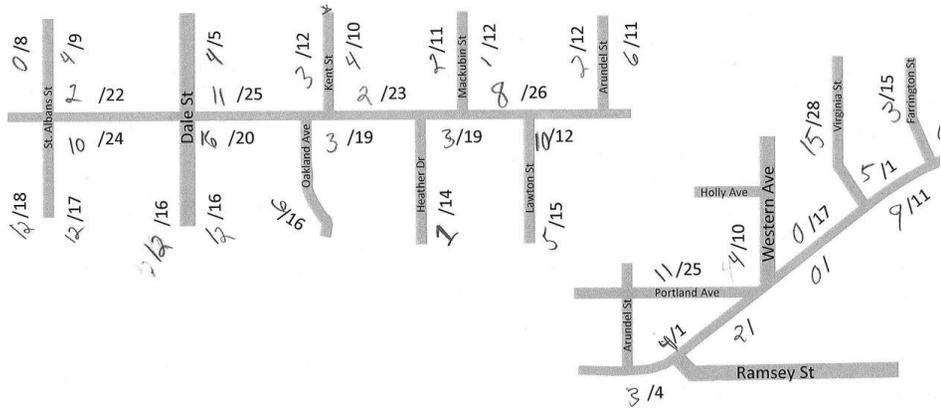
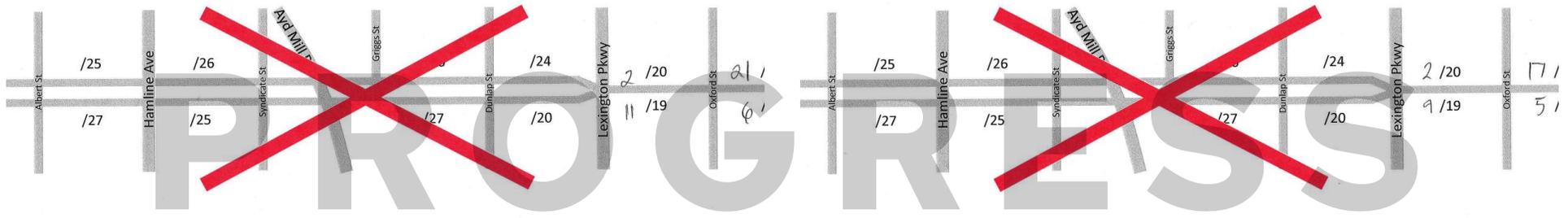
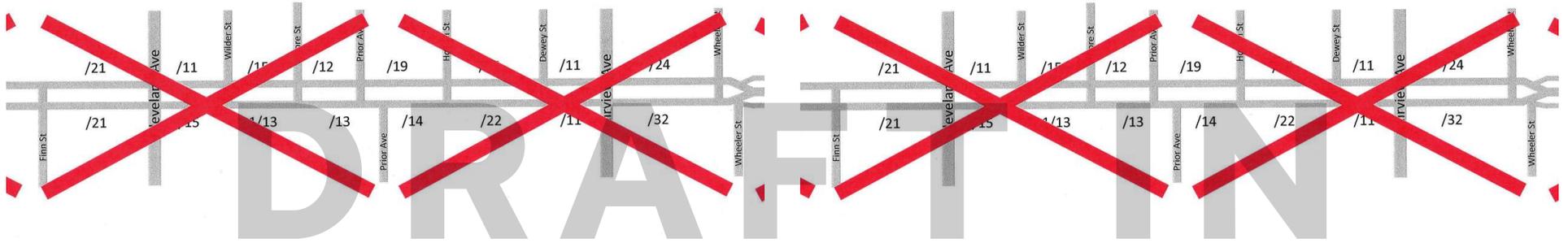
DRAFT

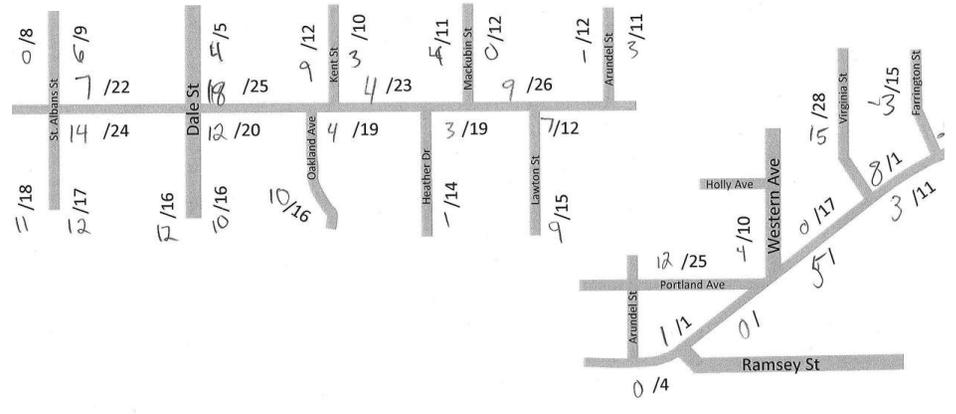
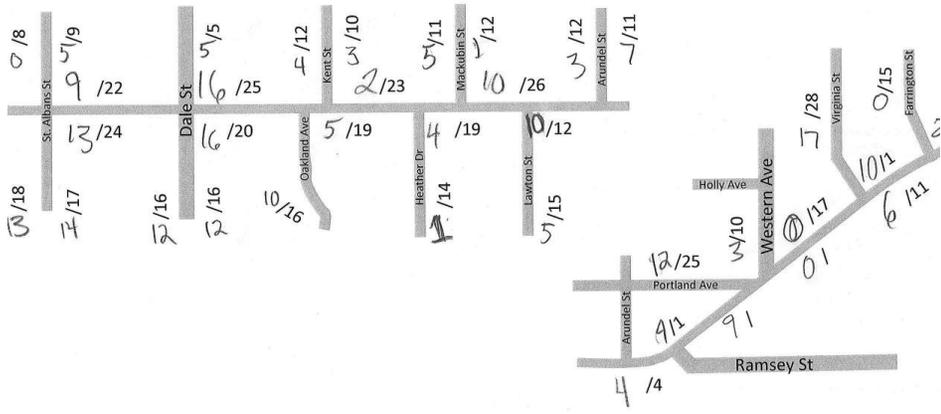
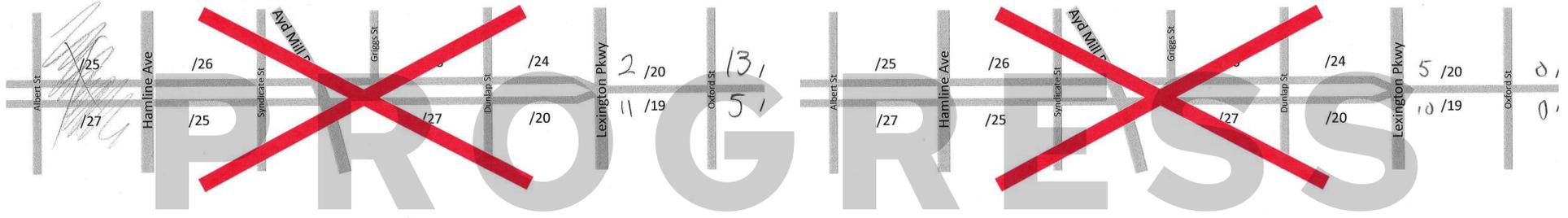
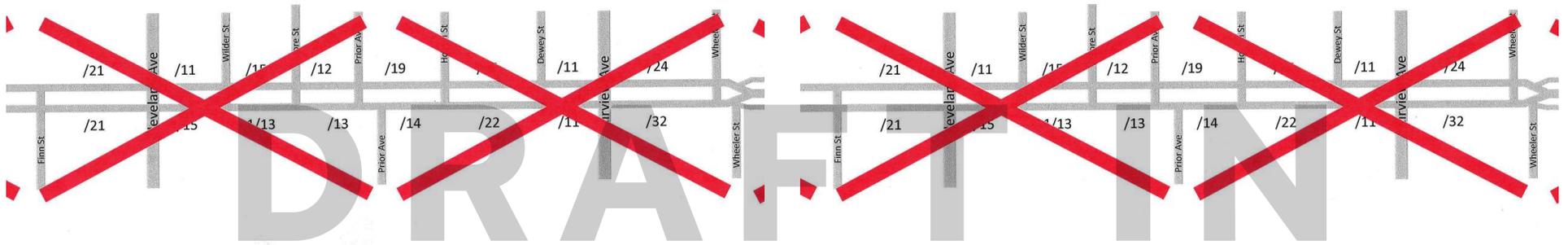
Appendix A – Parking Observations

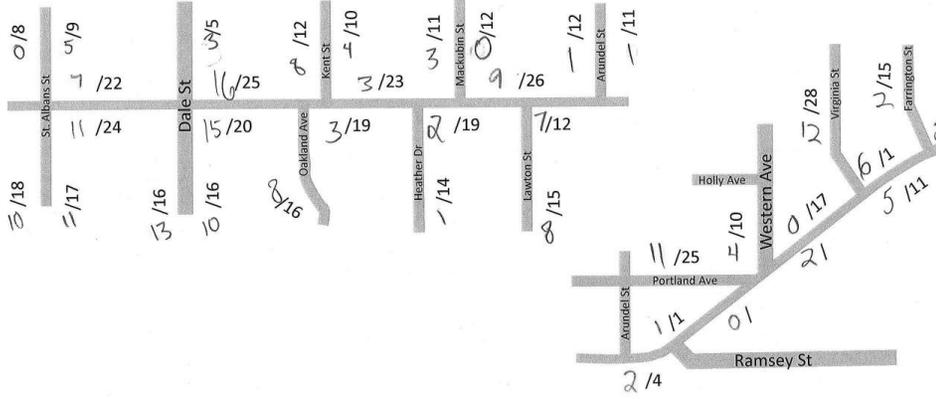
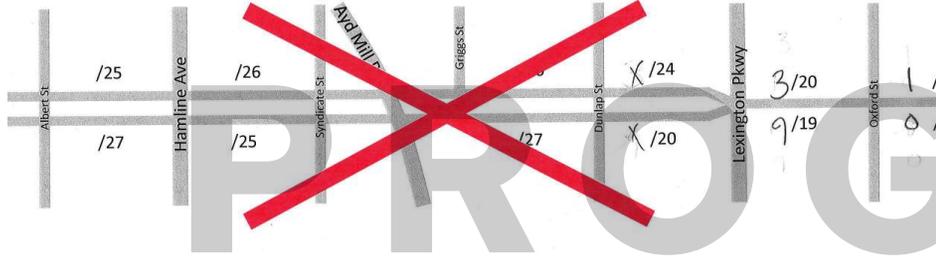
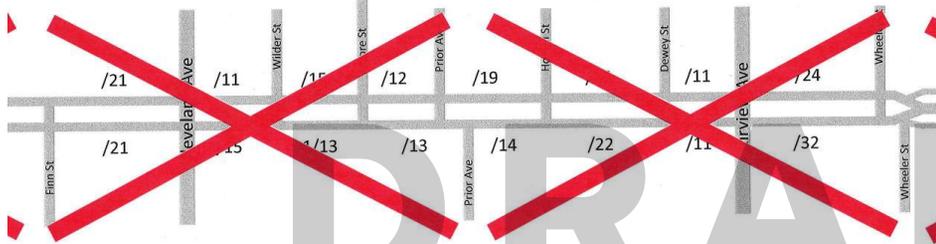
PROGRESS











DRAFT IN PROGRESS



TECHNICAL MEMORANDUM #3

DRAFT
PROGRESS

Date: April 14, 2022 **DRAFT**
To: Mary Norton, PLA
From: Cody Christianson, P.E. and Madeline Dahlheimer, PLA
Subject: Summit Avenue Regional Trail Master Plan
City of St. Paul
BMI Project No.: 0T4.126438

The goal of this technical memo is to summarize input received from the Technical Advisory Committee (TAC) and Design Advisory Committee (DAC) and information collected regarding the historical significance of the corridor typical section evaluation. Additionally, segment transitions were evaluated based on the typical sections as presented in Technical Memo #2. Together, these three lenses have informed the evaluation matrix related to project goals around community priorities, identifying alternatives with respect to the corridor context, and the safety and function of the proposed trail.

Stakeholder Feedback

A meeting with the Technical Advisory Committee (TAC) was held on February 4, 2022. This group is comprised of agency stakeholders including city staff from various departments and representatives of the Metropolitan Council and various state departments. A meeting with the Design Advisory Committee (DAC) was held on February 15, 2022. This group is comprised of corridor stakeholders including representatives from education and religious institutions, neighborhood associations, residents, and community groups. Both meetings were held virtually. Content included an introductory presentation providing background of the master planning process and breakout rooms where stakeholders were provided an opportunity to discuss the various corridor segments based on typical sections. Exercises related to trail vision as well as exploring potential trail facility configurations were conducted.

Overall corridor-wide feedback from both groups included:

- Separate bike and pedestrian facilities preferred
- Protect trees and greenspace
- Design in support of historic context

Segment specific feedback for Segments A/C (200-foot ROW with single median) included a desire to stay out of the median from the DAC and a preference for one-way bicycle facilities.

Segment specific feedback for Segment B (200-foot ROW with double median) included an interest in exploring the use of the frontage roads for the trail facility from the TAC. This concept was broached with the DAC, with minimal support. Further exploration of this possibility illustrated challenges related

H:\STPL\0T4126438\2_Preliminary\C_Reports\Tech Memos\126438 Summit Ave Regional Trail_Tech Memo 3 DRAFT.docx
Bolton & Menk is an equal opportunity employer.

to parking, access, and maintenance that have eliminated it from further consideration. The discussion has, however brought safety concerns at the intersection of Snelling Avenue to the forefront. There may be opportunity with this or a future project to explore intersection improvements to improve safety at this location.

Segment specific feedback for Segments D/E/F (100-foot ROW with no median) included conflicting parking preferences to maintain existing parking from the DAC and support for eliminating parking on one side of the street from the TAC.

It is important to note that in addition to these advisory committee meetings, there has been robust public participation via online engagement opportunities (survey and comment map). It is essential to balance the feedback from all sources when evaluating potential trail solutions. The city has compiled summary information related to all stakeholder engagement activities.

Historic Resources Technical Memo

A historic resources technical memo has been attached at the end of this document. The document reviews and summarizes the character defining features of the corridor as presented in federal, state, and local historic registries. The document provides information related to the development and evolution of the historic street. Primary character defining features are listed below. Impacts to these should be minimized to avoid an adverse effect.

- **The tree canopy and wide grass medians and boulevard**
- The typical sections of the corridor including **how the right-of-way is split between transportation corridors and boulevards/pedestrian space.**
- The **existing curbs** contribute to the allocation of space between roadway and median/boulevard space. Additionally, granite curb exists in specific locations and should be maintained or incorporated back into place where possible.

Several precedents of bicycle and trail facilities through historic districts elsewhere in the country are also included in the memo. The majority of these include on-street bicycle facilities and a standard city sidewalk. While none of these fit exactly into what a regional trail on Summit Avenue would look like, the context of evolving standards in active transportation design must be considered. Separated bicycle facilities have become an increasingly preferred design standard for safety and user comfort.

An interesting inference from the report is the evolution of transportation methods through time, beginning with carriage rides for recreation, to the popularity of the bicycle, the rise of the automobile, to today with a growing interest in multi-modal transportation options. Through this project, we have an opportunity to examine the reallocation of space within the existing transportation corridors to meet current transportation and recreation preferences while minimizing impacts to surrounding corridor features.

The parameters identified in the Historic Resources Technical Memo outline the *path of least resistance* through the historic review process for any infrastructure changes along Summit Avenue, essentially eliminating any impacts to existing conditions. It is, however, important to note that historic context is only one lens to use in reviewing potential trail alternatives. While this is a strongly weighted priority for this specific project, there are additional lenses, such as user safety, to consider in determining a preferred facility type.

Segment Transitions

In considering the various alternatives through the different segments, the transition from segment to segment was analyzed looking at the safety and functionality of changing from one trail composition to another. The three transition areas analyzed are as follows:

- Segment A to Segment B at Wheeler Street: wide, single median to double median
- Segment B to Segment C at Snelling Avenue: double median to wide, single median
- Segment C to Segment D at Lexington Parkway: wide, single median to no median

These segment transitions were analyzed with the consideration of the historical context of Summit Avenue; therefore, no median trails were considered. For this same reason, a two-way bikeway in Segments A and C was not considered.

Figures illustrating these transition areas are included as an attachment at the end of this document.

Summit Ave and Wheeler St – Segment A to Segment B Transition

Transition Type	Safety Considerations	Function Considerations
1-way bikeway (median) to 1-way bikeway	-Bicyclists must cross over through traffic at an uncontrolled intersection to continue along Summit	-Trail users (pedestrians and bicyclists) are separated by vehicular traffic in Segment A -Bicyclists go from left-side of traffic to right-side of traffic and vice versa
1-way bikeway (median) to 2-way bikeway	-Bicyclists must cross over through traffic at an uncontrolled intersection to continue along Summit, with one direction crossing head-on traffic	-Trail users (pedestrians and bicyclists) are separated by vehicular traffic in Segment A -Eastbound bicyclists go from left-side of traffic to right-side of traffic
1-way bikeway (boulevard) to 1-way bikeway	-Bicyclists remain outside of through traffic in the intersection -Bikeway crossed by right turning vehicles turning off of and on to Summit Ave	-Trail users (pedestrians and bicyclists) are separated by boulevard in Segment A -Bicyclists remain along right-side of traffic through the intersection
1-way bikeway (boulevard) to 2-way bikeway	-Counterflow bicyclists forced to cross both directions of traffic at an uncontrolled intersection	-Trail users (pedestrians and bicyclists) are separated by boulevard in Segment A

Summit Ave and Snelling Ave – Segment B to Segment C Transition

Transition Type	Safety Considerations	Function Considerations
1-way bikeway to 1-way bikeway (median)	-Bicyclists must cross over through traffic at an uncontrolled intersection east of Snelling to continue along Summit	-Trail users (pedestrians and bicyclists) are separated by vehicular traffic in Segment C -Bicyclists go from right-side of traffic to left-side of traffic and vice versa
1-way bikeway to 1-way bikeway (boulevard)	-Bicyclists remain outside of through traffic in the uncontrolled intersection -Bikeway crossed by right turning vehicles turning off of and on to Summit Ave	-Trail users (pedestrians and bicyclists) are separated by boulevard in Segment C -Bicyclists remain along right-side of traffic through the intersection
2-way bikeway to 1-way bikeway (median)	-Bicyclists must cross over through traffic at an uncontrolled intersection east of Snelling to continue along Summit	-Westbound bicycles need to use a two-stage turn queue box to enter 2-way bikeway -Trail users (pedestrians and bicyclists) are separated by vehicular traffic in Segment C
2-way bikeway to 1-way bikeway (boulevard)	-Bicyclists remain outside of through traffic in the uncontrolled intersection -Bikeway crossed by right turning vehicles turning off of and on to Summit Ave	-Westbound bicycles need to use a two-stage turn queue box to enter 2-way bikeway -Trail users (pedestrians and bicyclists) are separated by boulevard in Segment C

Summit Ave and Lexington Ave – Segment C to Segment D Transition

Transition Type	Safety Considerations	Function Considerations
1-way bikeway (median) to 1-way bikeway	-Eastbound bicyclist transition to the right side of traffic prior to the Lexington intersection, requiring bicyclists to cross through traffic outside of an intersection	-Westbound bicycles need to use a two-stage turn queue box to enter bikeway along median -Trail users (pedestrians and bicyclists) are separated by boulevard in Segment C
1-way bikeway (median) to 2-way bikeway	-Alternatively, to the 3 phase eastbound bicyclist approach, the bike could transition to the right side of traffic prior to the Lexington intersection and then cross the intersection in 2 phases. This would require bicyclists to cross through traffic outside of an intersection	-Eastbound bicyclists cross the signalized crossing in up to 3 phases -Westbound bicyclists cross the signalized intersection in 2 phases -Trail users (pedestrians and bicyclists) are separated by vehicular traffic in Segment C
1-way bikeway (boulevard) to 2-way bikeway	-Bicyclists remain outside of through traffic through the intersection -Bikeway crossed by right turning vehicles turning off of and on to Summit Ave on the western leg	-Eastbound bicycles need to use a two-stage turn queue box to enter 2-way bikeway -Trail users (pedestrians and bicyclists) are separated by boulevard in Segment C

Possible Trail Configuration – Minimum Design Standards

Trail configuration alternatives have been updated to reflect the minimum design standards to reduce impacts to corridor greenspace. Minimum design standards from various guiding agencies are listed below. Updated section alternatives are included as an attachment to this memo.

	FHWA	MnDOT Bikeway Facility Design Manual	State Aid	City Preference/Precedent
One-way cycle track	P: 7 ft M: 5 ft	P: 6.5-8 ft M: 5-6.5 ft	P: N/A M: 5 ft	P: 6 ft M: 5 ft
Two-way cycle track	P: 12 ft M: 10 ft	P: 11-12 ft M: 10-11 ft	P: N/A M: 8'	P: 12 ft M: 10 ft

Notes:

1. All agencies require 2-foot min. buffer along vehicle lanes and 3-foot min. buffer along parking lanes.
2. The City's preference is for 3-foot min. buffer along vehicle lanes and parking lanes.
3. The MnDOT Bikeway Manual has different minimum and preferred widths based on the peak hour bidirectional bicyclist volume.

Trail configuration eliminated from process: trail configurations with separated bike facilities along the boulevard of the frontage roads in Segment B (200-foot ROW with double medians) have been eliminated from consideration due to space constraints. While possible, if the parking were removed, there are several other alternatives within this segment that will have fewer impacts.

Evaluation Matrix

Based on the City's draft trail concept evaluation objectives, an evaluation matrix was assembled to objectively compare the various alternatives for each segment of Summit Avenue. Listed below are the City's objectives and the associated measures that were evaluated. These measures ensured that all appropriate lenses were considered – safety, history, function, greenspace, parking, and maintenance.

The full evaluation matrix is included as an attachment at the end of this document.

Objectives	Measures
Increase pedestrian and bicyclist safety	Trail connectivity/consistency
	Separation of bicycle traffic from transit
	Separation of bicycle traffic from vehicle traffic
	Reduced crossing distance
	Improved visibility of pedestrians to drivers
	Calm traffic speeds
Comfortable trail experience supporting an all ages and abilities facility	Reduced pedestrian-vehicle conflict points
	Provides separate pedestrian and bicycle facilities
Support high quality regional trail experience	Reduces barriers to accessible facilities
	Trail facility meets state and federal standards
	Maximize wayfinding and amenity opportunities

Compatible with historic context	Limits impacts to character-defining visuals
	Limits impacts to greenspace
	Prioritizes use of existing areas of pavement
Limits impacts to green space and trees	Impacts to existing tree canopy in ROW
	Limits impacts to green space
Limits impacts to vehicle and parking functions	Parking impacts
	Impacts to vehicular traffic patterns
Meets standard level of service for maintenance	Net increase/decrease in required maintenance
	Level of effort for winter maintenance

Trail configurations eliminated from process: trail configurations with impacts to the Summit Avenue medians in Segments A/C (200-foot ROW with single median) and Segment B (200-foot ROW with double medians) have been eliminated from consideration due impacts to existing trees and green space and notable adverse effects to the historic designations given to Summit Avenue.

Recommended Concepts to Carry Forward

<i>Segment:</i>	Segment A/C	Segment B	Segment D/E/F
	Single Median, 200' ROW	Double Median, 200' ROW	No Median, 100'ROW
Trail Facilities	One-way separated cycle track along median, existing sidewalks	One-way separated cycle track in center of corridor, existing sidewalks	One-way separated cycle track along boulevards, existing sidewalks
	One-way separated cycle track along boulevards, existing sidewalks	Two-way separated cycle track in center of corridor (north or south), existing sidewalks	Two-way separated cycle track along boulevard (north or south), existing sidewalks

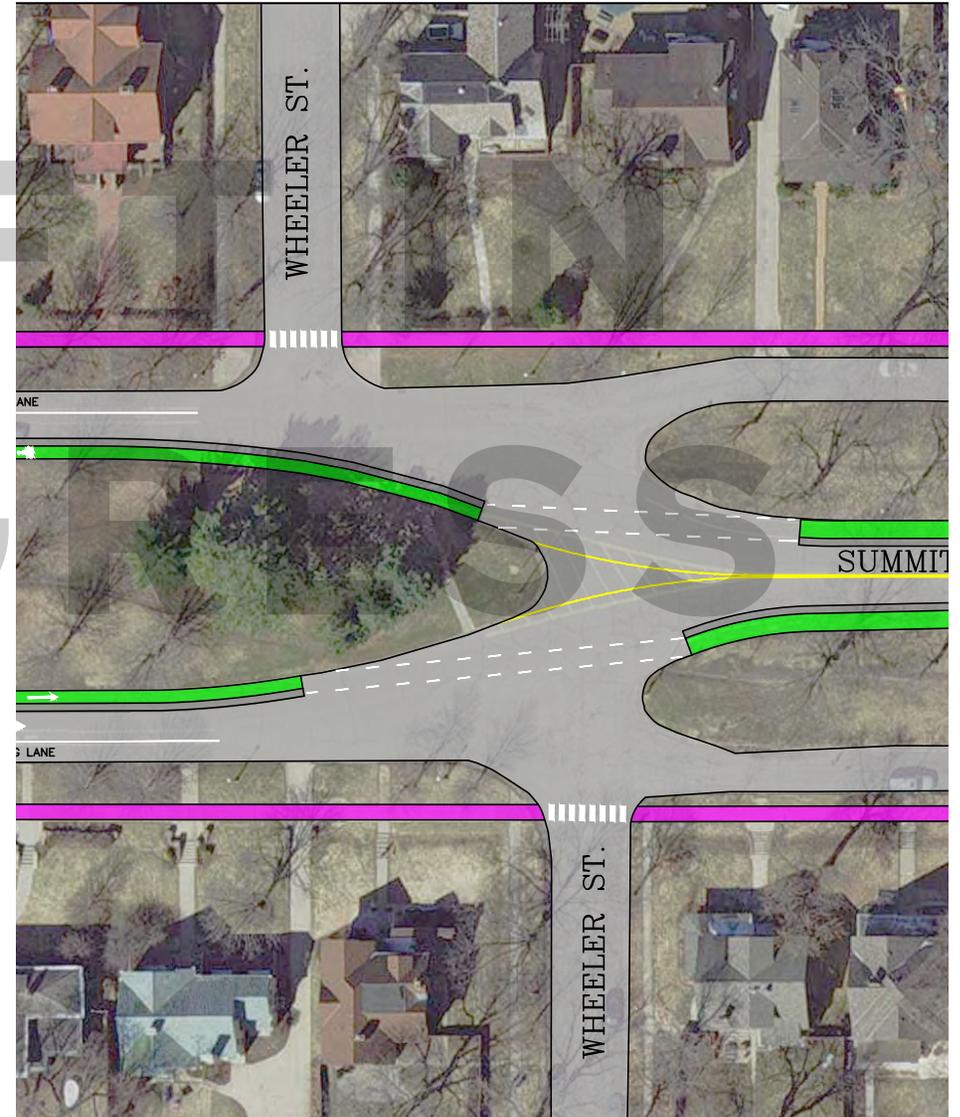
Next Steps

- Traffic analysis at key intersections
- Wayfinding and trail amenities
- 1-way versus 2-way cycle track evaluation
- North versus south side evaluation

Attachments

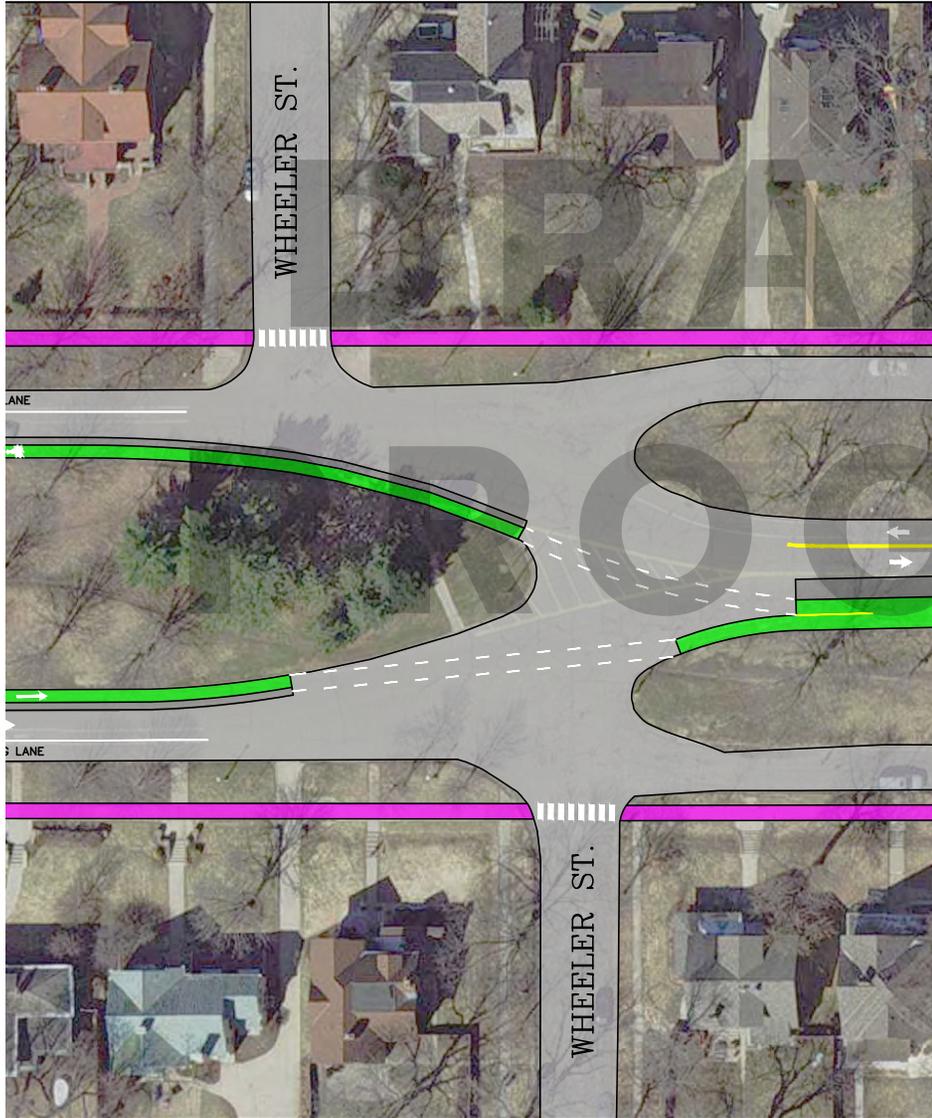
- Historic Resources Technical Memo
- Segment Transition Figures
- Trail Configuration Alternatives (typical sections)
- Evaluation Matrix

DRAFT
PROGRAM



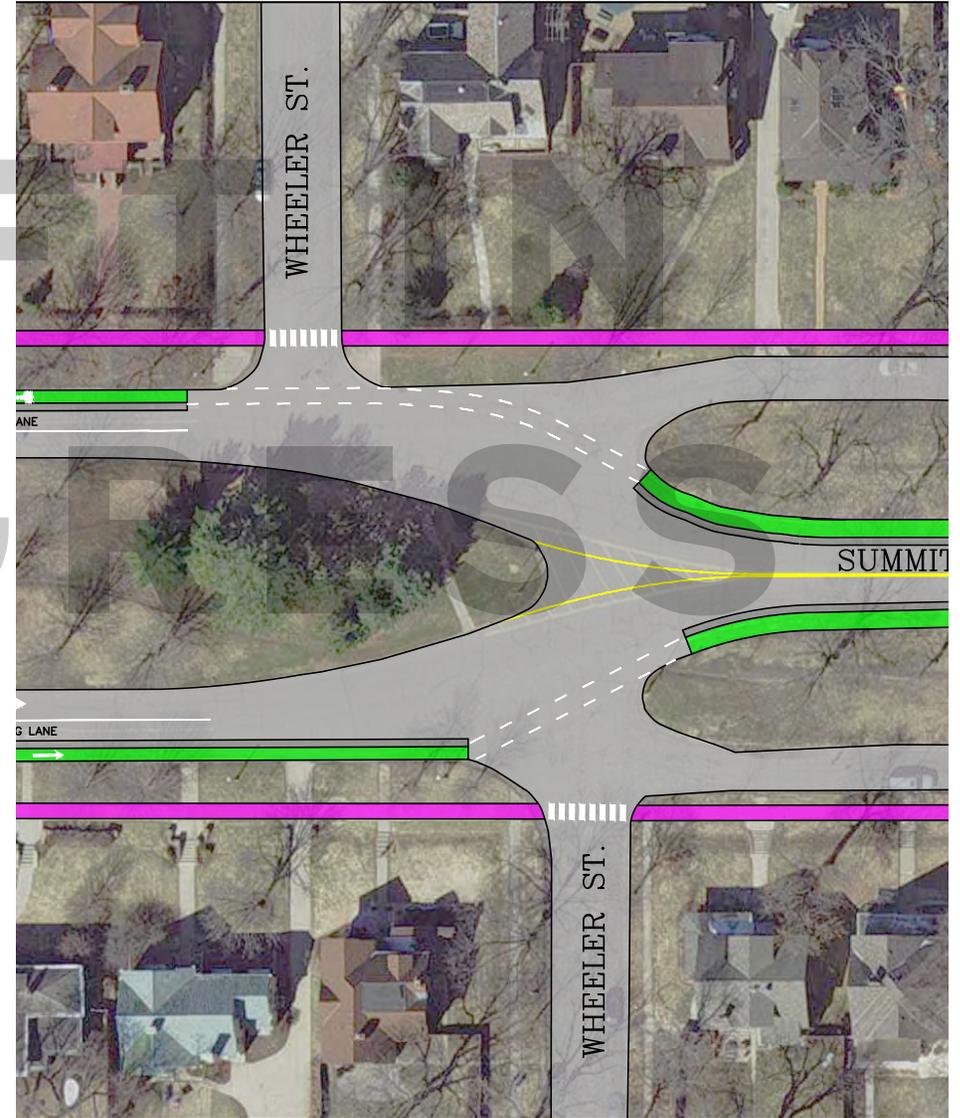
Wheeler St & Summit Ave

1-Way Bikeway (Median) to 2-Way



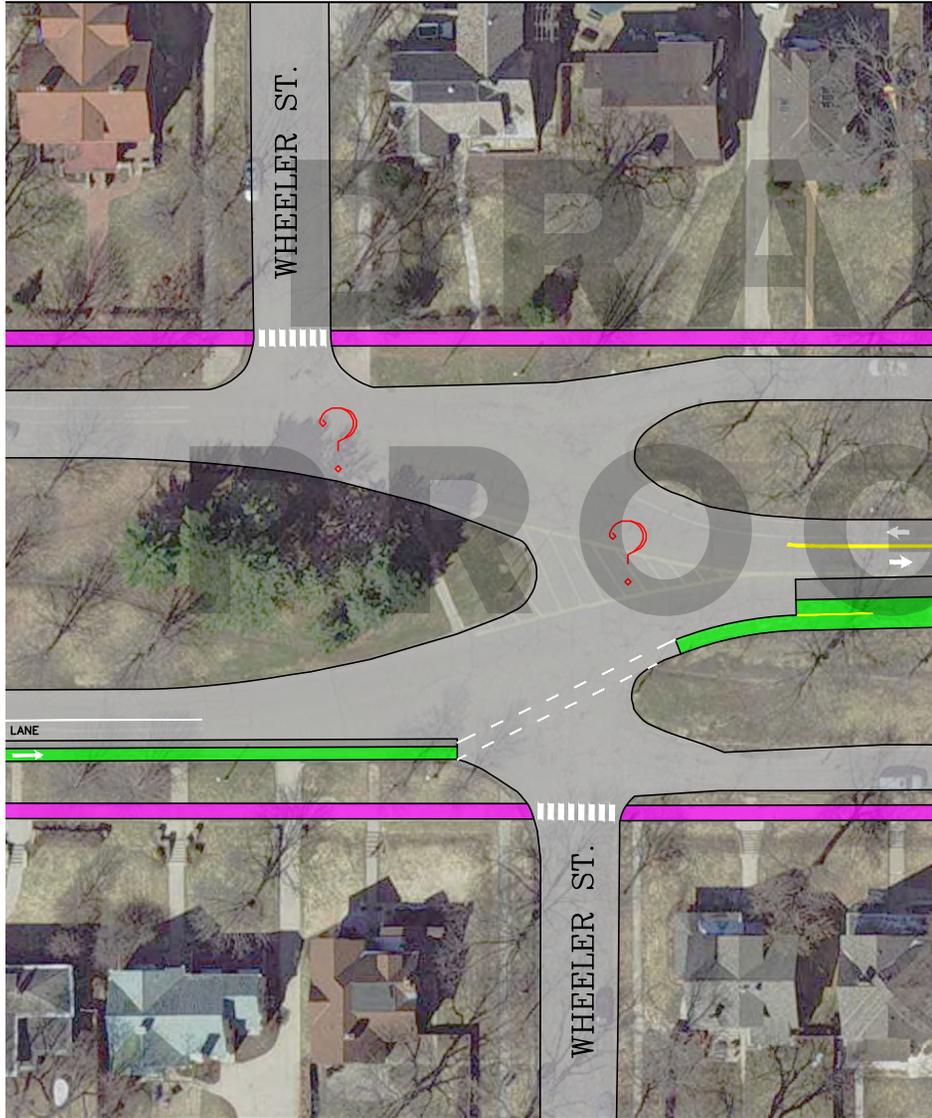
Wheeler St & Summit Ave

1-Way Bikeway (Boulevard) to 1-Way



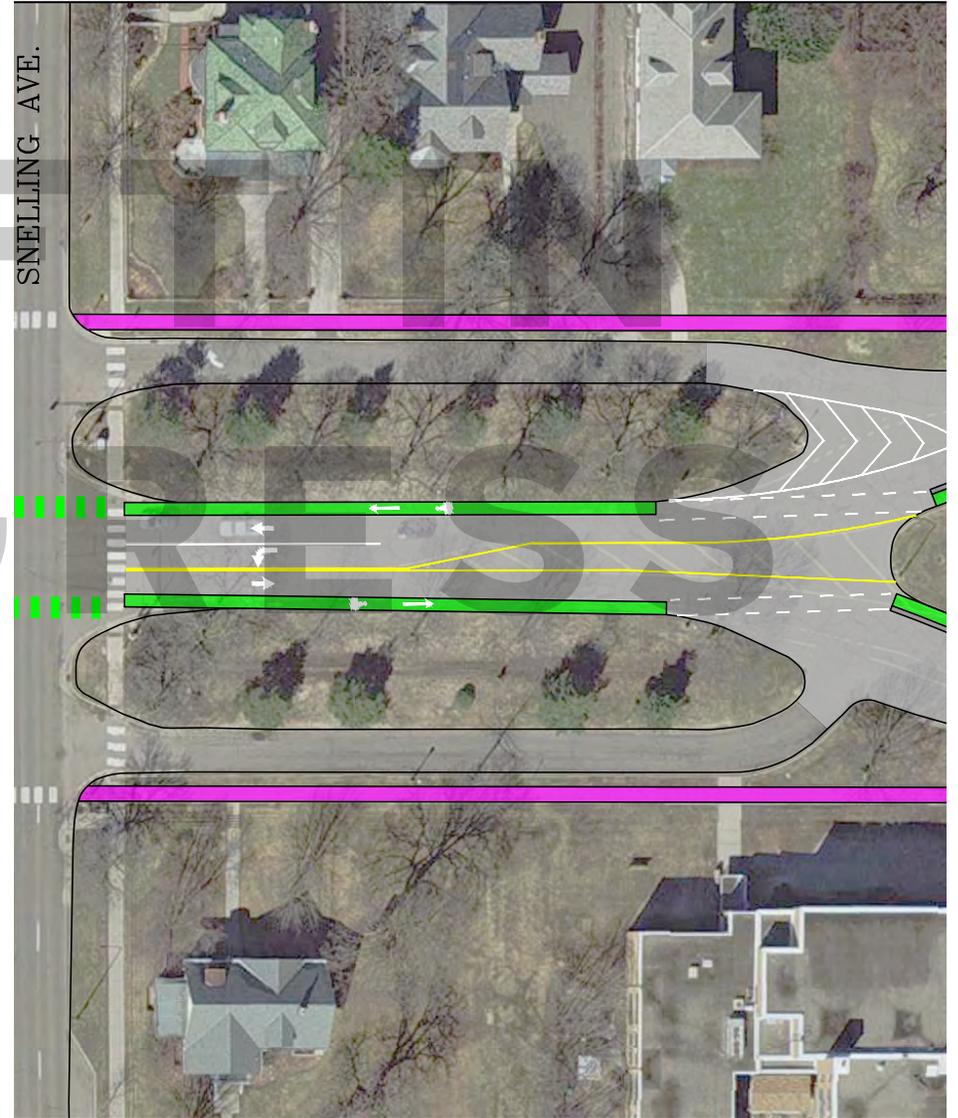
Wheeler St & Summit Ave

1-Way Bikeway (Boulevard) to 2-Way



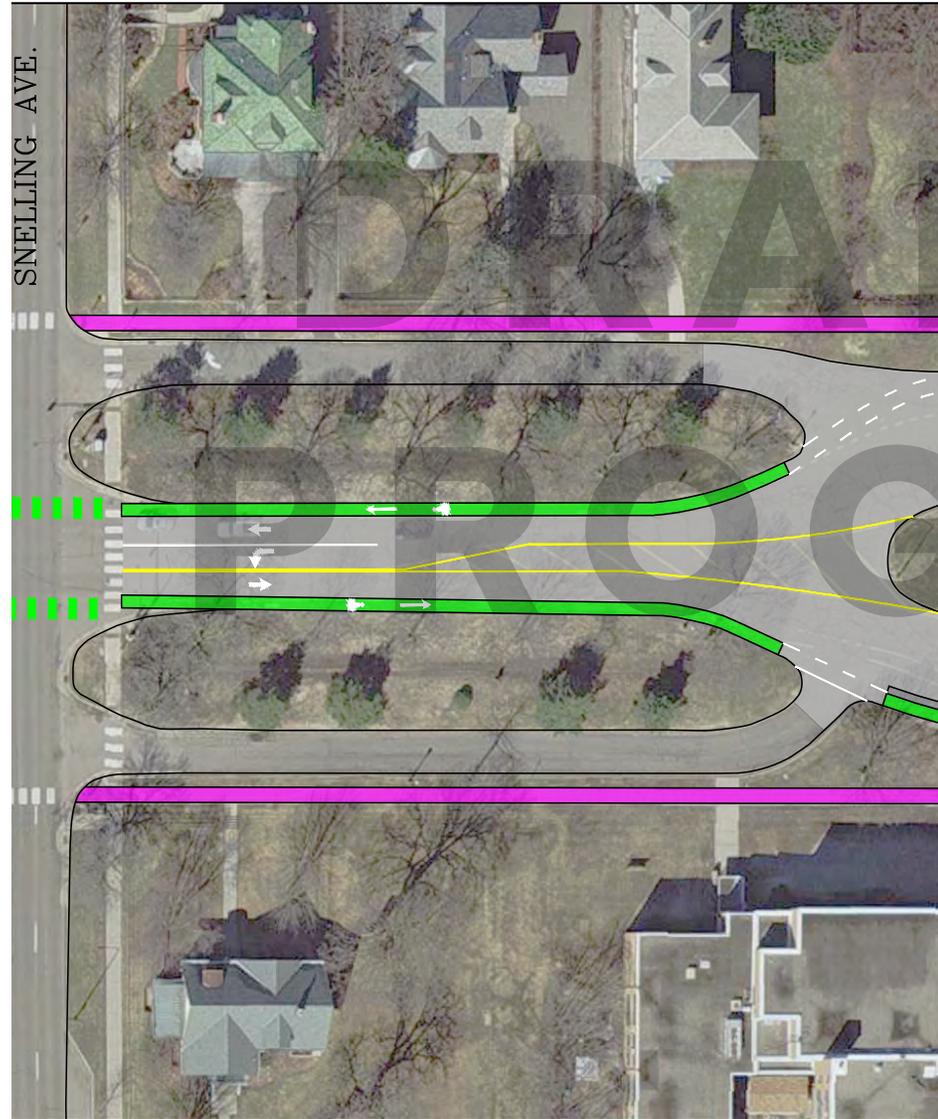
Snelling Ave & Summit Ave

1-Way Bikeway to 1-Way Bikeway



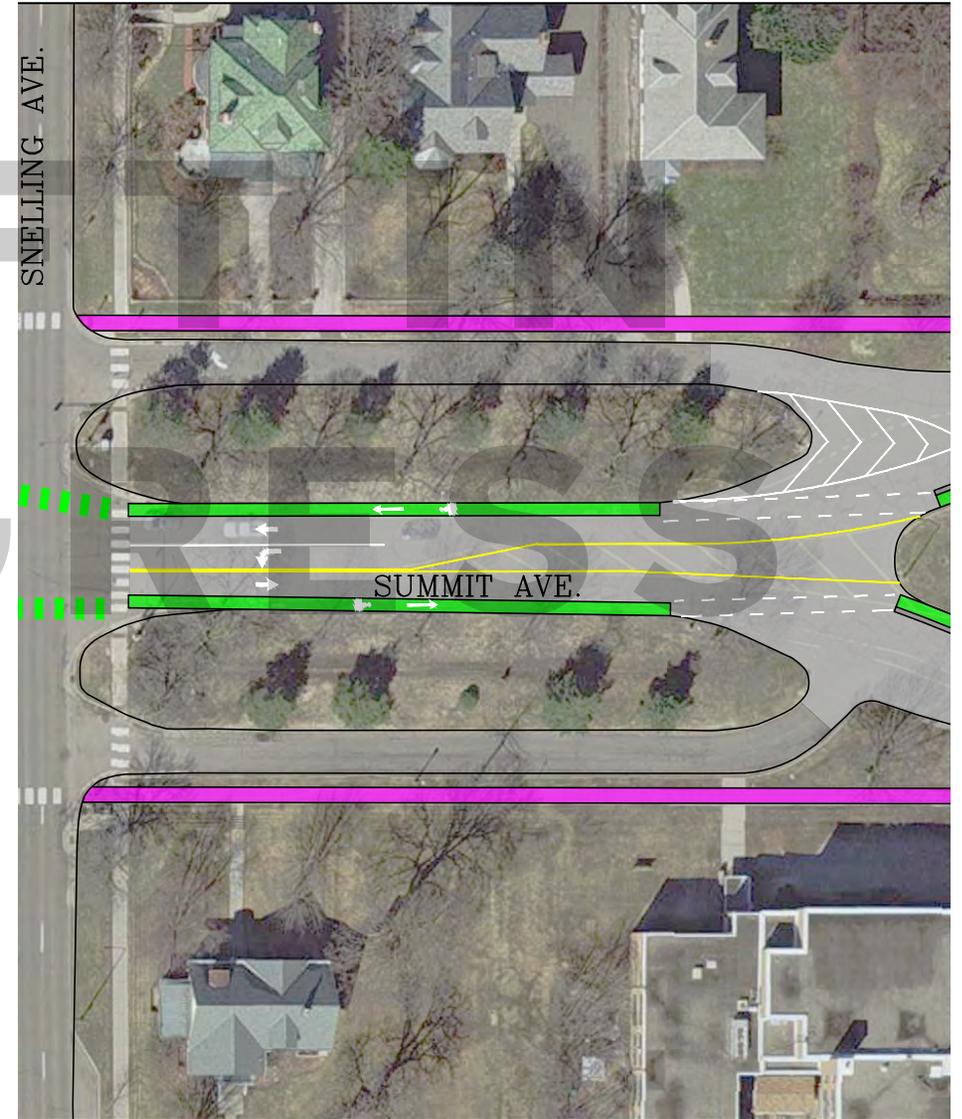
elling Ave & Summit Ave

1-Way Bikeway to 1-Way Bikeway (



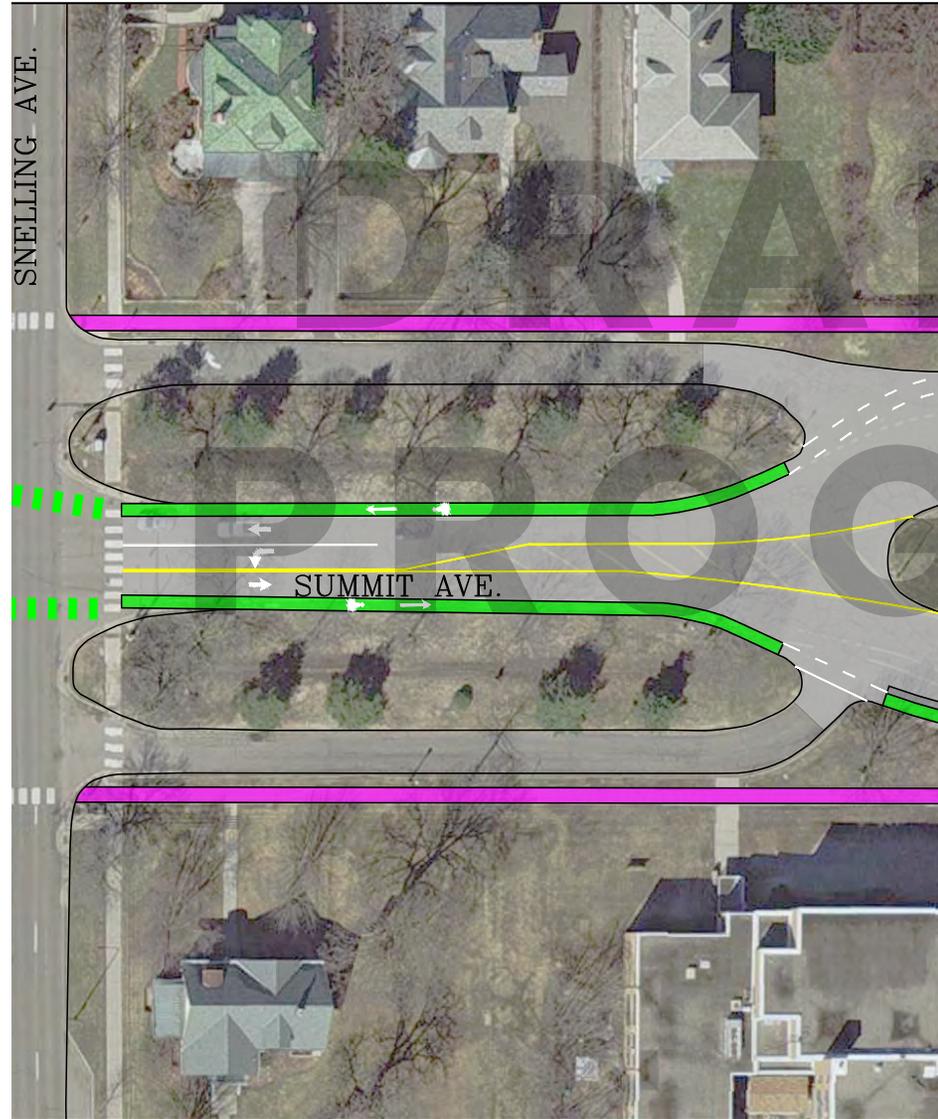
elling Ave & Summit Ave

2-Way Bikeway to 1-Way Bikeway



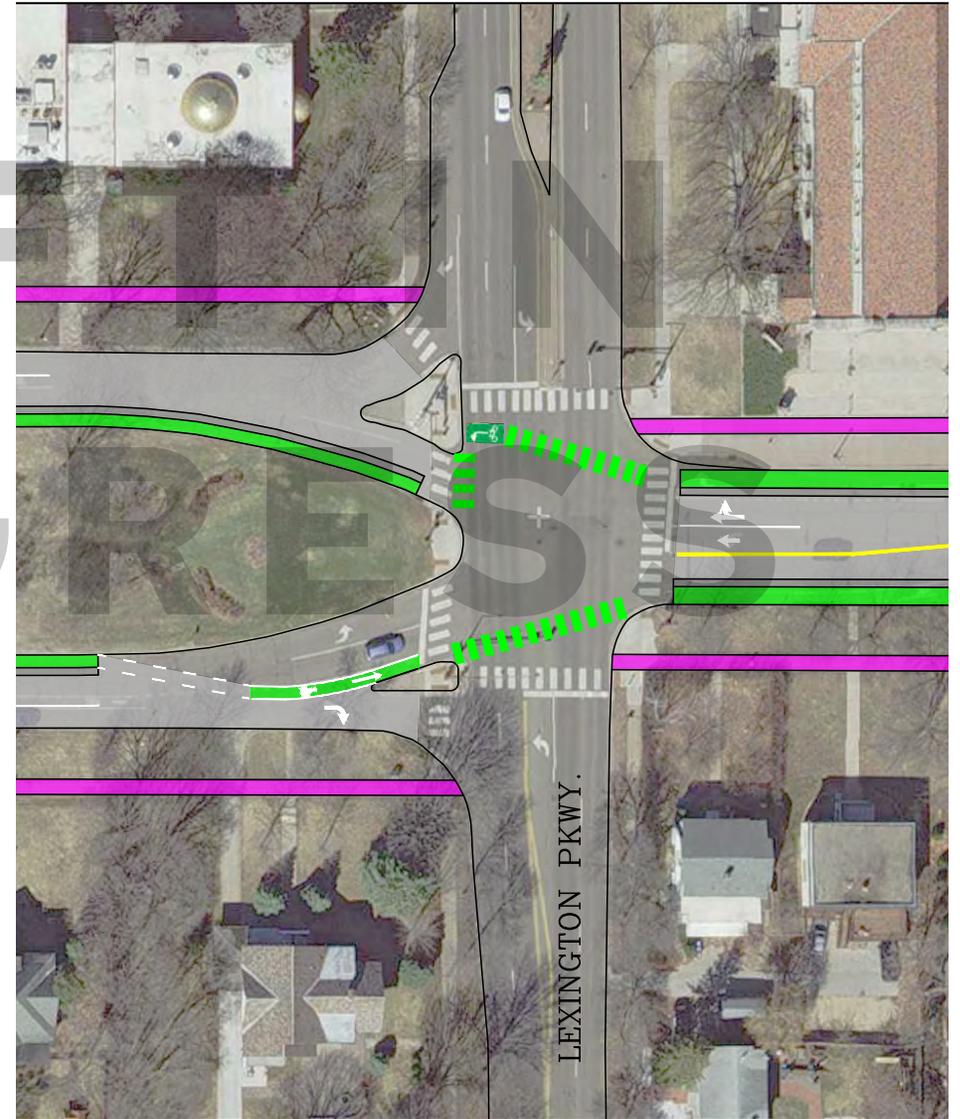
ing Ave & Summit Ave

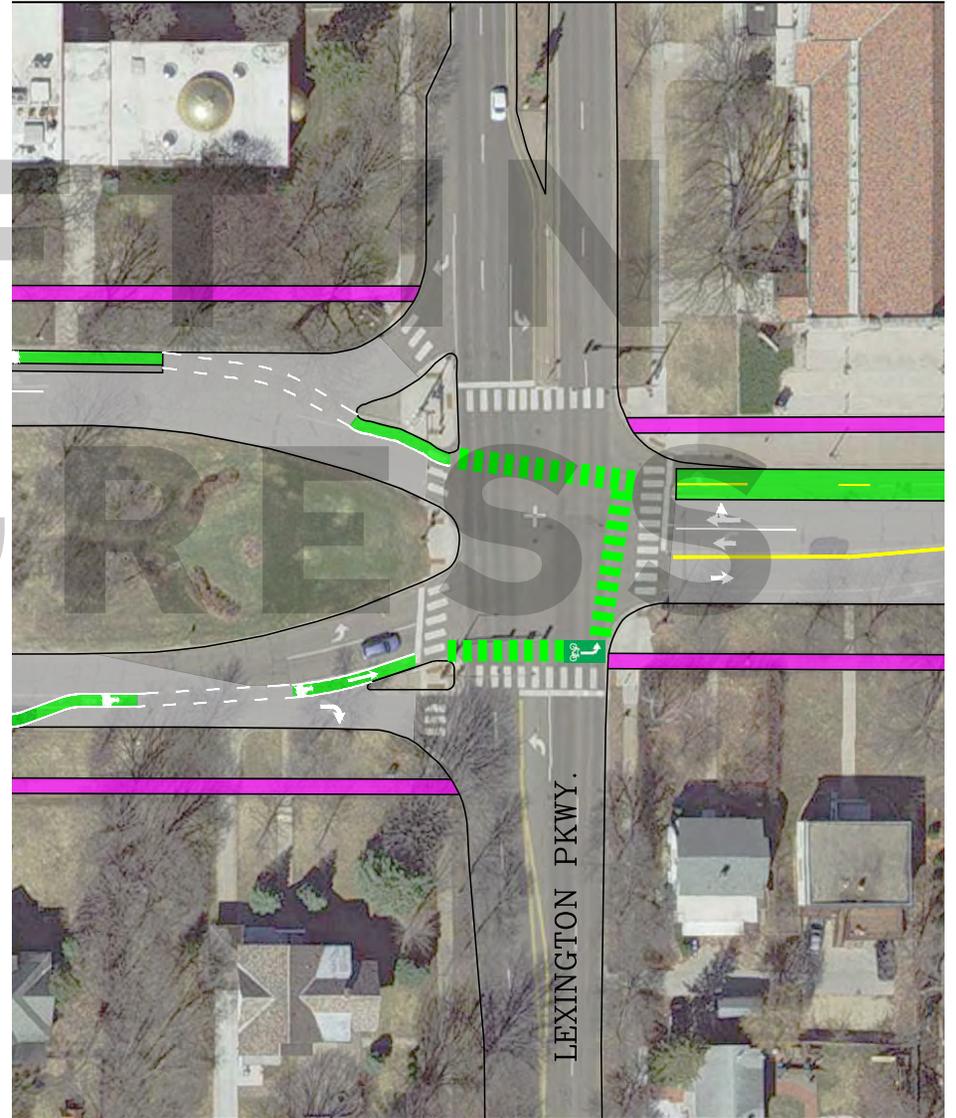
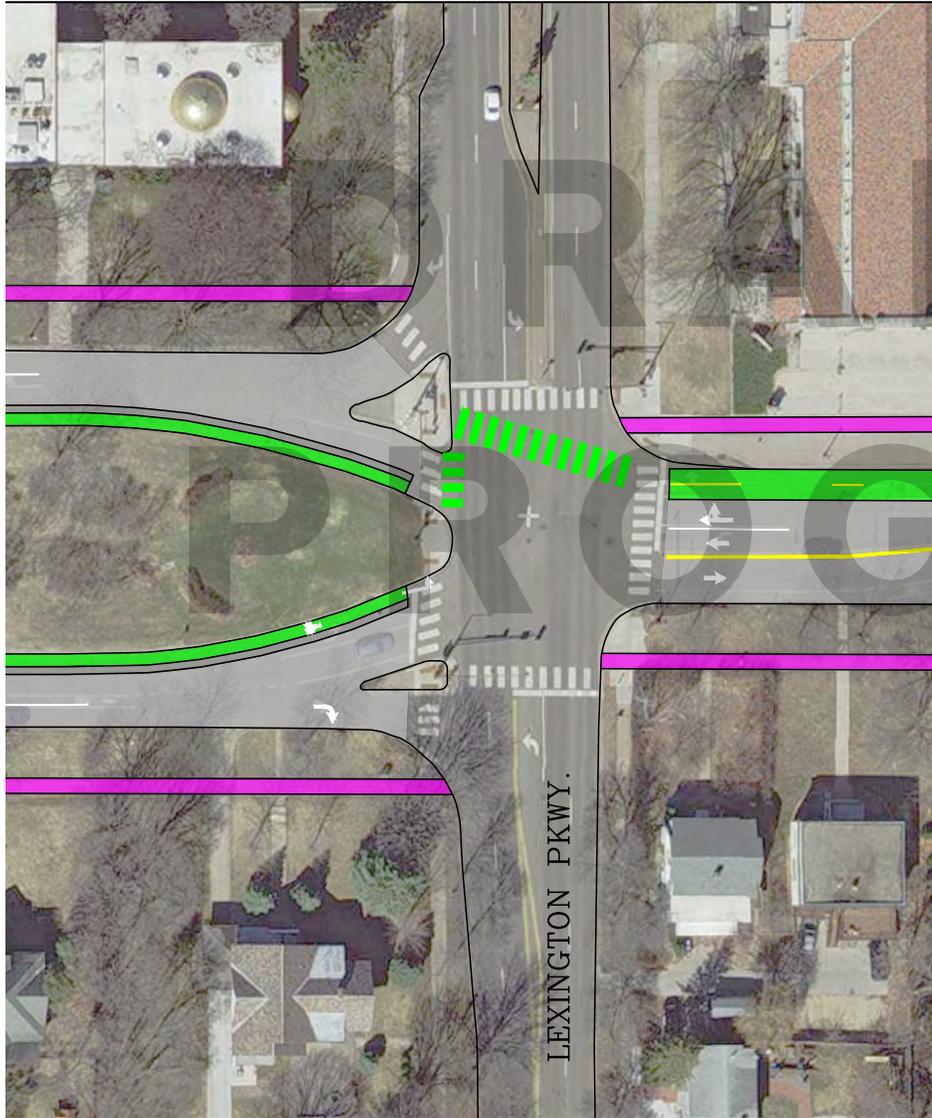
2-Way Bikeway to 1-Way Bikeway (



ington Pkwy & Summit Ave

1-Way Bikeway (Median) to 1-W





Technical Memorandum #3 | Trail Configurations Alternatives

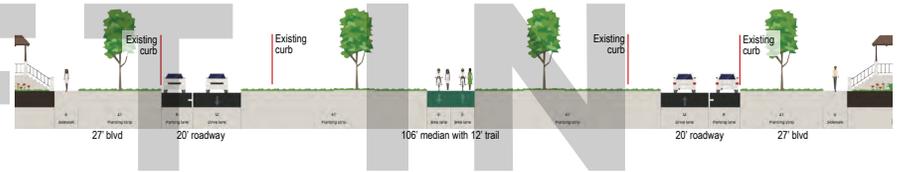
DRAFT
PROGRESS

Existing Typical Section

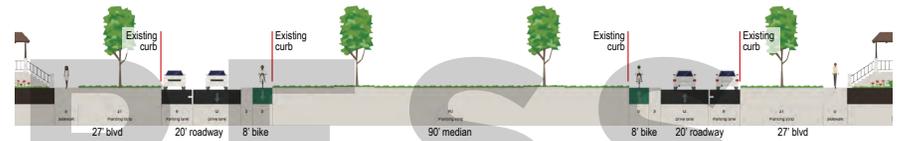


Multiuse Trail Facility in Median

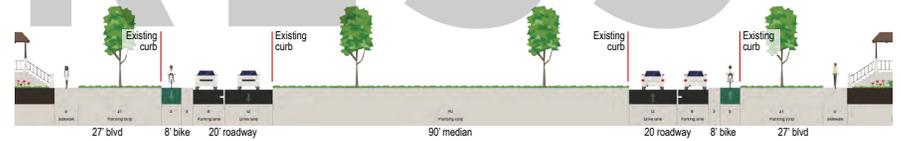
- could be located in the center or at back of curb
- expand median by 16-feet



One-Way Separated Bicycle Facility at Median Edge



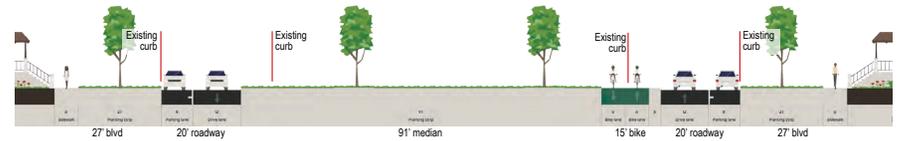
One-Way Separated Bicycle Facility at Boulevard



Two-Way Separated Bicycle Facility at Median Edge

- existing space for bike lane reallocated to median or blvd, can be incorporated as additional greenspace
- similar median impacts to multi-use trail facility in median

Ayd Mill Bridge,
one-way facilities



Two-Way Separated Bicycle Facility at Boulevard

- existing space for bike lane reallocated to median or blvd, can be incorporated as additional greenspace
- impacts to both sides of existing median

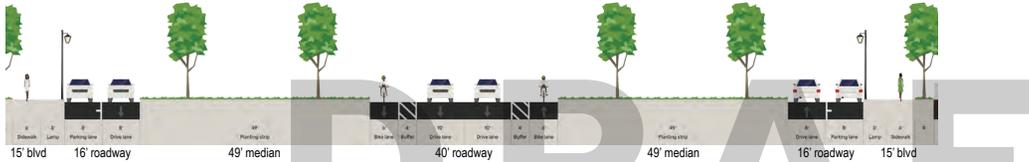
Ayd Mill Bridge,
one-way facilities



MENT B

right-of-way, double median

Existing Typical Section



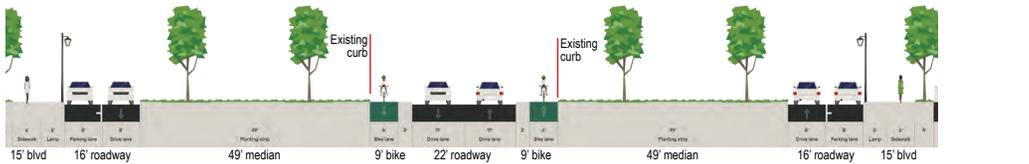
Use Trail Facility in Median

ould be located in the center or at back of curb
pand both medians by 9-feet - greenspace and trail facility



Way Separated Bicycle Facility at Median

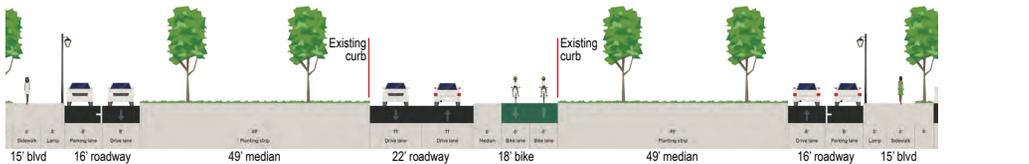
impact to median greenspace
ove minimum bike standards (4-feet flex)



Separation
pedestrian fa

Way Separated Bicycle Facility at Median

impact to median greenspace
ove minimum bike standards (3- to 5-feet flex)



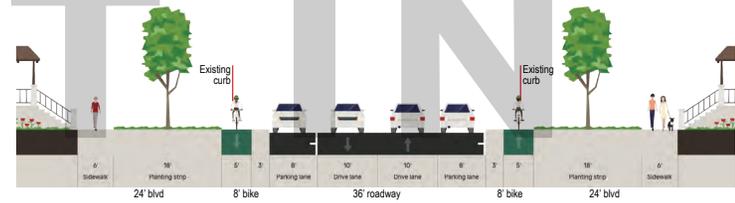
Separation
pedestrian fa

Existing Typical Section



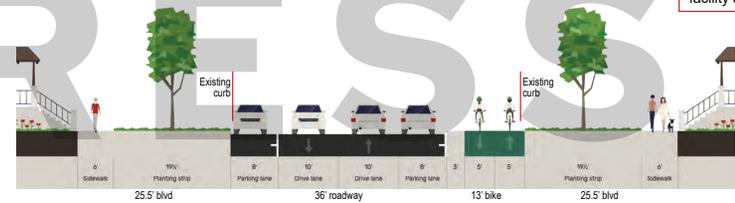
One-Way Separated Bicycle Facility

• 2-foot impact to boulevard greenspace (each side)



Two-Way Separated Bicycle Facility

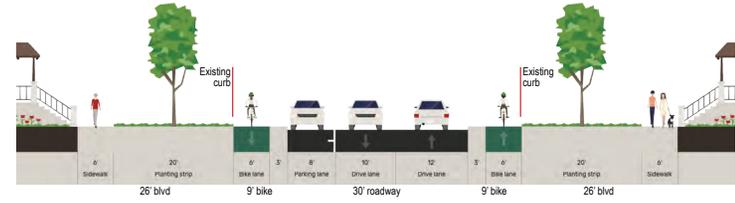
• .5-foot impact to boulevard greenspace (each side)



Proposed two-way
facility at Kellogg

One-Way Separated Bicycle Facility - Remove Parking

• No impact to boulevard greenspace



Two-Way Separated Bicycle Facility - Remove Parking

• No impact to boulevard greenspace



Proposed two-way
facility at Kellogg

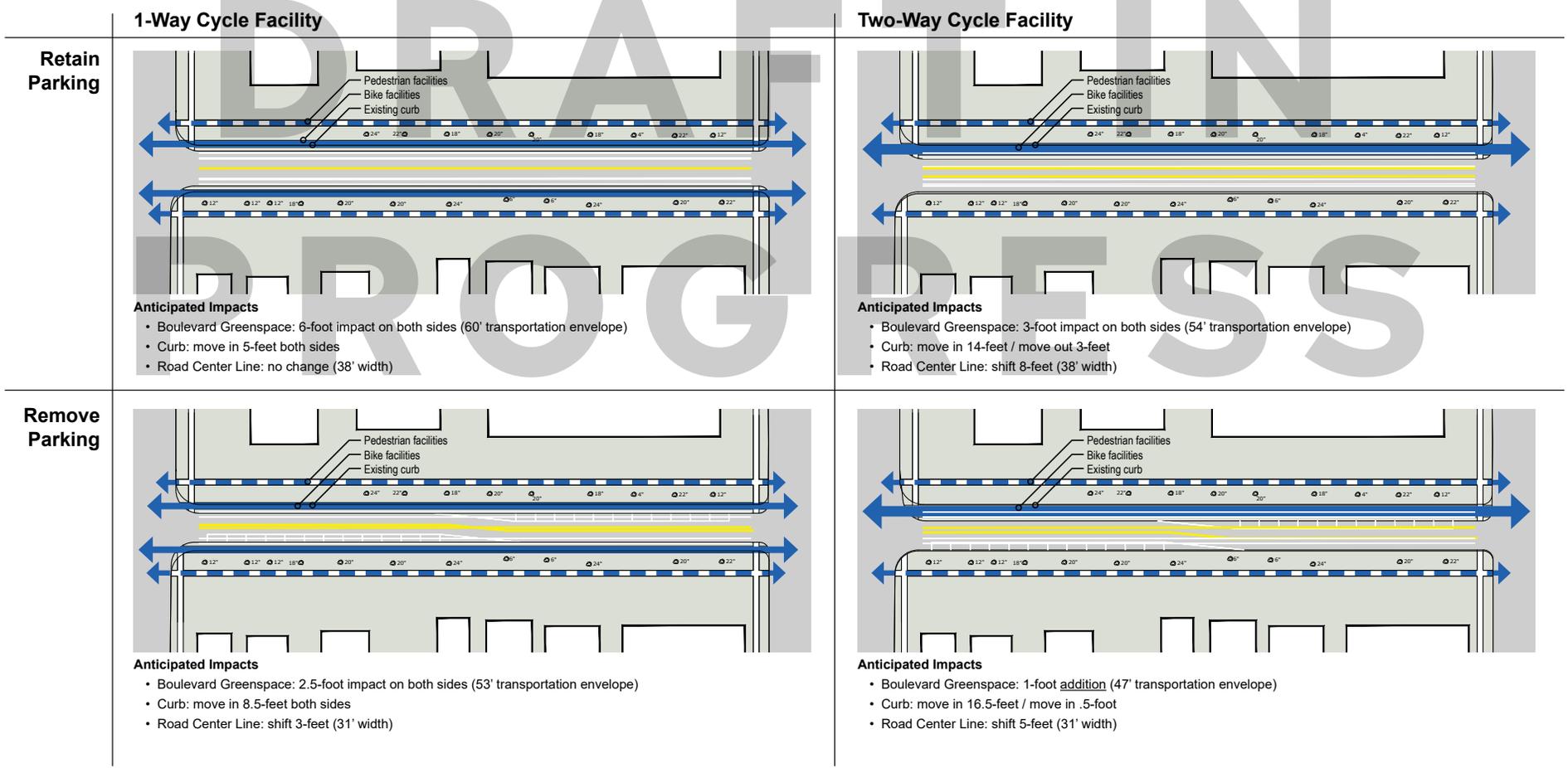
Technical Memorandum #3 | Parking Considerations

SEGMENT D/E/F - PARKING CONSIDERATIONS & IMPACTS

100' right-of-way, no median

City Preferred Minimum Dimensions: 11'/12' Traffic Lanes; 8' Parking; 4' Buffer, 7' One-Way Bike Facilities, 12' Two-Way Facilities

Existing Conditions
• Transportation Envelope (road width): 48'



Technical Memorandum #3 | Evaluation Matrix

**Summit Avenue Regional Trail Master Plan
Alternative Matrix
Concept Layout Overview
April 2022**

Criteria	Segment A/C			Segment B			Segment D/E/F	
	Trail in Median	Road-Adjacent Bikeway at Median	Road-Adjacent Bikeway at Boulevard	Trail in Median	Road-Adjacent 1-way Bikeway	Road-Adjacent 2-way Bikeway	Road-Adjacent 1-way Bikeway	Road-Adjacent 2-way Bikeway
Increase pedestrian and bicycle safety	0	+	++	0	+	++	++	++
Comfortable trail experience supporting an all ages and abilities facility	0	+	+	0	+	+	+	+
Support high quality regional trail experience	+	0	0	+	0	+	0	+
Compatible with historic context	-	+	+	-	+	+	0	+
Limits impacts to greenspace and trees	-	++	++	-	++	++	0	+
Limits impacts to vehicle and parking functions	++	+	+	++	++	++	+	+
Meets standard level of service for maintenance	+	0	0	+	0	0	0	0

Legend			
-	0	+	++
Does Not Meet Measure	Somewhat Meets Measure	Meets Measure	Exceeds Measure

AFT IN

Summit Ave Regional Trail Alternative Evaluation

Objectives	Measures	Measure Definitions
Increase pedestrian and bicycle safety	Trail connectivity/consistency	
	Separation of bicycle traffic from transit	
	Separation of bicycle traffic from vehicle traffic	
	Reduced crossing distance	Reduced exposure time
	Improved visibility of pedestrians to drivers	Sight line review, Stopping Sight Distance, Decision Sight Distance, Pedestrian Sight Distance
Comfortable trail experience supporting an all ages and abilities facility	Provides separate pedestrian and bicycle facilities	
	Reduces barriers to accessible facilities	
	Trail facility design meets state and federal standards	
Support high quality regional trail experience	Maximize wayfinding and amenity opportunities	
	Limits impacts to character-defining visuals	Limited use of vertical obstructions higher than the curb
Compatible with historic context	Limits impacts to green space	
	Prioritizes use of existing areas of pavement	
Limits impacts to greenspace and trees	Impacts to existing tree canopy in ROW	
	Limits impacts to green space	
Limits impacts to vehicle and parking functions	Parking impacts	Net loss of parking spaces
	Impacts to vehicular traffic patterns	
Meets standard level of service for maintenance	Net increase/decrease in required maintenance	
	Level of effort for winter maintenance	Equipment used and time to clear

CONCEPTS							
Trail in Median	Segment A/C			Segment B		Segment D/E/F	
	Road-Adjacent Bikeway at Median	Road-Adjacent Bikeway at Boulevard	Trail in Median	Road-Adjacent 1-way Bikeway	Road-Adjacent 2-way Bikeway	Road-Adjacent 1-way Bikeway	Road-Adjacent 2-way Bikeway
-	++	++	-	++	++	++	++
0	++	+	0	+	+	+	+
++	0	++	++	0	++	++	++
Not a differentiator at concept stage To be determined with corridor-wide safety improvements toolbox							
0	++	++	0	++	++	++	++
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
++	-	0	++	0	+	0	+
Not a differentiator at concept stage To be determined with corridor-wide safety improvements toolbox Item also covered under Goal #5							
-	++	++	-	++	++	0	+
-	++	++	-	++	++	+	++
-	++	++	-	++	++	0	+
++	+	+	++	++	++	+	+
Not a differentiator at concept stage To be determined with corridor-wide safety improvements toolbox							
0	0	0	0	0	0	0	0
++	0	0	++	0	+	0	+
0	+	+	0	+	++	+	+

Scoring Criteria
1 = bike/ped facilities separated by traffic, 2 = bike/ped facilities separated by boulevard w/ 1-way bikeway, 3 = 1 = no bike facilities, 2 = shared facilities, 3 = separate buffered, but loads into bike facility, 4 = separate buffered facilities
1 = no bike facilities, 2 = <3' separation, 3 = 3'-5' separation, 4 = >6' separation
1 = <5' reduction, 2 = 5'-10', 3 = 10'-15', 4 = 15'+
Factors that would reduce speed: Reduced Lane Width, Parking, Reduced General Traffic Lanes, Trees in Blvd. 1 =
1 = no bike facilities, 2 = mixed facilities, 3 = separate facilities, 4 = vertically separated facilities
All concepts will provide accessible facilities
All concepts will meet state and federal standards
1 = bike & ped separated by traffic, 2 = one-way bike & ped separated by Blvd, 3 = two-way bike & ped separated by Blvd
1 = >5' encroachment, 2 = 1'-5' encroachment, 3 = <1' encroachment, 4 = no encroachment
1 = impacts to >25% tree canopy, 2 = impacts to 10-25% tree canopy, 3 = impacts to <10% tree canopy, 4 = no impacts to
1 = >5' encroachment, 2 = 1'-5' encroachment, 3 = <1' encroachment, 4 = no encroachment
1 = loss of >25%, 2 = loss of 10-25%, 3 = loss of < 10%, 4 = no loss
2 = requires additional maintenance, 3 = maintains levels of maintenance, 4 = requires less maintenance
2 = multiple equipment passes, potential to haul-off snow, 3 = one equipment pass, potential to haul-off snow, 4 = one

**Historic Resources Technical
Memorandum**



DRAFT
PROGRESS

**Summit Avenue Regional Trail Master Plan
Historic Resources Technical Memo**

By:
Renee L.H. Barnes, MFA
Prepared for:
City of Saint Paul

Prepared by:
Bolton & Menk, Inc.
12224 Nicollet Ave
Burnsville, MN 55337
P: (952) 890-0509

March 2022

Summit Avenue Regional Trail Master Plan Historic Resources Technical Memo
 Prepared for the City of St. Paul

Principal Investigator & Author
 Renee L. H. Barnes, MFA

DRAFT
 IN
 PROGRESS

Table of Contents

INTRODUCTION 4
 Project Information 4
 LAWS AND RESPONSIBILITIES 4
 Federal Laws and Guidance 4
 State Laws 5
 Local Laws 5
 SUMMARY OF HISTORIC RESOURCES 5
 Character Defining Features 6
 PRECEDENTS 16
 Minnesota 16
 National 17
 REHABILITATION AND DESIGN GUIDELINES 37
 National Park Service 37
 St. Paul 38
 Minneapolis 38
 Virginia Beach, VA 39
 Greensboro, NC 39
 Santa Ana, CA 39
 Pittsburgh, PA 39
 SUMMARY AND RECOMMENDATIONS 40
 SOURCES CONSULTED 41

Figures

Figure 1. Aerial Map of Historic Districts 9
 Figure 2. Sanborn Map from 1888 showing Summit and Portland. 10
 Figure 3. Sanborn Map from 1903 showing Summit and Portland. 11
 Figure 4. View of Summit Avenue near Macalester College, looking west, 1890. 12
 Figure 5. View of Summit Avenue from rooftop, looking northwest, c. 1900..... 13
 Figure 7. Aerial from mid-1920s of Summit Avenue, between Fairview and Snelling Avenues. .. 15
 Figure 8. Saint Paul, Jackson Street at 7th Place, looking south 20
 Figure 9. Saint Paul, Jackson Street at Kellogg, looking north 21
 Figure 10. Minneapolis, South 1st Avenue and East 24th Street intersection, looking to the north..... 22
 Figure 11. Minneapolis, South 1st Avenue and East 26th Street, looking to the north. 23
 Figure 12. Minneapolis, View of East 24th Street and South 1st Avenue intersection, looking east..... 24
 Figure 13. Minneapolis, View of East 26th Street and South 1st Avenue intersection, looking east..... 25
 Figure 14. Minneapolis, View of East 26th Street and South 3rd Avenue intersection, looking west..... 26
 Figure 15. Minneapolis, View of 5th Street Southeast, looking east..... 27
 Figure 16. Minneapolis, View of 4th Street Southeast and 8th Avenue Southeast intersection,

looking northwest	28
Figure 17. Rochester, View of 6 th Street Southwest, looking east.....	29
Figure 18. Virginia Beach, View of Atlantic Avenue, looking south.....	30
Figure 19. Greensboro, View of Spring Garden Street and Cedar Street intersection, looking southwest.....	31
Figure 20. Greensboro, View of Spring Garden Street and South Tate Street, looking southeast.....	32
Figure 21. Santa Ana, View of Civic Center Drive E and N Bush Street intersection, looking east.....	33
Figure 22. Santa Ana, View of Civic Center Drive E and Minter Street intersection, looking west.....	34
Figure 23. Pittsburgh, View of Brighton Road, looking north.....	35
Figure 24. Pittsburgh, View of Brighton Road and North Avenue intersection, looking south.....	36

DRAFT
PROGRAM

INTRODUCTION

PROJECT INFORMATION

The City of St. Paul Parks and Recreation Department is developing a Master Plan for Summit Avenue Regional Trail. In this Master Plan the City will review the corridor from the Mississippi River to Downtown St. Paul. The Master Plan is evaluating opportunities, constraints, and feasibility of a regional trail facility within the Summit Avenue corridor.

One such constraint is that Summit Avenue is the location of two National Register of Historic Places-listed Historic Districts (National Register) and numerous individually listed historic properties. This memo will address numerous questions (listed below) the City has regarding the vast history and architectural character of the above mentioned resources.

- What are the character defining features of the landscape? What role do those play in guiding new features?
- What is the rhythm of street curb? What was there previously? What would the scale of new elements need to be and where could they be implemented?
- How has the public right-of-way evolved through time? As a designed landscape, how is the historical design intent defined, what uses have endured from the way people use the space, or have changed? (example of 1923 informal paths and current footpaths, St. Paul Bicycling early 1900s)
- What new features could be introduced to a historic landscape? What would we need to consider during design such that they are unlikely to be an adverse effect?
 - What project precedents exist?
 - What will the process be for implementation?

This memo will consolidate the character defining features into one document as an easy reference for planners of the above referenced Master Plan. The memo will document the changes through time and explore what new features could be introduced. It will provide examples of pedestrian and bike facilities within historic districts and how those addressed addition of these facilities to the district.

LAWS AND RESPONSIBILITIES

Before these questions can be addressed it is important to understand the laws that offer protection to individual historic resources and districts. There are federal, state, and local laws that can guide the work that occurs within or adjacent to these properties. Additionally, these laws also dictate the parties that should be involved in decisions regarding the work within these properties.

FEDERAL LAWS AND GUIDANCE

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies consider the effects of undertakings/projects involving historic properties. An undertaking can be any construction project the federal government provides money to, permits, or has jurisdiction over. Therefore, a project with a federal tie must adhere to Section 106 regulations. Since the Summit Avenue area has been researched intensely most of the regulations that relate to Assessment of Effects on historic properties will be the most useful. An Effect is defined as “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.” In addition to the

Prepared by: Bolton & Menk, Inc.

Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

INTRODUCTION

4

NHPA guidance the National Park Service (NPS) provides guidance on how to limit adverse effects of new construction within the boundaries of historic properties within their Standards for Rehabilitation, specifically Standard 9 but also expanded to be more specific on their website.¹ Additionally, the NPS has developed guidance specifically for Cultural Landscapes.² In the broadest sense a cultural landscape is a historically significant property that shows evidence of human interaction with the physical environment. Even though the historic districts discussed below were listed prior to a formal definition of cultural landscapes by the NPS, it is important to take these guidelines for their treatment into consideration. The NPS guidance provided below will aid in the discussion about new features or designs that could be incorporated into the historic districts.

If a project has a federal nexus, the designated federal agency will need to participate in review of the Undertaking and decide on whether proposed actions will cause an adverse effect to the National Register properties.

STATE LAWS

The Minnesota Historic Sites Act (MS 138.661-138.669) states that the state, state departments, agencies, and political subdivisions (which responsible government unit [RGU], i.e. cities or municipalities) have a responsibility to protect the physical features and historic character of the properties listed in the National Register or in the State Register.

If a project only has state or local involvement, the State Historic Preservation Office (SHPO) would be consulted regarding the undertaking, determine appropriate treatments, and seek ways to avoid, minimize, and/or mitigate any adverse effects on the designated or listed properties.

LOCAL LAWS

Lastly, if a city has adopted a historic designation for districts or individual properties, they may have their own guidelines written in the municipal code that provide guidance regarding protecting the physical features and historic character of these properties. Specifically, the City of St. Paul's Code of Ordinances Chapter 74, Articles I and II relate to the district's Summit Avenue West Heritage Preservation District and Heritage Hill Historic Preservation District, respectively.³ The guidelines focus are the structures within the district rather than the streetscape, but there are a few references to Public Infrastructure, New Construction, Landscaping, and Signs that will be valuable in guiding design within the districts.

The City of St. Paul Heritage Preservation Commission would be consulted regarding the undertaking, suggest appropriate treatments, and seek ways to avoid and mitigate any adverse effects on the designated properties.

SUMMARY OF HISTORIC RESOURCES

Summit Avenue has been a prominent and prestigious avenue for building residences in St. Paul since the 1850s. It was recognized early on that the buildings along this stretch of Summit Avenue were unique, needed to be documented, and listed in the National Register. The Historic Hill District was listed in the National Register in 1976 and is significant as the largest concentration of nineteenth and

¹ <https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>

² <https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm>

³ The National Register listing names the Heritage Hill Historic Preservation District as Historic Hill District. This formal name will be used through the rest of the memo.

Prepared by: Bolton & Menk, Inc.

Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

early twentieth century architectural styles in Minnesota. The period of significance for the district is the 1880s to the 1930s and the boundary comprises approximately seventy-five blocks (Figure 1).⁴

The West Summit Avenue Historic District was listed in the National Register in 1993. The district is significant for community planning and urban development, and the largest unbroken avenue of Colonial Revival and Classical Revival-style architect-designed houses in the Twin Cities. The period of significance for the district is 1885 to 1938 and the boundary is approximately 2.5 miles along Summit from Lexington Parkway on the east and the Mississippi River Boulevard to the west (see Figure 1).

Moreover, there are seven individually listed National Register properties along Summit Avenue, which are also contributing resources to the above referenced districts. They are listed below as they appear on Summit from the east to the west:

- St. Paul Cathedral, 225 Summit Avenue (national only)
- James J. Hill House, 240 Summit Avenue (state and nationally listed)
- Burbanks-Livingstone-Griggs House (James C. Burbank House), 432 Summit Avenue (state and nationally listed)
- F. Scott Fitzgerald House (Summit Terrace), 587-601 Summit Avenue (state and nationally listed)
- Irvine, Horace Hill, and Clotilde House (Governor's House), 1006 Summit Avenue
- Pierce and Walter Butler House, 1345-1347 Summit Avenue
- Dr. Ward Beebe House, 2022 Summit Avenue

Each of the above listed districts and individual properties are also locally designated as a Local Heritage Preservation district or property (unless otherwise noted above).

CHARACTER DEFINING FEATURES

This discussion will focus on the districts and the features of Summit Avenue specifically since the individual properties are contributing to the whole. Any character defining features adversely effected by the undertaking would in-turn be an adverse effect on the individual properties.

Historic Hill District

The Historic Hill District encompasses many more streets than just Summit Avenue and the bulk of the focus of this nomination is on the substantial structures in this district. For this early nomination character defining features are not called out directly, especially not in relation to the streetscape. The nomination is split into areas and "Area 2" is reserved just for the sixteen-block segment of Summit Avenue from Kellogg Boulevard to Lexington Parkway. The historic context does say that Summit Avenue was and still is home to large mansion-type residential properties on spacious lots. Summit Avenue was the first offshoot from the main downtown area, and it provided excellent building sites on the bluff's edge. The nomination also points out it was undeveloped and a clean slate for development with plenty of space to build large homes.⁵ It is expected that with these large homes, associated landscape and streetscape would also be very important.

Other resources help to determine that the street width was planned early on. The 1888 and 1903 Sanborn Maps for Summit Avenue shows a 100-foot avenue. In comparison, adjacent streets Grand Avenue to the south was 80 feet and Portland Avenue to the north was 66 feet. A review of other

⁴ The figure shows the local, state and National Register boundaries.

⁵ *Historic Hill District*, National Register of Historic Places Nomination Form, available from:

<https://npgallery.nps.gov/GetAsset/a8ab70fe-59a3-4d80-b71f-181710588c01>

Prepared by: Bolton & Menk, Inc.

Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

roadways, from a very early timeframe within the city.

West Summit Avenue Historic District

The West Summit Avenue Historic District encompasses mainly the parcels fronting Summit Avenue. This nomination was completed in the early 1990s and offers more insight into the character-defining features of the streetscapes. In the description of the property types found in the district it notes that the district includes “the parkway and its electric lighting stretching from Lexington to Mississippi River Boulevard, one marble sidewalk, wrought iron and/or brick fences, brick piers, a monument, a flagpole, and miscellaneous outbuildings.” It goes on to call out the “most visually distinguishing feature of the avenue is its width and median boulevard.” From Lexington to mid-block west of North Saratoga Street and from just east of North Wheeler Street to Mississippi Boulevard, Summit Avenue maintains a 200-foot-wide street with a median encompassing 90 feet of that width. The nomination goes on to state that this wide boulevard was accomplished by a group of citizens in 1886 who organized as the Summit Avenue Boulevard and Park Association to widen the street. Property owners along this stretch gifted the land to the city to accomplish this. The boulevard was started the next year. This interest in a boulevard also has its roots in the hiring of H.W.S. Cleveland, who consulted for the City of St. Paul on the outline of the park system in the city. Cleveland noted Summit Avenue as an excellent area for such a parkway with wide boulevards and he advocated that these were superior to isolated and discrete neighborhood parks.⁷

Considering the interest in the public to create a street that was grand and noteworthy, Summit Avenue did experience some neglect in the beginning years as noted in park board annual reports from 1898, 1901, and 1903, but by 1907 it was noted that the avenue was in good condition and trees were trimmed. It remained a dirt road until sometime around 1913-1924 when it was completely paved.⁸

Granite curbing is not called out in the nominations but was widely used throughout St. Paul and is still used in portions of Summit Avenue. If an inventory of the remaining granite curb along Summit has not been completed recently, it is recommended that is done before any work on the street is performed.

After a review of these sources, it is clear the character-defining features are:

- The width of Summit Avenue:
 - 100 feet between Kellogg Boulevard and Lexington Avenue (this measurement includes the 48-foot roadway and two 28-foot grassy boulevard)
 - 200 feet between Lexington Avenue and Mississippi River Boulevard (this measurement includes the 90-foot median, two 28-foot roadways, and two 27-foot boulevards)
- Maintaining the 90-foot median where it exists between Lexington Avenue and Mississippi Boulevard.
- If granite curbs or marble sidewalks do still exist, these should be considered character-defining features and incorporated back into place if possible.

⁶ Sanborn Map Company, 1888 Volume 3, page 60, available from: <https://www.loc.gov/collections/sanborn-maps/?fa=location:minnesota%7Clocation:saint+paul>; Sanborn Map Company, 1903 Volume 2, page 51, available from: <https://www.loc.gov/collections/sanborn-maps/?fa=location:minnesota%7Clocation:saint+paul>

⁷ *West Summit Avenue Historic District*, National Register of Historic Places Registration Form, available from: <https://npgallery.nps.gov/GetAsset/109d6f44-c9af-4cb2-8f63-4ad938f772f0>

⁸ *West Summit Avenue Historic District*, National Register of Historic Places Registration Form, available from: <https://npgallery.nps.gov/GetAsset/109d6f44-c9af-4cb2-8f63-4ad938f772f0>

Prepared by: Bolton & Menk, Inc.

Changes Over Time

It is not hard to believe a neighborhood in a quickly growing city that was platted over 140 years ago would experience change. While most of the research supports that the width of the street has not changed over the years, the question remains what has changed within that street width and if any of those changes could support a change now for a trail facility along Summit Avenue.

An early photograph dated 1890 from Macalester College Archives shows Summit Avenue looking west near the college (**Figure 4**). On the left-hand side of the photograph are early professors' houses and a church. The photograph looks down Summit at the portion between Snelling Avenue and N Wheeler Street where the main roadway divides the green boulevard space. This section is different than other portions of Summit Avenue, but it appears to have been an early design choice that has remained to this day. This photograph also shows fencing around green space. This could have been to protect the newly planted trees in the newly laid out boulevards, but it was not something that would become permanent.

Ten years later there are a few photographs that show some changes to the same area. A circa 1900 photograph from Macalester College Archives shows an aerial view from the house shown in the previous photograph (**Figure 5**). The fences appear to have been removed and paths/sidewalks have been added to the center of the divided boulevards (foreground) and down the center of the large main boulevard (background). Wooden boards are used for the sidewalks on the north side of the street. Another photograph dated circa 1900 states it is on Summit Avenue but does not say where (**Figure 6**). It looks like it could be in the same general area but there are no houses in the picture. It is assumed this is further west of Snelling looking toward the river where development was slower.

The paths down the center of the boulevard were most likely for the use of bicycles as evidence by newspaper articles in the late 1890s and early 1900s.⁹ The path is referenced to be made of crushed stone, which can be confirmed in Figure 3 referenced above. The paths are very white in the photograph.

Aerials from the mid-1920s show that the bike paths down the middle of all the medians were no longer there (**Figure 7**). The sidewalks were a short-lived concept and the area returned to the green space that was originally planned.

While there were some changes along Summit Avenue in early years, it was returned to the basic configuration seen today. Additionally, since the aforementioned bike paths were only installed for a brief time in contrast to Summit Avenue's long history, it is not something that can be considered a character-defining feature within the period of significance for the districts. In summary the integrity of Summit Avenue's streetscape is still well preserved as first conceived as a broad boulevard and greenspace.

⁹ This information comes from an article found here: <https://streets.mn/2018/06/22/restoring-summit-avenues-historic-bike-lanes/>, which also references and links the appropriate newspaper articles.

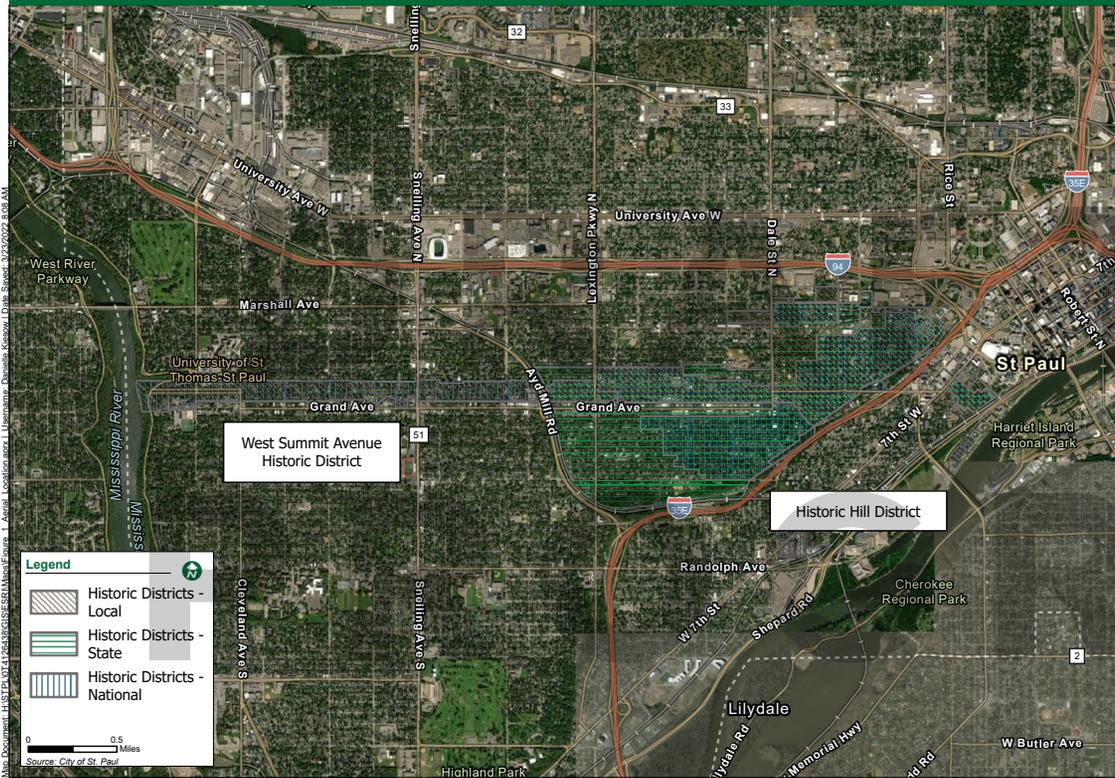
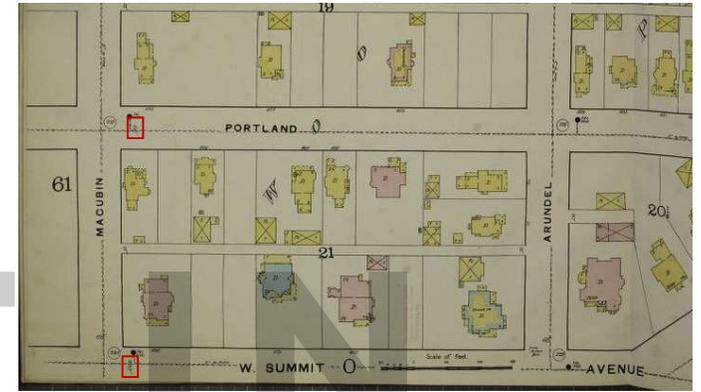


Figure 2. Sanborn Map from 1888 showing Summit and Portland.



IN
 PRESS

Figure 3. Sanborn Map from 1903 showing Summit and Portland.

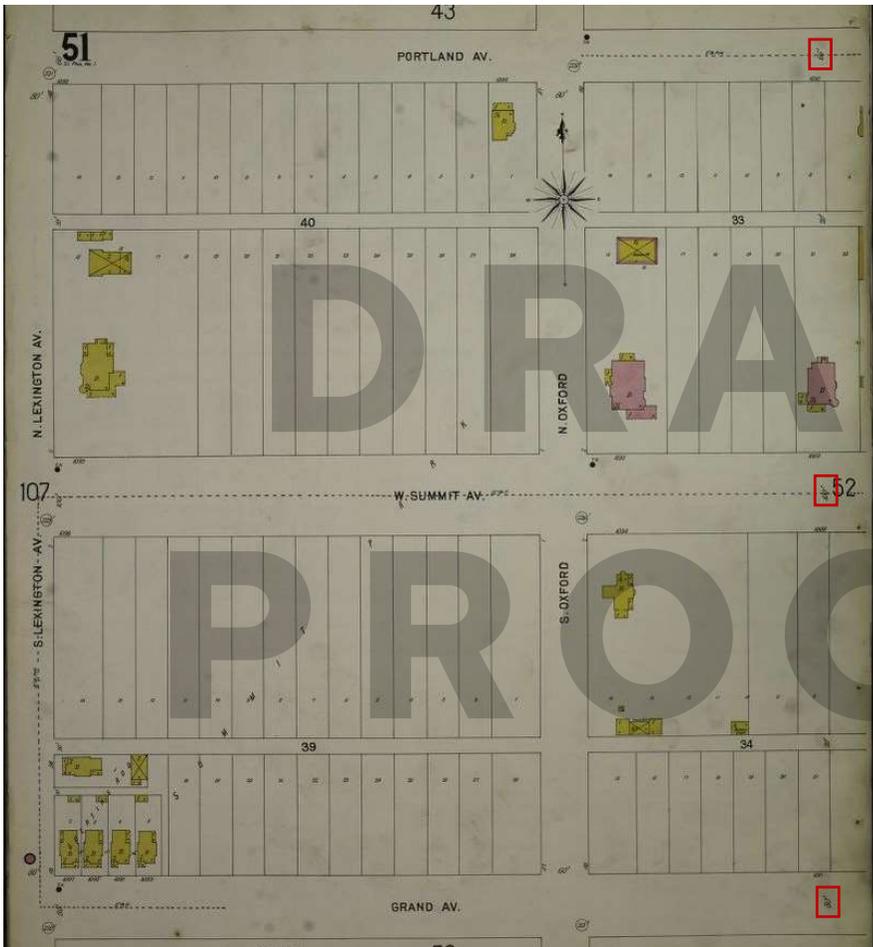


Figure 4. View of Summit Avenue near Macalester College, looking west, 1890.



Figure 5. View of Summit Avenue from rooftop, looking northwest, c. 1900.



Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

SUMMARY OF HISTORIC RESOURCES
12

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

SUMMARY OF HISTORIC RESOURCES
13

Figure 6. View of Summit Avenue, looking west, circa 1900.

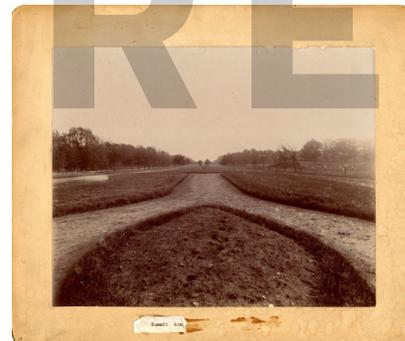


Figure 7. Aerial from mid-1920s of Summit Avenue, between Fairview and Snelling Avenue



PRECEDENTS

The Twin Cities biking facilities has experienced a boom in the last 10 years and there are numerous historic districts with these facilities within them. This section will look at those districts and provide examples and descriptions of what was done to accommodate bike/trail facilities.

MINNESOTA

St. Paul

St. Paul has five additional national, state-listed, or locally designated districts besides the Summit Avenue pair described above. Of those only one is adjacent to the installation of an off-street path dedicated to the use of bicycles. The locally designated Lowertown District is roughly bounded by Jackson Street on the west, 7th Place East on the north, Broadway Street on the east and Kellogg Boulevard East on the south and includes Union Depot. The National Register district is slightly smaller and only includes one of the four blocks along Jackson Street. The Lowertown Historic District is a collection of buildings from 1870s–1920s and is significant for its river and rail connections, economic impact, architecture, and urban planning.¹⁰

The off-street path is on Jackson Street and extends from Kellogg Boulevard East north to the I-94 corridor and it was constructed in 2016 and 2017. St. Paul has been undergoing many years of improving bicycle and trails throughout the city.

The Jackson Street is a one-way, two-lane traffic road traveling south. The project consisted of reconfiguring the roadway and sidewalk to incorporate an off-street two-lane bike lane on the west side of the street (Figures 8-9). This district is purely an urban district that does not have much in the way of landscaping or a residential feel. The bikeway has been designed in a way that is a minimal intrusion within the district. The bike lanes are denoted through different color asphalt and yellow and green pavement markings.

Minneapolis

The twin sister city of St. Paul has 18 historic districts within the city limits. For this memo a representative sample of residential districts will be reviewed since the Summit Avenue project will occur within a mostly residential neighborhood. Two residential districts located just south of downtown are located close to each other: Stevens Square and Washburn/Fair Oaks. Stevens Square is comprised of apartment buildings and single-family homes constructed during the 1910s and 1920s and is centered around Stevens Square Park. It is roughly bounded by 1st Avenue South on the west, 17th Street East on the north, 3rd Avenue South on the east and Franklin Avenue on the south. The neighborhood is significant for its part in the residential development of Minneapolis before World War I.¹¹ Washburn/Fair Oaks is comprised of significant residences built at the turn of the century by prominent Minneapolis developers. It is roughly bounded by the alley between First Avenue South and Nicollet Avenue on the west, Franklin Avenue on the north, I-35W on the east, and 26th Street East on the south.¹²

¹⁰ *Lowertown Historic District*, National Register of Historic Places Inventory-Nomination Form, available from: <https://www.rchs.com/wp-content/uploads/2017/09/National-Register-Nomination-Lowertown-Historic-District-1983.pdf>

¹¹ *Stevens Square Historic District*, National Register of Historic Places Registration Form, available from: <https://npgallery.nps.gov/GetAsset/06340d92-701f-4ce8-8e7d-91d4dea6d56b>

¹² *Washburn-Fair Oaks Historic District*, available from: <https://www2.minneapolismn.gov/resident-services/property-housing/property-info/landmarks/alphabetical/washburn-fair-oaks-historic-district/>
Prepared by: Bolton & Menk, Inc.

The main bike routes through these two historic districts are located on 1st Avenue South, 24th Street East and 26th Street east. The 1st Avenue corridor is a two-way, two-lane street with parking on the east side of the street and the bike lane markings next to the parking (Figures 10-11). The absence of a second

lane on the west side indicates this sole bike lane is for two-way traffic. The 24th Street East corridor is a two-way, two-lane street with parking on the south side only, an east-bound bike lane next to parking and then a west-bound bike lane on the north side (Figure 12). The 26th Street East corridor is a one-way, two-lane street traveling east, with parking on the south for the block between 1st Street and Stevens Avenue and a wide bike lane on the north. The bike lane is further divided with diagonal lines and has yellow plastic bollards denoting no vehicular traffic allowed in that lane (Figures 13-14).

A third historic district is located near the University of Minnesota campus, the Fifth Street Southeast Historic District, which is comprised of apartments buildings and single-family homes. The district is significant for its nineteenth century architectural styles built by influential Minneapolis citizens. It is roughly bounded by 4th Avenue Southeast on the west, the alley between 5th Street Southeast and 6th Street Southeast on the north, I-35W on the east, and the alley between 4th Street Southeast and 5th Street Southeast on the south.¹³

The main bike route through this district is 5th Street Southeast, although there is a route on 4th Street Southeast, which is just outside the district. The 5th Street Southeast corridor is a one-way, one-lane street traveling east with parking on the south side. The north side of the street has a bike lane with a double yellow line indicating the west bound bike traffic can travel using that lane. It is indicated with a pavement marking and “BLVD” that the east bound bike traffic must share the road with the east bound vehicular traffic (Figure 15).

As mentioned above the adjacent bike route exists on 4th Street Southeast is just outside the district but will be described as it appears to be an accompaniment to the 5th Street Southeast corridor. The 4th Street Southeast corridor is a one-way, two-lane street traveling west, with parking on blocks between I-35W and 6th Avenue SE the south side of the street. A bike path is marked on the pavement but instead of being directly adjacent to the curb it is offset by a couple of feet (Figure 16).

Rochester

Rochester has a residential historic district named Pill Hill, which is significant for its collection of architecturally significant houses built in the early nineteenth century till the late 1930s, and the large number of medical professionals associated with the nearby Mayo Clinic which made the area their home. The district is roughly bounded by 3rd Street Southwest on the north, 7th Avenue Southwest on the east, 9th Street Southwest on the south, and 10th Avenue Southwest on the west.¹⁴

The main bike route through this district is 6th Street Southwest corridor is a two-way, two-lane street with no parking and a bike lane on the south side of the street (Figure 17). According to an aerial from 2015 the street was restriped to accommodate the bike lane on the south side.

NATIONAL

The following examples from cities outside of Minnesota are cities that are of a similar population size to St. Paul or Minneapolis and contain historic districts that are mostly residential in character.

¹³ *Fifth Street Southeast Historic District*, available from: <https://www2.minneapolismn.gov/resident-services/property-housing/property-info/landmarks/alphabetical/fifth-street-southeast-historic-district/>

¹⁴ *Pill Hill Residential Historic District*, National Register of Historic Places Registration Form, available from: <https://npgallery.nps.gov/GetAsset/0d11339c-02c9-489b-b305-599a231a0660>

Virginia Beach, Virginia

Virginia Beach has a residential historic district named Cavalier Shores, which is significant for being platted by Cavalier Shores a subsidiary of the adjacent Cavalier Hotel for having a collection of revival styles prevalent in the late 1920s and 1930s. The period of significance for the district is 1927 to 1968 and is roughly bounded by 45th Street on the north, the Atlantic Ocean on the east, Cavalier Drive on the south, and Holly Road on the east.¹⁵

The main bike route through this district is Atlantic Avenue (US 60), which is a two-way, four-lane street with a grassy and landscaped boulevard with no parking. The bike route is an off-street asphalt path located on the west side of the road. (Figure 18).

Greensboro, North Carolina

Greensboro has a residential historic district named College Hill Historic District, which is significant for being among Greensboro most important and intact late nineteenth and early twentieth century neighborhoods. The period of significance for the district is 1837 to 1941 and is roughly bounded by W. Market Street S. on the north, S. Cedar Street on the east, Oakland Avenue on the south, and McIver Street on the west.¹⁶

The main bike route through this district is Spring Garden Street, which is a two-way, two-lane street with a grassy boulevard for a portion of the street through the district. There is occasional parking on the north side of the street where there is no boulevard. The bike lanes are marked on the north and south side of the street (Figures 19-20).

Santa Ana, California

Santa Ana has a residential historic district named French Park Historic District, which is significant as an intact 1890s to 1920 neighborhood. The district is roughly bounded by E Washington Avenue on the North, N Garfield Street on the east, Civic Center Drive E on the south and N Bush Street on the west.¹⁷

The main bike route is adjacent to the district and the southern boundary of the district, Civic Center Drive E, which is a two-way, four-lane street with bike lane indications in the northern and southern most lanes. At the intersection of N Bush Street and Civic Center Drive E there is a green square marking a bike route and a sign on the south side of street indicating bikes may use the full lane (Figure 21). This is the condition until the last two blocks of the historic district where the street turns into a two-way, two-lane street with curb bump outs and roundabouts at the intersections (Figure 22). No specific markings are identified for a bike lane.

Pittsburgh, Pennsylvania

Pittsburgh has a residential historic district named Allegheny West Historic District, which is significant as a collection of late nineteenth and early twentieth century revival architecture. The district is roughly bounded by Jabok Way on the north, Brighton Road on the east, Ridge Avenue on the south, and Allegheny Avenue on the west.

The main bike route through the historic district is the western boundary Brighton Avenue, which is a two-way, two-lane street with parking on the east and west sides. A pavement marking indicates the

¹⁵<https://www.vbgov.com/news/pages/selected.aspx?release=4123&title=cavalier+shores+historic+district+listed+in+virginia+landmarks+register#:~:text=Cavalier%20Shores%20encompasses%20approximately%20seven,of%20the%20adjacent%20Cavalier%20Hotel.>

¹⁶ College Hill Historic District, National Register of Historic Places Registration Form, available from <https://files.nc.gov/ncdcr/nr/GF1248.pdf>

¹⁷ French Park Historic District, National Register of historic Places Registration Form, available from <https://npgallery.nps.gov/GetAsset/8e137761-f560-4541-8eae-aac17c51d6bb>

Prepared by: Bolton & Menk, Inc.

Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
18

Figure 8. Saint Paul, Jackson Street at 7th Place, looking south



Figure 9. Saint Paul, Jackson Street at Kellogg, looking north



Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
20

Figure 10. Minneapolis, South 1st Avenue and East 24th Street intersection, looking to the north.



Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
21

Figure 11. Minneapolis, South 1st Avenue and East 26th Street, looking to the north.



Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
22

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
23

Figure 12. Minneapolis, View of East 24th Street and South 1st Avenue intersection, looking east.



Figure 13. Minneapolis, View of East 26th Street and South 1st Avenue intersection, looking east.



Figure 14. Minneapolis, View of East 26th Street and South 3rd Avenue intersection, looking west.



Figure 15. Minneapolis, View of 5th Street Southeast, looking east.



DRAFT IN

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
24

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
25

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
26

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
27

Figure 16. Minneapolis, View of 4th Street Southeast and 8th Avenue Southeast intersection, looking northwest.



Figure 17. Rochester, View of 6th Street Southwest, looking east.



Figure 18. Virginia Beach, View of Atlantic Avenue, looking south.



Figure 19. Greensboro, View of Spring Garden Street and Cedar Street intersection, looking southwest.



Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
28

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
29

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
30

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
31

Figure 20. Greensboro, View of Spring Garden Street and South Tate Street, looking southeast.



Figure 21. Santa Ana, View of Civic Center Drive E and N Bush Street Intersection, looking east.



Figure 22. Santa Ana, View of Civic Center Drive E and Minter Street Intersection, looking west.



Figure 23. Pittsburgh, View of Brighton Road, looking north.



DRAFT IN

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
32

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
33

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
34

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
35

Figure 24. Pittsburgh, View of Brighton Road and North Avenue intersection, looking south.



PROGRESS

Prepared by: Bolton & Menk, Inc.
Summit Avenue Regional Trail Master Plan Technical Memo | H19.114590

PRECEDENTS
36

REHABILITATION AND DESIGN GUIDELINES

Several sources are available to guide rehabilitations and new construction within historic districts. The National Park Service (NPS) has developed guidelines for rehabilitation and new construction within historic districts. Some cities have developed guidelines for design within their individual historic districts. Most of the local guidelines are focused on the historic structures within the district and maintaining the character defining features of those contributing structures within the historic districts. Some guidelines do address streetscapes and landscaping. The following section will look at the national guidelines, St. Paul and Minneapolis guidelines and other districts noted above if available, to see what guidelines are provided for trails, bikes or other multi-modal facilities or other transportation-related improvements within the public right-of-way.

NATIONAL PARK SERVICE

Treatment of Historic Properties

The NPS Standards for Rehabilitation has ten standards that should be followed when working within a National Register district or property, and the first eight focus on the existing standing structures. Guidance is given on how the historic character or defining features should be retained and preserved and there should be as minimal of change as possible to those features. Additionally, deteriorated features should be repaired rather than replaced. The last two standards are focused on new additions and according to the NPS website these two standards have been expanded on. The website states that the “design, density, and placement of the new construction respect the overall character of the site.” As with the rehabilitation, new construction needs to protect the Integrity of the property or districts setting. The following is found on the website:

- Related new construction – including buildings, driveways, parking lots, landscape improvements and other new features – must not alter the historic character of a property. A property’s historic function must be evident even if there is a change of use.
- The location of new construction should be considered carefully to follow the setbacks of historic buildings and to avoid blocking their primary elevations. New construction should be placed away from or at the side or rear of historic buildings and must avoid obscuring, damaging, or destroying character-defining features of these buildings or the site.
- Protecting the historic setting and context of a property, including the degree of open space and building density, must always be considered when planning new construction on an historic site. This entails identifying the formal or informal arrangements of buildings on the site, and whether they have a distinctive urban, suburban, or rural character. For example, a historic building traditionally surrounded by open space must not be crowded with dense development.
- In properties with multiple historic buildings, the historic relationship between buildings must also be protected. Contributing buildings must not be isolated from one another by the insertion of new construction.
- As with new additions, the massing, size, scale, and architectural features of new construction on the site of a historic building must be compatible with those of the historic building. When visible and near historic buildings, the new construction must be subordinate to these buildings. New construction should also be distinct from the old and must not attempt to replicate historic buildings elsewhere on site and to avoid creating a false sense of historic development.
- The limitations on the size, scale, and design of new construction may be less critical the farther it is located from historic buildings.

- As with additions, maximizing the advantage of existing site conditions, such as wooded areas or drops in grade, that limit visibility is highly recommended.
- Historic landscapes and significant viewsheds must be preserved. Also, significant archeological resources should be considered when evaluating the placement of new construction, and, as appropriate, mitigation measures should be implemented if the archeological resources will be disturbed.¹⁸

Guidelines for the Treatment of Cultural Landscapes

These guidelines discuss the components of cultural landscapes and how the spatial organization and land patterns are important. For cultural landscapes there are five main character-defining features which include: topography, vegetation, circulation, water features, structures, site furnishings and objects. These guidelines should be used hand-in-hand with the standards listed above.¹⁹

ST. PAUL

Chapter 74 of the City Code of Ordinance addresses the Heritage Preservation Districts and Programs for St. Paul. Within this chapter, Article II addresses the Summit Avenue West Heritage Preservation District and Article VI addresses the Heritage Hill Historic Preservation District. Furthermore, Division 2 of these articles addresses the Guidelines for Design Review.

Most of the guidelines echo the national standards for preservation. The general principles follow closely the Standards for Rehabilitation. Additional guidelines included in the city codes address Site and Public Infrastructure under New Construction [(Sec. 74.37 (e) and (f)). Sec. 74.37 (e) identifies the streetscape as three visual areas: public (sidewalks, boulevards, streets, and medians), semipublic (front yards and side yards on corners), and private (behind front face of buildings). Sec. 74.37 (f) identifies Summit Avenue as a wide parkway with well-landscaped boulevards within a 200-foot right-of-way and it represents an early city planning effort to create an exclusive residential area. It also reiterates its importance to the significance and integrity of the district. The section goes on to say that the pattern of Summit Avenue’s boulevards and sidewalks should be maintained, distinctive features of public spaces in the area, such as the early twentieth century lantern-style streetlights, should be preserved. New street furniture such as benches, sign standards, traffic signals and trash containers should be compatible with the character of the district.

The Code of Ordinances for Heritage Hill Historic Preservation District is very similar to the above for Summit Avenue West. One addition to the code under Public Infrastructure [(Sec. 74.65 (g))] adds that the traditional pattern of the public streets, curbs, boulevards, and sidewalks should be maintained. Distinctive features including brick alleys, stone slab sidewalks, granite curbs should be preserved.²⁰

MINNEAPOLIS

Stevens Square guidelines, much like the ones for St. Paul, focus on the standing structures themselves and are broken down into individual sections pertaining to features like masonry, wood, architectural metals, roofs, windows, entrances and porches, storefronts, and mechanical systems. One section pertains to the district/neighborhood. The guideline recommends identifying, retaining, and preserving buildings, and streetscapes and landscape features which are important in defining the overall historic

¹⁸ NPS, Technical Preservation Services <https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>

¹⁹ Guidelines for the Treatment of Cultural Landscapes, Accessed March 2022.
<https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm>

²⁰ https://library.municode.com/mn/st._paul/codes/code_of_ordinances?nodeId=PTIILECO_TITIXICPL_CH74HEPRD_IPR

character of the district or neighborhood. These features can include streets, alleys, paving, walkway, streetlights, signs benches, parks and gardens, and trees. The guidelines go on to include other recommendations and design for missing historic features, and alterations/additions for new uses. It is interesting to note that the guidelines note that destroying streetscape and landscape features by widening existing streets, changing paving material, or introducing inappropriately located new streets or parking lots is not recommended.

The Washburn-Fair Oaks guidelines only focus on the structures of the historic district. One section addresses signs but as related to business or institutional identification. Unfortunately, a similar set of guidelines seemed to have been adopted for the 5th Street Southeast Historic District and they provide no further guidance on streetscapes.

VIRGINIA BEACH, VA

Virginia Beach produced “Virginia Beach Historic & Cultural District Design Guidelines” in 2021 which includes most of the historic properties or districts within Virginia Beach, save for the one studied above.²¹ Chapter seven of this document is most relevant to site/setting, but mostly pertains to the private property and the transition from public to private space. Since this guide is targeted for use of the private citizen this is not surprising. The addition of the bike lane outside the main right-of-way described above through this historic district is a minimal intrusion in the district and is in keeping with the Secretary of the Interior’s standards outlined above and with the spirit of the local guidelines.

GREENSBORO, NC

The City of Greensboro recently completed their “Historic District Program Manual and Design Standards” in the Winter of 2021.²² In this document is a chapter specifically on neighborhood setting. This chapter contains guidance on maintaining historic street patterns, widths, and materials, historic paving materials and granite curbing where it exists. Work within the historic districts require a Certificate of Appropriateness (COA) to be reviewed by the Historic Preservation Commission in Greensboro. Some examples of public right-of-way work that needs a COA is widening or realigning of streets, and construction of bicycle paths and walking trails. In the College Hill Historic District example above, the bicycle lanes are within the existing streetscape and is distinguished by pavement markings only.

SANTA ANA, CA

The City of Santa Ana completed guidelines for Historic French Park in 1995.²³ This document details the housing types located within the district and the character-defining features of each type. It also outlines basic repairs expected on historic houses and how to repair according to the Secretary of Interior Standards, which is the benchmark for this document. There is no mention of streetscape or infrastructure improvements. The bike lanes, where they exist, in the example described above are minimally intrusive to the district and are located on the edge of the district.

PITTSBURGH, PA

The City of Pittsburgh completed guidelines for Allegheny West Historic District sometime after its designation as an historic district in 1985.²⁴ The document is like the other cities documented here in

that it focuses mainly on the individual houses rather than the setting or streetscapes of the public realm. Section C of the document minimally addresses Streetscape and Building Site. Like previous guidelines reviewed it states that distinctive historic features of the streetscape, walkways, alleys, building setbacks, lighting, signage, planters, curbing and paving should be retained to give the district its distinguishing character. The bike lanes in this city are also located on the edge of the district and are all within the existing right-of-way and are minimally intrusive.

SUMMARY AND RECOMMENDATIONS

This memo set out to address numerous questions the City of St. Paul had regarding how to develop a Master Plan for the proposed Summit Avenue Regional Trail. The City will need to balance the needs of users to the trail and the needs of the historic properties along Summit Avenue. This memo outlined the different historic property laws that could govern projects within the districts, but it also clarified the character-defining features that exist within those districts. This memo also documents what other bike/trail facilities exist within historic districts in Minnesota and in cities nationwide that are similar in population as St. Paul. These examples showed a variety of designs including separated trails, lane sharing and on-road separated lanes with and without bollards for the separation. Lastly, this memo looked at the design guidelines laid out by the National Park Service and by the individual city’s historic districts chosen as examples, to see if any offered guidance regarding the streetscape and changes to the streetscape. Most of these guidelines reiterated keeping the character-defining features intact and that new elements should not overwhelm or destroy those characteristics. Both of St. Paul’s local codes for the districts emphasize the pattern of the roadway, sidewalks and boulevards should be maintained within the historic districts along Summit Avenue. All the national example design guidelines included in the above discussion conveyed this same sentiment within their historic districts.

It is recommended that additions to Summit Avenue should be as simple as possible and not change the existing curb lines whether it is within the 100-foot-wide or 200-foot-wide section of the avenue. Minimal or no impact to the greenspace that is a character-defining feature to the historic districts is recommended to avoid any potential adverse impacts. Keeping the design simple will not only benefit the character-defining features but also be user friendly. If barriers are needed whether its bollards or another approach not demonstrated above, these should be used sparingly and scaled so that they are not overwhelming the street view. Wayfinding signs for the trail should be combined with other signs in order to not create a lot of clutter in the greenspace of the corridor. The goal is to create a safe place for trail users while limiting the negative impacts on the character-defining features.

²¹ <https://www.vbgov.com/government/departments/planning/boards-commissions-committees/Documents/VA%20Historical%20Preservation/Design%20Guidelines%20November%202021.pdf>

²² <https://www.greensboro-nc.gov/home/showpublisheddocument/5380/637684265813400000>

²³ http://www.frenchpark.org/images/French_Park_Guidelines.pdf

²⁴ https://apps.pittsburghpa.gov/dcp/05_Allegheny_West_Guidelines.pdf

SOURCES CONSULTED

"Aerial Photographic Atlas of the City of Saint Paul, Minnesota." Saint Paul Public Library, 1925 - 1927. Accessed March 16, 2022. <https://collection.mndigital.org/catalog/spp:142>

Brown, Marvin A. and Kaye Graybeal
College Hill Historic District, National Register of Historic Places Registration Form. Accessed March 2022. <https://files.nc.gov/ncdcr/nr/GF1248.pdf>

City of Minneapolis.
Washburn-Fair Oaks Historic District. Accessed March 2022.
<https://www2.minneapolismn.gov/resident-services/property-housing/property-info/landmarks/alphabetical/washburn-fair-oaks-historic-district/>

City of Minneapolis.
Fifth Street Southeast Historic District. Accessed March 2022.
<https://www2.minneapolismn.gov/resident-services/property-housing/property-info/landmarks/alphabetical/fifth-street-southeast-historic-district/>

City of Saint Paul
Code of Ordinances, Accessed March 2022.
https://library.municode.com/mn/st._paul/codes/code_of_ordinances?nodeId=PTIILECO_TITIXCIPL_CH74HEPRDIPR

City of Greensboro
Historic District Program Manual and Design Standards, updated Winter 2021. Accessed March 2021. <https://www.greensboro-nc.gov/home/showpublisheddocument/5380/637684265813400000>

City of Pittsburgh
Design Guidelines: Allegheny West Historic District, no date provided. Accessed March 2022.
https://apps.pittsburghpa.gov/dcp/05_Allegheny_West_Guidelines.pdf

City of Virginia Beach.
Cavalier Shores Historic District Listed in Virginia Landmarks Register. Accessed March 2022.
<https://www.vbgov.com/news/pages/selected.aspx?release=4123&title=cavalier+shores+historic+district+listed+in+virginia+landmarks+register#:~:text=Cavalier%20Shores%20encompasses%20approximately%20seven,of%20the%20adjacent%20Cavalier%20Hotel.>

Commonwealth Preservation Group
Virginia Beach Historic & Cultural District Design Guidelines, September 2021. Accessed March 2022.
<https://www.vbgov.com/government/departments/planning/boards-commissions-committees/Documents/VA%20Historical%20Preservation/Design%20Guidelines%20November%202021.pdf>

Koop Michael.
Pill Hill Residential Historic District, National Register of Historic Places Registration Form. Accessed March 2022. <https://npgallery.nps.gov/GetAsset/Od11339c-02c9-489b-b305-599a231a0660>

Marsh, Diann
French Park Historic District, National Register of historic Places Registration Form. Accessed March 2022. <https://npgallery.nps.gov/GetAsset/8e137761-f560-4541-8eae-aac17c51d6bb>

Marsh Diann
Historic French Park: Its Architectural Legacy and Design Guidelines, January 1995, Accessed March 2022. http://www.frenchpark.org/images/French_Park_Guidelines.pdf

Marshall, Dan
Restoring Summit Avenue's Historic Bike Lanes. June 22, 2018. Accessed March 2022.
<https://streets.mn/2018/06/22/restoring-summit-avenues-historic-bike-lanes/>

Murphy, Patricia and Susan Granger.
Lowertown Historic District, National Register of Historic Places Inventory-Nomination Form, Accessed March 2022. https://www.rchs.com/wp-content/uploads/2017/09/National-Register-Nomination-Lowertown-Historic-District-_1983.pdf

National Park Service
New Construction within Boundaries of Historic Properties. Accessed March 2022.
<https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>

National Park Service
Guidelines for the Treatment of Cultural Landscapes, Accessed March 2022.
<https://www.nps.gov/Tps/standards/four-treatments/landscape-guidelines/index.htm>

Nelson, Charles W. and Susan Zeik
Historic Hill District, National Register of Historic Places Nomination Form, Accessed March 2022.
<https://npgallery.nps.gov/GetAsset/a8ab70fe-59a3-4d80-b71f-181710588c01>

New Construction within the Boundaries of Historic Properties, Accessed March 2022.
<https://www.nps.gov/tps/standards/applying-rehabilitation/successful-rehab/new-construction.htm>

Roberts, Dr. Norene A. and Jeanne M. Zimniewicz.
West Summit Avenue Historic District, National Register of Historic Places Registration Form, Accessed March 2022. <https://npgallery.nps.gov/GetAsset/109d6f44-c9af-4cb2-8f63-4ad938f772f0>

Sanborn Fire Insurance Map
Saint Paul, Ramsey County, Minnesota. Sanborn Map Company, Vol. 2, 1885. Map. Accessed March 2022. https://www.loc.gov/item/sanborn04379_001/.

Saint Paul, Ramsey County, Minnesota. Sanborn Map Company, Vol. 2, 1903. Map. Accessed March 2022. https://www.loc.gov/item/sanborn04379_001/.

St. Paul Real Estate Board (Saint Paul, Minn.), G.M. Hopkins & Co.. 1928. "Plat book of the city of Saint Paul, Minn. and suburbs: from official records, private plans and actual surveys." University of Minnesota Libraries, John R. Borchert Map Library., Accessed March 16, 2022.
<https://umedia.lib.umn.edu/item/p16022coll245:264>

Zellie, Carole.
Stevens Square Historic District, National Register of Historic Places Registration Form. Accessed March 2022. <https://npgallery.nps.gov/GetAsset/06340d92-701f-4ce8-8e7d-91d4dea6d56b>



111 Washington Avenue S
Suite 650
Minneapolis, MN 55401
Ph: (612) 416-0220
Fax: (612) 416-0222
Bolton-Menk.com

TECHNICAL MEMORANDUM #4

DRAFT
PROGRESS

Date: July 20, 2022
To: Mary Norton, PLA
From: Bryan Nemeth, P.E.
Subject: Summit Avenue Regional Trail Master Plan: Crash Review
City of St. Paul
BMI Project No.: 0T4.126438

To understand the current safety concerns on the Summit Avenue corridor the reported crash information available from the Department of Public Safety and distributed by the Minnesota Department of Transportation to the City of St Paul was reviewed and analyzed. This includes a review of all crashes along the corridor and a specific look into the pedestrian and bicyclist involved crashes.

Corridor Length: 4.5 miles (East River Blvd to Kellogg Blvd)

All Crashes
(includes vehicle to vehicle, vehicle to fixed object, vehicle to pedestrian, and vehicle to bicyclist crashes)

- Total crashes (2015 to 2019*): 283
- 171 crashes occurred at intersections
 - 92 crashes occurred between intersections

*for relative consistency in traffic volume the analysis looked at the five year time period without pandemic impacts

The following Summit Avenue intersections have a crash rate or fatal and serious injury crash rate outside of the normal expected range in comparison to similar facility types and similar volumes statewide (Critical Index >1):

- Lexington Ave
 - Fatal and Serious Injury Crash Rate: 3.9 crashes per Million Entering Vehicles (MEV)
 - Critical Index: 1.14
- Victoria St
 - Total Crash Rate: 0.9 crashes per MEV
 - Critical Index: 1.05
- Dale St
 - Total Crash Rate: 0.9 crashes per MEV

H:\STPL\074126438\2_Preliminary\C_Reports\Safety Crash Info\126438 Summit Ave Regional Trail_Tech Memo 4 rev01.docx
Bolton & Menk is an equal opportunity employer.

- Critical Index: 1.03
- Fatal and Serious Injury Crash Rate: 8.3 crashes per MEV
- Critical Index: 2.15

Pedestrian and Bicyclist Crashes

(includes vehicle to pedestrian and vehicle to bicyclist crashes)

Total pedestrian and bicyclist involved crashes (2012 to 2021**): 63

- 31 pedestrian-involved crashes
- 32 bicyclist-involved crashes

**since pedestrian and bicyclist involved crashes are more random in nature and occur less frequently, a full ten-year analysis was conducted

This may be underestimated as many pedestrian and bicyclist involved crashes go unreported, especially if there are no injuries or fatalities involved.

A map showing the location of reported pedestrian and bicyclist crashes, and a heat map of the crash frequency is attached.

The **highest concentration of pedestrian and bicyclist involved crashes** occurred between Lexington Avenue and Ramsey Street.

- East River Blvd to East of Fairview Ave: 10.4 ped and bike crashes/mile
- East of Fairview Ave to East of Snelling Ave: 13.7 ped and bike crashes/mile
- East of Snelling Ave to Ayd Mill Rd: 3.2 ped and bike crashes/mile
- Ayd Mill Rd to East of Lexington Ave: 11.8 ped and bike crashes/mile
- East of Lexington Ave to East of Ramsey St: 24.8 ped and bike crashes/mile
- East of Ramsey St to West of Kellogg Blvd: 5.4 ped and bike crashes/mile

No information on how this compares to other facilities or locations is available.

The intersections with the **highest crash concern for pedestrians and bicyclists** based on their frequency are:

- Cretin Ave
- Snelling Ave
- Chatsworth St
- Colfax St
- St Albans St
- Dale St

No information on how this compares to other facilities or locations is available

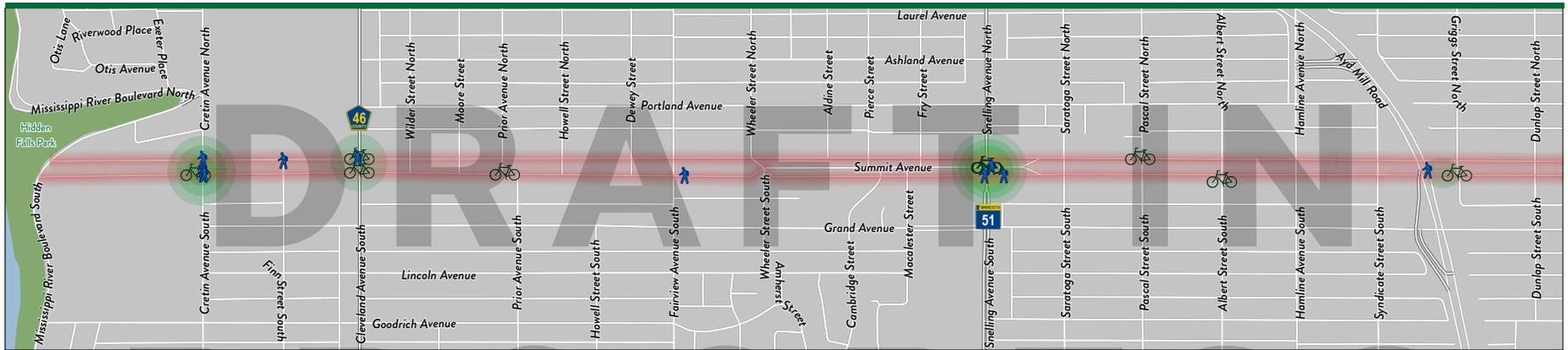
Crash severity

- 100% of reported pedestrian crashes resulted in an injury or fatality
- 90% of reported bicyclist involved crashes resulted in an injury or fatality

The crash data available indicates that pedestrian and bicyclist crashes on Summit Avenue tend to result in injuries or fatalities. This is relatively consistent with national trends on reported pedestrian and bicyclist crashes.

Conclusion

There have been 63 crashes involving pedestrians and bicyclists in the past ten years. Most of these pedestrian and bicyclist involved crashes resulted in injuries or fatalities.



THE ROADWAY



Many segments of Summit Avenue have not been reconstructed since the 1930's, almost 100 years ago.

Over time, roadways need to be reconstructed to replace aging infrastructure, this includes underground utilities, roadway base structure and surface, lighting, curb & gutter and sidewalks.

Improvements

Near-Term (2-3 yr.)

- Surface: Mill & Overlay
- Crossings: Bump-Outs, Ramps
- Funded for construction

Long-Term (Phased process, ~10-15+ yr)

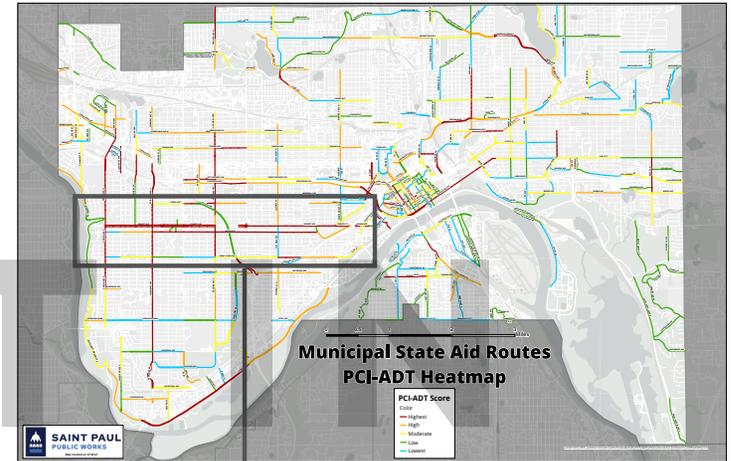
- Roadway Reconstruction
- Regional Trail Facility
- NOT funded for construction



2022 mill & overlay and crossing improvements on Summit Avenue



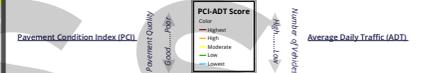
Roadway construction near Summit Avenue and Grotto, 1915 | Credit: Minnesota Historical Society



Pavement Condition Index (PCI) & Average Daily Traffic (ADT) Map



The map above reflects the relationship between pavement conditions and average daily traffic.



Summit Avenue scores highly across the City, reflecting a combination of both poor pavement conditions and high average daily traffic.



2022 - 2023 Surface Improvements (Mississippi River Blvd to Victoria)

ROADWAY Composition & Construction

SURFACE IMPROVEMENTS
Occurs every 8-10 years*



STREET RECONSTRUCTION
Occurs every 50-100 years*



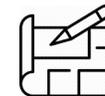
*Specific scope and timing of roadway construction projects vary depending on existing conditions and funding availability



How does this relate to a trail facility?

Reconstruction projects replace all elements of the road: the surface, curb, ramps, and utility infrastructure beneath the surface.

The most cost-effective opportunities to add pedestrian and bicycle improvements come when roads are being fully redesigned.



HISTORY & PROCESS

Land Acknowledgement

St. Paul stands on the ancestral, traditional, and contemporary Dakóta homelands.

As we consider that the many legacies of violence, displacement, migration and settlement that has brought us to current day, we commit to understanding, respecting, supporting and advocating for Indigenous People and for this land.

Let this land acknowledgement be more than a reminder. Let it be a marker in time of dedicating ourselves to be better and do better. Through this land acknowledgement, let us lead to make changes which respect history.

History is layered and complex, encompassing many people, cultures, and stories over time.

In the future, as projects are implemented in the Summit Avenue corridor, it will be important that designs and built elements reflect a layered approach to history, shaped by the many community perspectives and histories that make up the City of Saint Paul and broader region.

Engagement & Review Processes

Master Plan Development

Technical Advisory Committee (TAC)
Staff from Heritage Preservation Commission (HPC) and State Historic Preservation Office (SHPO) are invited to participate in TAC meetings to provide guidance and initial feedback

BEYOND THE MASTER PLAN PROJECT UNDERTAKING | SECTION 106

Design & Engineering

Formal Review

Depending on funding sources, Local, State, and Federal Review Processes Apply

Any undertaking identified in the National Historic Preservation Act (NHPA) as a project, activity, or program that is funded in whole or in part with federal financial assistance requires that affects to designated or potentially eligible structures are identified and assessed

Historical Sites and Districts

The Summit Avenue Regional Trail corridor runs through several historic districts, and is situated adjacent to many historical buildings and sites. Additionally, the trail corridor provides access to other historical areas, particularly those within Downtown St. Paul and near the Mississippi River.

The historic districts and sites within the corridor have different requirements and recommendations. In general, some of the significant historical elements defined along Summit Avenue include

the historic architecture, historic granite curbs, general pervious and impervious rhythm, and other character defining features, unique to individual segments of the corridor.

A historical review and approval from the Heritage Preservation Commission (HPC) and the Minnesota State Historic Preservation Office (SHPO) may be necessary through the design and development process for each segment of the proposed trail.

Legend

- Historic District - Local
- Historic District - State
- Historic District - National
- Historic Site - Locally Listed
- Historic Site - State Listed
- Historic Site - Nationally Listed
- Historic Site - Locally and Nationally Listed
- Historic Site - Locally, State, and Nationally Listed

- 1 Dr. Ward Beebe House
- 2 Old Main (Macalaster College)
- 3 Pierce and Walter Butler House
- 4 Minnesota Governor's Residence
- 5 Vienna and Earl Apartment Buildings
- 6 F. Scott Fitzgerald House
- 7 Burbank-Livingston-Griggs House
- 8 James J. Hill House
- 9 St. Paul Cathedral
- 10 Smith Building
- 11 John M. Armstrong House
- 12 St. Paul Municipal Grain Terminal

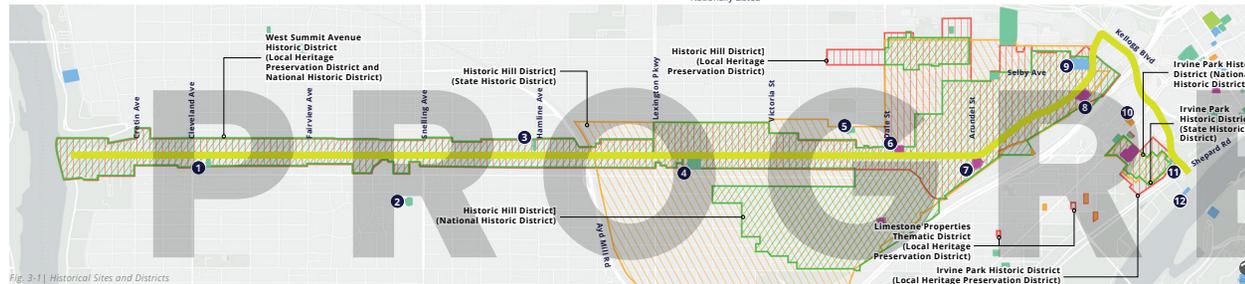


Fig. 3-11 Historical Sites and Districts

In 1872, The City of Saint Paul hired renowned landscape architect H.W.S. Cleveland to consult on an outline of a planned park system in the city. Cleveland advocated for a parkway system and took note of the opportunity for a parkway on Summit Avenue



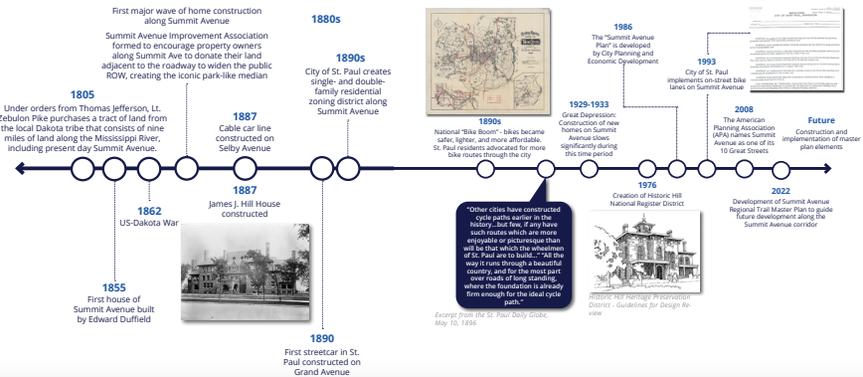
View of Summit Ave. near Macalaster College, looking west, 1890
Credit: Minnesota Historical Society



View of Summit Ave from rooftop, looking northwest, circa 1900
Credit: Minnesota Historical Society



View of Summit Ave. looking west, circa 1900
Credit: Minnesota Historical Society



Historical timeline and photos illustrate points in time during the development of the built road and parkway of Summit Avenue

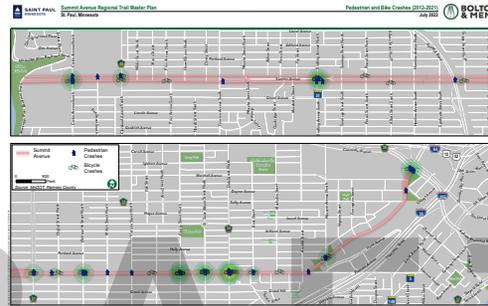
SAFETY & CROSSINGS



Safety for all modes and users of the Summit Avenue corridor is an important factor in planning for a regional trail facility. This project looks to create more physical separation between users with a separated bicycle trail facility.

The Summit Avenue corridor has experienced a number of crashes along its approximately 4.5 mile length from East River Blvd. to Kellogg Blvd.

Within a 10-year time frame between 2012 to 2021, there have been a total of 31 bicyclist involved crashes, or 3 per year on average. Of these crashes, 90% resulted in an injury or fatality. While the circumstances vary, the less time a vehicle and pedestrian or bicyclist share the same space, the less opportunity there is for conflict.

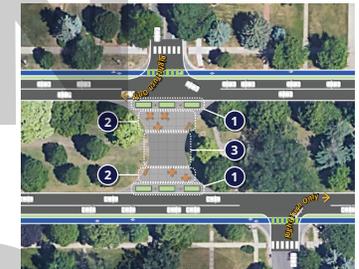
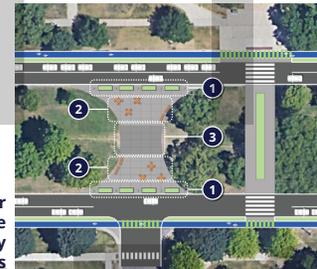


MnDOT Crash data over a 10 year span was evaluated for the Summit Avenue corridor from the Mississippi River to Kellogg Blvd. The map above reflects concentrated areas of pedestrian and bicycle crashes.

Median closure concept focuses on creating contiguous spaces for pedestrians in the corridor to improve connectivity and reduce crossings with vehicles. The concept works with existing roadway geometry to maintain spatial and historic landscape elements

Median Closures

- Vehicle Barriers**
Bollards, planters, etc.
- Seating**
Benches, tables, etc
- Decorative Paving**
Reflect historic character of neighborhood through paving design; differentiate path from center to connect informal running path in median



BEST PRACTICE TOOLKIT

Curb Extensions: Bump-outs reduce road widths, shorten crossing distances, and increase visibility for all modes

Raised crossings: Elevate Pedestrians and bicyclists for improved visibility and traffic calming

Signing & Striping: Intersection crossings indicate the bicycle path through an intersection to heighten visibility between modes

Reductions: Reduce curb radii and drive lane widths to encourage slower vehicle speeds

Intersections: Tool Kit Application Examples

Unsignalized

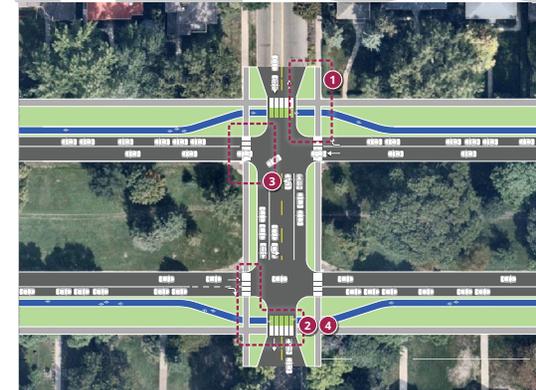
Signalized



- Corner Bump-outs
- Raised Crosswalk
- Intersection Crossing Markings



- Corner Bump-outs
- Raised Crosswalk
- Intersection Crossing Markings
- Reduce Curb Radii



- Corner Bump-outs
- Intersection Crossing Markings
- Reduce Curb Radii
- Improve crosswalks

NOTE: Adjusting sidewalks at intersections will be determined based upon tree health, and final alignment will be evaluated beyond the master plan during design and engineering of a trail facility

PROJECT PROCESS AND BACKGROUND



Project Timeline



Project Overview

The City of Saint Paul Parks and Recreation Department, with input from other City departments, technical professionals, and community members, is in the process of developing a Master Plan for a regional trail on Summit Avenue. The proposed trail corridor is approximately 5.4 miles long along Summit Avenue, Kellogg Boulevard, and Eagle Parkway from Mississippi Gorge Regional Park to the Samuel H. Morgan Regional Trail. The master plan will evaluate opportunities, constraints, and feasibility of a regional trail facility within the corridor and will serve as a guide to future transportation, pedestrian, and parkway improvements. Project goals include:

- Evaluate and identify a regional trail alignment on Summit Avenue to improve recreation experience and safety for all users.
- Identify ways to balance the character of Summit Avenue when modernizing infrastructures including but not limited to trees, greenspace, parking, vehicles, recreation, and historical designation.
- Improve connectivity and public access to parkland.
- Support the evolving needs of users to create a more resilient, people-oriented corridor

Project Partners



Frequently Asked Questions

What is a Regional Trail?

- Regional Trails provide recreational opportunities along linear pathways in the metropolitan area.
- "Linking Trails" pass through or provide connections to other regional amenities or significant natural resource areas.
- These trails intersect with local trail networks to serve as commuting routes for bicyclists in addition to recreational purposes.

Why Summit Avenue?

- Parallel routes such as Grand Avenue and Portland Avenue have been explored as regional trail facilities, but have similar and additional drawbacks including a narrower public right-of-way and similar historic and cultural guidelines.
- Summit Avenue currently has high multi-modal use and parkway characteristics that make it a desirable setting for a regional trail facility.
- Much of the roadway has not been improved since the 1910s and is in need of reconstruction. This provides an opportunity to include improved bicycle infrastructure with a roadway reconstruction project.

Why a Separated Facility?

- High traffic volume and industry standards
- Aligns with City and Regional policy
- Comfort and safety for all modes and abilities

Larger City and Regional Policy Goals

Saint Paul 2040 Comprehensive Plan (2020)

- Safety and accessibility for all
- True transportation choice throughout the City, with a shift from single-occupant vehicles toward other modes
- Strong and accessible connections
- Equitable public access/strong connections to the Mississippi River

Saint Paul Pedestrian Plan (2019)

- Safety for all modes particularly at intersections and crosswalks
- Improved winter maintenance for all facility types

Saint Paul Climate Action Resilience Plan

- Emphasis on walkable and bike-friendly neighborhoods
- Enhance transportation infrastructure not solely focused on single-occupant vehicles
- Prioritize increasing safe and reliable access to city destinations without the use of a private automobile

Saint Paul Bicycle Plan (2015)

- Increase the mode share of bicycling and establish and expand the city-wide bicycle networks
- Develop bikeways that allow all Saint Paul residents and visitors to safely and comfortably ride bicycles



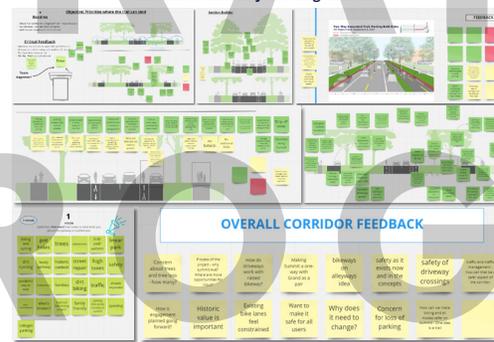
Engagement Events To Date

- TWIN CITIES MARATHON**
OCTOBER 2021
- SAINT PAUL FARMER'S MARKET**
OCTOBER 2021
- ON-SITE ENGAGEMENT**
OCTOBER 2021
- TECHNICAL ADVISORY COMMITTEE (TAC) MEETING #1**
FEBRUARY 2022
- DESIGN ADVISORY COMMITTEE (DAC) MEETING #1**
FEBRUARY 2022
- DROP-IN ENGAGEMENT SERIES (3 SESSIONS)**
FEBRUARY - APRIL 2022
- TECHNICAL ADVISORY COMMITTEE (TAC) MEETING #2**
MAY 2022
- DESIGN ADVISORY COMMITTEE (DAC) MEETING #2**
MAY 2022
- PUBLIC INFORMATION SESSION**
JUNE 2022
- TARGETED ENGAGEMENT SESSIONS**
SUMMER 2022
 - Discussions with neighborhood organizations, community groups, and community stakeholders
 - Community Outreach events including Little Africa Fest, Right Track Opportunity Fair, and Safe Summer Nights
 - Briefings with Council Members, and Commissioners
- PUBLIC OPEN HOUSE**
OCTOBER 27, 2022

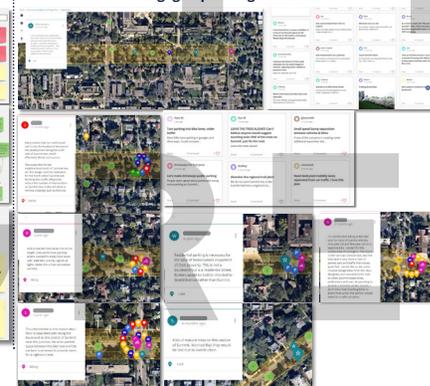
Engagement Participation

VIRTUAL ENGAGEMENT

Virtual Community Meeting Content



Engagepaul.org Feedback



OVERALL CORRIDOR FEEDBACK

Concern about trees and heritage trees along the route	Historic landmarks are important	Spacing of trees is important	Want to make it safe for all users	Why does it need to change?	Concern for bicyclist parking	Safety at E entry, new and old bridge crossings	Safety of driveway crossings
--	----------------------------------	-------------------------------	------------------------------------	-----------------------------	-------------------------------	---	------------------------------

What's Next?

PUBLIC COMMENT PERIODS, DRAFT DOCUMENT REVISIONS, FINAL RECOMMENDATIONS
LATE 2022 - 2023

- #### Ways to Stay Engaged
- Sign up for e-mail updates about the project on engagepaul.org/summit
 - Connect with your district and city council members
 - Check project website for important project updates

Summary of Feedback Themes

- Greenspace**
 - Importance of tree preservation
 - Desire to maintain open median space for informal park uses
- Safety**
 - Minimize conflicts between vehicle, bicycles, and pedestrians
 - Reduce confusion at roadway transition areas
 - Provide more separation between users
- Facility Conditions**
 - Current pavement condition is poor - repairing the roadway is critical
 - Snow clearing on roadway and bike lanes is important for year-round use
 - Desire to keep informal central median running path as-is for recreational use
- No Change**
 - Desire to maintain existing functions and on-street bike lanes
 - Roadway surface repairs only

IN-PERSON ENGAGEMENT

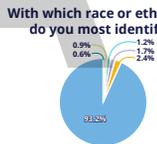
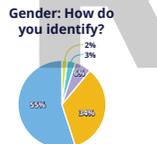


RESULTS FROM ENGAGESTPAUL.ORG ONLINE SURVEY
AUGUST 2021 - OCTOBER 2022 | ONLINE SURVEY FORMAT
1,341 PARTICIPANTS

Survey Summary

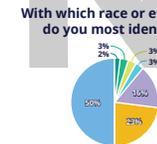
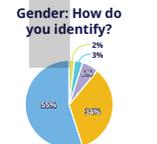
RESULTS FROM FOCUSED ENGAGEMENT USER SURVEY
JULY 2022 - OCTOBER 2022 | IN-PERSON AND ONLINE SURVEY FORMAT
82 PARTICIPANTS

DEMOGRAPHIC DATA



- Summit Hill
- Hamline-Midway
- Macalaster-Groveland
- Highland
- Summit-University
- Union Park
- St. Anthony Park
- Eastview-Conway-Battle Creek - Highwood Hills
- Woman
- Man
- Non-Binary/Non-Conforming
- Prefer not to respond
- Prefer to self describe
- 35-44
- 25-34
- 45-54
- 55-64
- 65-74
- 18-24
- 75 or older
- White or Caucasian
- Asian or Asian American
- Hispanic or Latino
- Black or African American
- Two or More Races
- American Indian or Alaska Native

DEMOGRAPHIC DATA



- Woman
- Man
- Non-Binary/Non-Conforming
- Prefer not to respond
- Prefer to self describe
- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 75 or older
- White or Caucasian
- Black or African American
- Asian or Asian American
- Hispanic or Latino
- Another race
- Prefer not to respond
- American Indian or Alaska Native

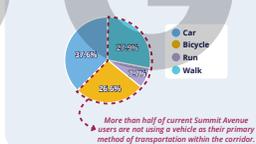
Q1 What limits your use of Summit Avenue for transportation or recreation?



Q2 Within the Summit Avenue corridor, which elements are most important to you?



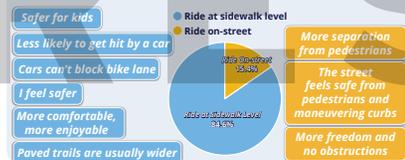
Q3 What method of transportation do you primarily use along Summit Avenue?



Q4 If you could change one thing, what would it be?

- Nothing in particular - it's a very nice street
- More art / history public spaces
- Protected bike lanes!
- Fix the holes!
- Bike lanes. Summit is one of the most used bike corridor through the city and to downtown. It should have better bike lanes. Ideal would be lanes that are protected and separated from cars, lie the new lanes on Como or Johnson Parkway.
- Eliminate the risk of being "doored"
- Don't destroy mature trees
- Accessibility: make Summit Avenue safer for walking pedestrians, especially for disabled people
- Slower traffic speeds
- Better, safer bike infrastructure. It's such a beautiful road to bike on, but it feels increasingly unsafe. There is no barrier between speeding cars and bikes.
- More green spaces
- ...remove parking on one side and create a permanently protected and separated bike lane. It would return Summit to its historical purpose as a bike path and would make the street safer for everyone as a main thoroughfare in St. Paul.
- Replace the road! It is horrible!
- De-prioritize motor vehicles. Most of the problems with Summit Avenue stem from the presence of motor vehicles and the backwards planning priorities that favor them.
- Eliminate parking to increase biking and pedestrian use...We don't need 2 lanes of parking on the city's most beautiful parkway.
- Places to rest - benches, public parks, public greenspace
- I think Summit Avenue is just right. Just keep the streets clear of pot holes and the sidewalks level
- Make it a safe place for families to bike

Q1 If you ride a bicycle, do you prefer to ride on the street or on a paved trail at sidewalk level?



Q2 Do you currently use the on-street bikeways on Summit Avenue?



- If you answered no, why not?
- Location/Proximity - I don't travel or connect to places near Summit Avenue
 - Safety/Comfort/Experience. Biking on-street does not feel safe to me
 - Accessibility - Bikeway is not ADA accessible or I do not have a bicycle
 - Interest - I am not interested in biking
- If you answered yes, what could be improved about the current bikeway on Summit Avenue?
- Separation between bike lanes and drive lanes
 - Pavement Condition
 - Safety at intersections
 - Connections to other bikeways and/or transit
 - Other
 - Nothing, the bike lanes could not be improved

Regional Analysis

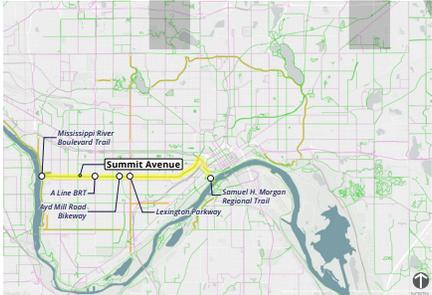


Legend

- Project Area
- Regional Park
- Regional Trail
- Regional Trail Search Corridor

Summit Avenue provides a valuable regional connection from river to river, between Mississippi Gorge Regional Park and Samuel H. Morgan Regional Trail. In addition to these two connection points, the Summit Avenue regional trail would create another link in the regional trail system, providing access to other regional parks and trails across the City of Saint Paul, and the broader region.

MULTI-MODAL CONNECTIONS



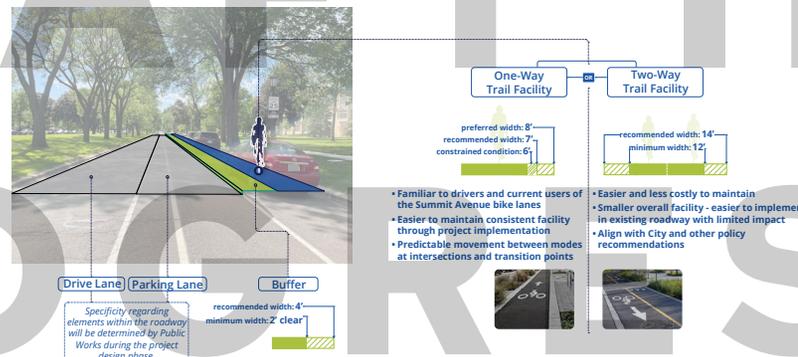
Legend

- Project Area
- Bikeway
- Transit Route
- Parkway

Summit Avenue is intersected by several other major transportation routes within the City. Several transit lines, other bikeways, and parkways cross Summit Avenue throughout the corridor. A regional trail along Summit Avenue would strengthen the city-wide transportation network, and provide additional safe and equitable routes for non-vehicular uses.

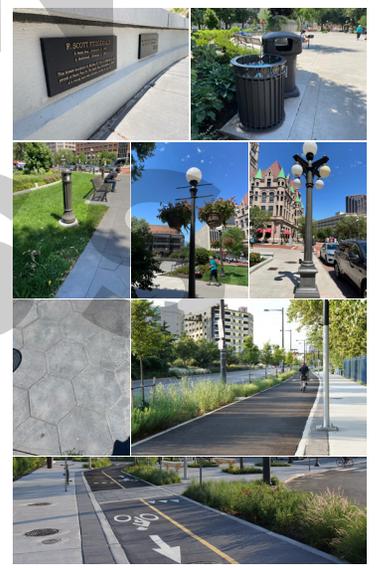
Design Considerations

COMPONENTS OF THE TRANSPORTATION ENVELOPE



- Familiar to drivers and current users of the Summit Avenue bike lanes
- Easier to maintain consistent facility through project implementation
- Predictable movement between modes at intersections and transition points
- Easier and less costly to maintain
- Smaller overall facility - easier to implement in existing roadway with limited impact
- Align with City and other policy recommendations

TRAIL AMENITIES AND MATERIALITY



OTHER CONSIDERED ROUTES

Other potential routes connecting Mississippi Gorge Regional Park to the Sam Morgan Regional Trail were evaluated at a high-level. These routes include the following locations:

- Grand Avenue
- Portland Avenue
- Marshall Avenue and Selby Avenue
- Ayd Mill Road/Little Bohemia Trail
- Jefferson Avenue/Ayd Mill Road

These routes were not preferred to Summit Avenue due to various conditions including the following factors:

- Indirect or interrupted connections
- Profile changes along the roadway affecting user comfort and experience
- Lack of parkway characteristics for recreation
- Narrow right-of-way conditions and constraints
- Contextual land use and compatibility for a regional trail
- Does not connect two regional facilities via downtown Saint Paul

MATURE TREE CANOPY AND GREENSPACE

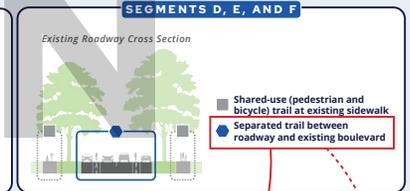
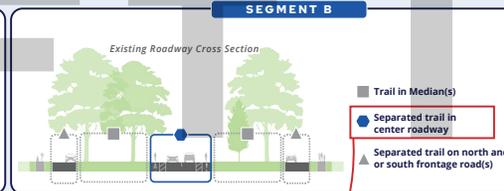
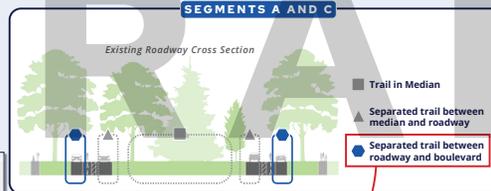


DESIGN PROCESS

1 Initial Alignment Study

- Review of entire 100'/200' public right of way in each segment
- Study the impact of a regional trail in various locations within the cross section of the existing roadway
- Consider existing median, boulevard, roadway, and sidewalks
- Mature tree canopy, historic preservation, safety, and user experience were evaluated for each option

Corridor Segment Map



2 Corridor Exploration

- Of the options explored, a trail facility at the outside edge of the roadway is preferred for minimal impact to greenspace, intuitive user experience, and safety of traffic flow at crossings.
- Several considerations required exploration including one- or two-way trails, and how to address the other modes within the Summit Avenue corridor including pedestrians, and vehicular traffic.
- Mature tree canopy and greenspace are a top priority within these considerations

	SEGMENTS A AND C				SEGMENT B		SEGMENTS D, E, AND F			
	One-Way Trails Most Parking Remains	One-Way Trails Parking Removed One Side	Two-Way Trail Most Parking Remains	Two-Way Trail Parking Removed One Side	One-Way Trails	Two-Way Trail	One-Way Trails Most Parking Remains	One-Way Trails Parking Removed One Side	Two-Way Trail Most Parking Remains	Two-Way Trail Parking Removed One Side
Parking <i>On-street parking meets demand observed in parking studies</i>	✓	○	✓	○	— <i>Parking is not affected by either proposed alignment</i>	—	✓	○	✓	○
Mature Tree Canopy <i>Healthy trees within the corridor are preserved</i>	✓	○	✗	✓	✓	✓	✗	✓	✗	✓
User Experience <i>Trail facility is familiar to cyclists and drivers</i>	✓	✓	○	○	✓	○	✓	✓	○	○

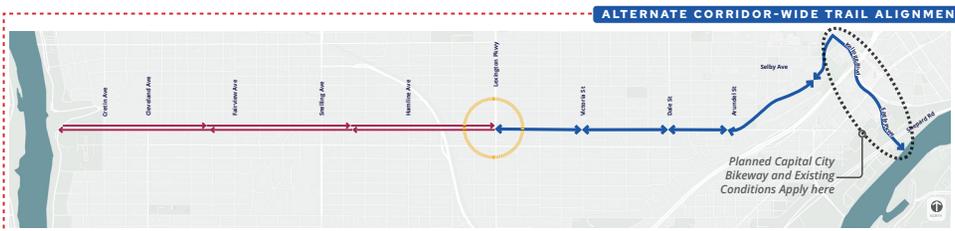
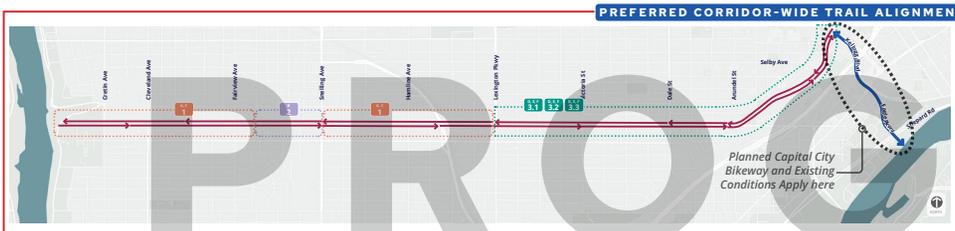
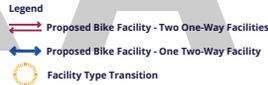
Legend

✓ Concept meets stated goal	✗ Concept does not meet stated goal
○ Concept partially meets stated goal	— Does not apply

* The preferred alignment for segments D, E, and F of the regional trail are one-way bike facilities. However, the two-way trails are still under consideration and the feasibility of both alignments is still being reviewed.

3 Corridor-Wide Approach

- Overall, the preferred alignment for the Summit Avenue Regional Trail includes two-one way trail facilities on the north and south sides of Summit Avenue.
- The secondary approach includes two one-way bike facilities on both sides of Summit Avenue from Mississippi River Boulevard to Lexington Parkway, and one two-way facility from Lexington Parkway to Kellogg Boulevard on either the north or south side of Summit Avenue.
- A number of factors influence the feasibility of one-way or two-way trails including user safety and comfort, mature tree canopy and greenspace, and parking, among others.



TRAIL VARIATIONS

1	2	3	4	5	6	7
Sidewalks Variable widths, 6'-10'	Tabled Crossing Trail and sidewalk raised 6" above street level	One-Way Trail Grade Separated	Two-Way Trail Grade Separated	Buffer Vegetated	Buffer Paved	Vehicle Corridor
8	9	10	11	12	13	14
Driveway Apron	One-Way Trail Narrowed Treadway Segments D, E, and F	One-Way Trail Parking Removed Segments D, E, and F	Two-Way Trail Recommended Facility Dimensions Segments D, E, and F	Example of tabled crossing	One-Way Trail Segment B	One-Way Trail Segments A and C

Corridor Segment Map



4 Concept Refinement

WE ARE
HERE

Constrained Conditions

Outlined below is a framework for decision making during future design and construction projects in the corridor. It sets up three tiers in reverse-priority that reflect what areas would need to be impacted when the recommended 'typical' section (7' Trail, 4' buffer) is not feasible or there is an opportunity to provide more greenspace given a site condition. Departure from the typical section would be determined during the design and engineering phase of the regional trail, identified due to context-specific site conditions found in the corridor.

1 Parking

Citywide planning and policies in general do not prioritize on-street parking for single-occupancy vehicles. Parking counts conducted as a part of master plan analysis phase reflect on-street parking is under-utilized corridor-wide which supports a strategy of reducing on-street parking options to reallocate space for a regional trail facility.

West of Lexington Parkway

- Parking removal if design alternatives are not feasible and is determined to be critical to meet design standards for safety
- Parking to remain typically
- Design flexibility for parking removal at each block to accommodate emergency vehicles and sight lines

East of Lexington Parkway

- Context-based approach - 50% parking reduction assumed (typical)
- Remove parking one-side of street, create lane shift to vary parking locations north/south
- Remove parking both sides: if needed, look for consistency and re-introduce 50% on-street parking options every 1-2 blocks
- Prioritize maintaining 50% parking near areas of multi-unit housing and limited off-street options

2 Paved Surface Dimensions

- Vehicle Corridor: Lane width reduction where possible (11' Minimum: 10' drive lane with 1' curb reaction)
- Bicycle Corridor:
 - Narrower 6' treadway
 - Narrower 3' buffer
 - Street lights, signs, and other obstructions to be outside of trail corridor (11' away from curb)

3 Boulevard/Buffer Condition

- Paved in lieu of grass for maintenance
- Tree Health: Forestry and Planned Removals
 - Dead or declining health, potential hazard
 - Ash Tree
- Relocate or replant immature/young trees with smaller root zones further away from curb

SEGMENTS A AND C

One-Way Bike Facilities

Existing Conditions

Proposed Trail Facility

Public Right-of-Way Corridor | Facing West

Roadway on south side of Summit Ave - Eastbound

Roadway on north side of Summit Ave - Westbound

SEGMENT B

One-Way Bike Facilities

Existing Conditions

Proposed Trail Facility

Public Right-of-Way Corridor | Facing West

Center Two-Way Roadway

SEGMENTS D, E, AND F

One-Way Bike Facilities

Existing Conditions

Proposed Trail Facility

Preferred Alignment One-Way Trail Facilities

Constrained Condition | Narrow Treadway, remove vegetated buffer (preferred)

Constrained Condition | Remove Parking in Some Areas (only appropriate where feasible to remove parking both sides)

Alternate Alignment Two-Way Trail Facility

Secondary Alignment | Two-Way Trail