Application

17063 - 2022 Roadway Modernization

17445 - CSAH 22 (Lyndale Ave) Reconstruction Project

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
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What Grant Programs are you most interested in?	Regional Solicitation - Roadways Including Multimodal Elements			

Organization Information

Name:	HENNEPIN COUNTY

Jurisdictional Agency (if different):

Organization Type: County Government

Organization Website:

Address: DPT OF PUBLIC WORKS

1600 PRAIRIE DR

*	MEDINA	Minnesota	55340
	City	State/Province	Postal Code/Zip

County: Hennepin

Phone:* 763-745-7600 Ext.

Fax:

PeopleSoft Vendor Number 0000028004A9

Project Information

Project Name CSAH 22 (Lyndale Ave) Reconstruction Project

Primary County where the Project is Located Hennepin

Cities or Townships where the Project is Located: Minneapolis

Jurisdictional Agency (If Different than the Applicant):

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)

The proposed project includes the reconstruction of the CSAH 22 (Lyndale Ave) corridor from approximately 300' north of CSAH 3 (Lake St) to CSAH 5 (Franklin Ave) in the City of Minneapolis. CSAH 22 (Lyndale Ave) is currently classified as an A-Minor Arterial that functions as a Reliever. Attachment 2 provides an illustration of the project location.

The current roadway environment consists of a 4-lane undivided configuration with no turn lanes provided for people driving. This design has resulted in a high number of crashes, specifically left turn and rear-end related. As a result, the county will pilot a 3-lane conversion through the corridor beginning later in 2022. The proposed reconstruction project will also address safety at four intersections (27th, 25th, 22nd, and Franklin) that rank in the Top 100 countywide in terms of existing crash frequency. On-street parking is currently permitted on both sides of the roadway throughout all times of day. Sidewalks exist on both sides of CSAH 22 (Lyndale Ave), and are separated by a boulevard space; however, crossing CSAH 22 (Lyndale Ave) is difficult for people walking, specifically at non-signalized intersections as the current design results in poor yielding rates by people driving. In addition, many of the intersections include pedestrian ramps that do not meet current ADA design standards, and traffic signals that lack APS, which poses a challenge for people with limited mobility or sight impairments.

The project objectives are to improve the accessibility, mobility, and safety for people walking, using transit, biking and driving along and across the corridor. Photos showing the roadway's existing condition are included in Attachment 3.

The project will include, but is not limited to, the following elements. The specific types of

improvements and locations will be determined as part of the design process and based on additional community input, data analysis, and environmental review. The potential typical sections and potential concept for the corridor are shown in Attachments 4 and 5.

- Roadway improvements; including the replacement of deteriorated pavement, pavement substructure, curb and gutter, and storm sewer structures.

- Safety improvements; such as the permanent conversion to a three-lane section, traffic signal replacements, along with the installation of curb extensions, raised medians, and/or crossing beacons that will both reduce the crossing distance for people walking, and also manage the speeds of people driving.

- Pedestrian improvements; such as ADA compliant ramps and sidewalks (free of obstructions), APS, and high visibility crosswalk markings.

- Streetscaping improvements; such as boulevard space, lighting, and street furniture.

(Limit 2,800 characters; approximately 400 words)

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DESCRIPTION - will be used in TIP if the project is selected for funding. See MnDOT's TIP description guidance.

CSAH 22 (Lyndale Ave) from 300' north of CSAH 3 (Lake St) to CSAH 5 (Franklin Ave) in Minneapolis.

Include both the CSAH/MSAS/TH references and their corresponding street names in the TIP Description (see Resources link on Regional Solicitation webpage for examples).

Project Length (Miles)

0.93

to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project? No

If yes, please identify the source(s)

Federal Amount $7,000,000.00

Match Amount $6,550,000.00

Minimum of 20% of project total

Project Total $13,550,000.00

For transit projects, the total cost for the application is total cost minus fare revenues.

Match Percentage 48.34%

Minimum of 20%
Compute the match percentage by dividing the match amount by the project total

Source of Match Funds Hennepin County

A minimum of 20% of the total project cost must come from non-federal sources; additional match funds over the 20% minimum can come from other federal sources

Preferred Program Year

Select one: 2026

Select 2024 or 2025 for TDM and Unique projects only. For all other applications, select 2026 or 2027.

Additional Program Years:

Select all years that are feasible if funding in an earlier year becomes available.

Project Information-Roadways

County, City, or Lead Agency Hennepin County

Functional Class of Road A-Minor Reliever

Road System CSAH

TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET

Road/Route No. 22

i.e., 53 for CSAH 53

Name of Road Lyndale Ave

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55408

(Approximate) Begin Construction Date 05/01/2026

(Approximate) End Construction Date 11/01/2027

TERMINI:(Termini listed must be within 0.3 miles of any work)

From:
(Intersection or Address) 300' North of CSAH 3 (Lake St)

To:
(Intersection or Address) CSAH 5 (Franklin Ave)

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Miles of Sidewalk (nearest 0.1 miles)	1.9
Miles of Trail (nearest 0.1 miles)	0
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	0
Primary Types of Work	GRADING, AGG BASE, BIT BASE & SURFACE, STORM WATER, SIDEWALK, ADA, SIGNALS, STREETSCAPING, LIGHTING, AND CURB/GUTTER

Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:

New Bridge/Culvert No.:

Structure is Over/Under (Bridge or culvert name):

Requirements - All Projects

All Projects

1.The project must be consistent with the goals and policies in these adopted regional plans: Thrive MSP 2040 (2014), the 2040 Transportation Policy Plan (2018), the 2040 Regional Parks Policy Plan (2018), and the 2040 Water Resources Policy Plan (2015).

Check the box to indicate that the project meets this requirement. Yes

2.The project must be consistent with the 2040 Transportation Policy Plan. Reference the 2040 Transportation Plan goals, objectives, and strategies that relate to the project.

Briefly list the goals, objectives, strategies, and associated pages:

A) Transportation System Stewardship (p 2.2-2.4)

Objectives A & B; Strategies A1 & A2

The reconstruction of CSAH 22 (Lyndale Ave) is necessary as maintenance activities are no longer cost effective in extending the useful life of the roadway. The project is anticipated to promote safety for the most vulnerable users of the road through improved facilities for multimodal users.

B) Safety & Security (p 2.5-2.9)

Objectives A & B; Strategies B1, B3, B4, B6

This project presents an opportunity to address safety concerns for all modes through traffic calming strategies such as medians and curb extensions. The project also will provide safety improvements at four (27th, 25th, 22nd, and Franklin) intersections that rank in the Top 100 countywide in terms of existing crash frequency.

C) Access to Destinations (p 2.10-2.25)

Objectives A, B, C, D, & E; Strategies C1, C2, C3, C4, C8, C9, C15, C16, C17

This project will enhance multimodal access to dense, established residential and commercial nodes as well as the future B Line BRT Service along CSAH 3 (Lake St). The corridor serves as an important crossing for those walking or biking to the nearby Jefferson Community School and Whittier International Elementary School.

D) Competitive Economy (p2.26-2.29)

Objectives A, B & C; Strategies D1, D3, D4, D5

The corridor lies within an area of high job concentration as identified in Thrive MSP 2040 and provides critical access to activity nodes on CSAH 3 (Lake St), CSAH 5 (Franklin Ave), and Hennepin Ave. The corridor is essential to the regional economy as over 27,000 workers are located within 1 mile of the project and commuters rely on the corridor for access to freeways such as I-94 and I-35W.

E) Healthy & Equitable Communities (p 2.30-2.34)

Objectives A, B, C, D; Strategies E1, E3, E4, E5, E6, E7

This project provides opportunities to create a safer and more welcoming environment for those walking and biking through complete streets design elements. Modernizing stormwater infrastructure provides an opportunity to mitigate flooding concerns and future climate impacts. Extensive engagement will continue during the design phase to minimize impacts on historically underrepresented communities during and after construction. The project will build upon interim safety improvements at 25th and 27th Aves for people crossing.

F) Leveraging Transportation Investments to Guide Lane Use (p 2.35-2.41)

Objectives: A & C; Strategies: F1, F2, F5, F6, F7

This project will foster multimodal connections to existing and proposed bicycle and transit networks, including the future B Line BRT Service. Traffic calming strategies and complete street design measures will complement dense job concentrations along the corridor.

Limit 2,800 characters, approximately 400 words

3.The project or the transportation problem/need that the project addresses must be in a local planning or programming document. Reference the name of the appropriate comprehensive plan, regional/statewide plan, capital improvement program, corridor study document [studies on trunk highway must be approved by the Minnesota Department of Transportation and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses.

List the applicable documents and pages: Unique projects are exempt from this qualifying requirement because of their innovative nature.

1) Hennepin County 2022-2026 Capital Improvement Program (Attachment 6)

2) Hennepin County Board Resolution 22-0109 (Attachment 7)

3) Hennepin County 2040 Transportation Plan (pages 2-11 - 2-18)

URL: hennepin.us/-/media/hennepinus/your-government/projects-initiatives/2040-comprehensive-plan/comp-plan-2040-2-transportation.pdf

4) Hennepin County Climate Action Plan (pages 50-54)

URL: hennepin.us/climate-action/-/media/climateaction/ hennepin-county-climate-action-plan-final.pdf

5) Hennepin County Complete Streets Policy

URL: hennepin.us/completestreets

6) Hennepin County Bike Plan (page 36)

URL: hennepin.us/-/media/hennepinus/residents/transportation/biking/bicycle-transportation-plan.pdf

7) Hennepin County Pedestrian Plan (page 8)

URL: hennepin.us/-/media/hennepinus/residents/transportation/docum

ents/

pedestrian-plan.pdf

8) City of Minneapolis Vision Zero Action Plan (pages 7, 16)

URL: minneapolismn.gov/media/-www-contentassets/documents/VZ-Action-Plan-2020-22.pdf

9) City of Minneapolis Pedestrian Priority Network Map

URL: go.minneapolismn.gov/final-plan/walking/pedestrian-priority-network

10) Whittier Elementary School Safe Routes to School Plan (pages 23-25)

URL: nutritionservices.mpls.k12.mn.us/uploads/whittier_srts_plan_2018.pdf

Limit 2,800 characters, approximately 400 words

4.The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of transit stations/stops, transit terminals, park-and-ride facilities, or pool-and-ride lots. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding as a standalone project, but can be included as part of the larger submitted project, which is otherwise eligible. Unique project costs are limited to those that are federally eligible.

Check the box to indicate that the project meets this requirement. Yes

5.Applicant is a public agency (e.g., county, city, tribal government, transit provider, etc.) or non-profit organization (TDM and Unique Projects applicants only). Applicants that are not State Aid cities or counties in the seven-county metro area with populations over 5,000 must contact the MnDOT Metro State Aid Office prior to submitting their application to determine if a public agency sponsor is required.

Check the box to indicate that the project meets this requirement. Yes

6.Applicants must not submit an application for the same project elements in more than one funding application category.

Check the box to indicate that the project meets this requirement. Yes

7.The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is $500,000 and the maximum award is the total amount available each funding cycle (approximately $4,000,000 for the 2022 funding cycle).
Strategic Capacity (Roadway Expansion): *$1,000,000 to $10,000,000*
Roadway Reconstruction/Modernization: *$1,000,000 to $7,000,000*
Traffic Management Technologies (Roadway System Management): *$500,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

Check the box to indicate that the project meets this requirement. Yes

8.The project must comply with the Americans with Disabilities Act (ADA).

Check the box to indicate that the project meets this requirement. Yes

9.In order for a selected project to be included in the Transportation Improvement Program (TIP) and approved by USDOT, the public agency sponsor must either have a current Americans with Disabilities Act (ADA) self-evaluation or transition plan that covers the public right of way/transportation, as required under Title II of the ADA. The plan must be completed by the local agency before the Regional Solicitation application deadline. For the 2022 Regional Solicitation funding cycle, this requirement may include that the plan is updated within the past five years.

The applicant is a public agency that employs 50 or more people and has a completed ADA transition plan that covers the public right of way/transportation. Yes

(TDM and Unique Project Applicants Only) The applicant is not a public agency subject to the self-evaluation requirements in Title II of the ADA.

Date plan completed: 08/31/2015

Link to plan: hennepin.us/-/media/hennepinus/residents/transportation/documents/ada-sidewalk-transition-plan.pdf

The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public right of way/transportation.

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

10.The project must be accessible and open to the general public.

Check the box to indicate that the project meets this requirement. Yes

11.The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement, per FHWA direction established 8/27/2008 and updated 6/27/2017. Unique projects are exempt from this qualifying requirement.

Check the box to indicate that the project meets this requirement. Yes

12.The project must represent a permanent improvement with independent utility. The term independent utility means the project provides benefits described in the application by itself and does not depend on any construction elements of the project being funded from other sources outside the regional solicitation, excluding the required non-federal match. Projects that include traffic management or transit operating funds as part of a construction project are exempt from this policy.

Check the box to indicate that the project meets this requirement. Yes

13.The project must not be a temporary construction project. A temporary construction project is defined as work that must be replaced within five years and is ineligible for funding. The project must also not be staged construction where the project will be replaced as part of future stages. Staged construction is eligible for funding as long as future stages build on, rather than replace, previous work.

Check the box to indicate that the project meets this requirement. Yes

14.The project applicant must send written notification regarding the proposed project to all affected state and local units of government prior to submitting the application.

Check the box to indicate that the project meets this requirement. Yes

Roadways Including Multimodal Elements

1.All roadway and bridge projects must be identified as a principal arterial (non-freeway facilities only) or A-minor arterial as shown on the latest TAB approved roadway functional classification map.

Check the box to indicate that the project meets this requirement. Yes

Roadway Strategic Capacity and Reconstruction/Modernization and Spot Mobility projects only:

2.The project must be designed to meet 10-ton load limit standards.

Check the box to indicate that the project meets this requirement. Yes

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

3.Projects requiring a grade-separated crossing of a principal arterial freeway must be limited to the federal share of those project costs identified as local (non-MnDOT) cost responsibility using MnDOTs Cost Participation for Cooperative Construction Projects and Maintenance Responsibilities manual. In the case of a federally funded trunk highway project, the policy guidelines should be read as if the funded trunk highway route is under local jurisdiction.

Check the box to indicate that the project meets this requirement.

4.The bridge must carry vehicular traffic. Bridges can carry traffic from multiple modes. However, bridges that are exclusively for bicycle or pedestrian traffic must apply under one of the Bicycle and Pedestrian Facilities application categories. Rail-only bridges are ineligible for funding.

Check the box to indicate that the project meets this requirement.

Bridge Rehabilitation/Replacement projects only:

5.The length of the bridge clear span must exceed 20 feet.

Check the box to indicate that the project meets this requirement.

6. The bridge must have a National Bridge Inventory Rating of 6 or less for rehabilitation projects and 4 or less for replacement projects.

Check the box to indicate that the project meets this requirement.

Roadway Expansion, Reconstruction/Modernization, and Bridge Rehabilitation/Replacement projects only:

7. All roadway projects that involve the construction of a new/expanded interchange or new interchange ramps must have approval by the Metropolitan Council/MnDOT Interchange Planning Review Committee prior to application submittal. Please contact Michael Corbett at MnDOT (Michael.J.Corbett@state.mn.us or 651-234-7793) to determine whether your project needs to go through this process as described in Appendix F of the 2040 Transportation Policy Plan.

Check the box to indicate that the project meets this requirement. Yes

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$453,000.00
Removals (approx. 5% of total cost)	$453,000.00
Roadway (grading, borrow, etc.)	$913,000.00
Roadway (aggregates and paving)	$2,239,000.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$1,295,000.00
Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$490,000.00
Traffic Control	$453,000.00
Striping	$94,000.00
Signing	$45,000.00
Lighting	$400,000.00
Turf - Erosion & Landscaping	$216,000.00
Bridge	$0.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$2,055,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$2,732,000.00
Other Roadway Elements	$0.00
Totals	**$11,838,000.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$0.00
Sidewalk Construction	$533,000.00
On-Street Bicycle Facility Construction	$60,000.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$145,000.00

Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$123,000.00
Streetscaping	$216,000.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$395,000.00
Other Bicycle and Pedestrian Elements	$240,000.00
Totals	**$1,712,000.00**

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	$0.00
Stations, Stops, and Terminals	$0.00
Support Facilities	$0.00
Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	$0.00
Vehicles	$0.00
Contingencies	$0.00
Right-of-Way	$0.00
Other Transit and TDM Elements	$0.00
Totals	**$0.00**

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	$0.00
Subtotal	$0.00
Other Costs - Administration, Overhead,etc.	$0.00

Totals

Total Cost	$13,550,000.00
Construction Cost Total	$13,550,000.00
Transit Operating Cost Total	$0.00

Measure B: Project Location Relative to Jobs, Manufacturing, and Education

Existing Employment within 1 Mile:	29812
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	1090
Existing Post-Secondary Students within 1 Mile:	760
Upload Map	1647182298737_2022 RS Map 02 - CSAH 22 (Lyndale Ave) Reconstruction Project - Regional Economy.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

RESPONSE: Select one for your project, based on the updated 2021 Regional Truck Corridor Study:

Along Tier 1:	
Miles:	0
(to the nearest 0.1 miles)	
Along Tier 2:	
Miles:	0
(to the nearest 0.1 miles)	
Along Tier 3:	
Miles:	0
(to the nearest 0.1 miles)	
The project provides a direct and immediate connection (i.e., intersects) with either a Tier 1, Tier 2, or Tier 3 corridor:	Yes
None of the tiers:	

Measure A: Current Daily Person Throughput

Location	CSAH 22 between CSAH 5 and 26th St W (SEQ ID # 62117)
Current AADT Volume	29500
Existing Transit Routes on the Project	2, 4, 17, 21, 113, 114

For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (if applicable).

Upload Transit Connections Map	1647182752150_2022 RS Map 04 - CSAH 22 (Lyndale Ave) Reconstruction Project - Transit Connections.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	38350.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume Yes

If checked, METC Staff will provide Forecast (2040) ADT volume

OR

Identify the approved county or city travel demand model to determine forecast (2040) ADT volume

Forecast (2040) ADT volume

Measure A: Engagement

i.Describe any Black, Indigenous, and People of Color populations, low-income populations, disabled populations, youth, or older adults within a ½ mile of the proposed project. Describe how these populations relate to regional context. Location of affordable housing will be addressed in Measure C.
ii.Describe how Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing were engaged, whether through community planning efforts, project needs identification, or during the project development process.
iii.Describe the progression of engagement activities in this project. A full response should answer these questions:

Within 0.5 miles of the CSAH 22 (Lyndale Ave) project corridor the population is between 6% and 50% non-white (2020 Census). 5% to 12% of the population are people with a disability of any kind; 2% to 16% of people are over the age of 65; 4% to 17% of children under the age of 18, and 8% to 25% of residents are under the federal poverty level. These demographic profiles are based on ACS 2014-2018 5-year estimates.

Response:

Public engagement for the project will continue to be an iterative process. The county is implementing temporary safety improvements along the corridor in anticipation of a full roadway reconstruction. Initial engagement began on December 2, 2019. County elected officials held a community listening session in response to a pedestrian fatality that occurred along CSAH 22 (Lyndale Ave). This led to the development of interim improvements and initiated the corresponding capital programming. The community concerns are supported by crash data demonstrating that CSAH 22 (Lyndale Ave) experiences a relatively high frequency of crashes for all modes of travel. Major themes from the listening session included vehicle speed reduction, a desire for a 4 to 3 lane conversion, better lighting, and improved safety for pedestrians.

The listening session led to an interim project to install medians at Lyndale/25th St and Lyndale/27th. County staff attended Open Streets Lyndale on October 10, 2021 and interacted with 150+ attendees. In 2022, the county is planning to pilot the 4 to 3 lane conversion on CSAH 22 (Lyndale Ave) from 29th St to CSAH 5 (Franklin Ave) with engagement continuing during the spring and summer of 2022. Engagement will include attending community events and pop-ups, virtual listening sessions targeted to Latino and Somali communities, in-person or virtual public meetings,

website engagement, door to door outreach, and coordination with neighborhood, businesses, and advocacy groups by attending standing meetings. See Attachment 8 for previous engagement materials along with the project website (hennepin.us/lyndale-avenue-safety).

The engagement activities described above continue to be critical for developing both the interim improvements and the CSAH 22 (Lyndale Ave) Reconstruction Project. Feedback from residents and organizational leaders emphasized the need to improve corridor safety for all modes with a focus on pedestrians; especially people with limited mobility. Engagement efforts yielded the following themes:

- Pedestrian crossing safety concerns

- Curb ramp and sidewalk deficiency

- Motor vehicle weaving and speeding

The process is iterative with ongoing communication, taking time to interact with the community as to how the project team achieves the project goals in the design.

(Limit 2,800 characters; approximately 400 words):

Measure B: Equity Population Benefits and Impacts

Describe the projects benefits to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Benefits could relate to:
This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Equity populations residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Equity populations specifically identified through engagement, and substantiate benefits with data.
Acknowledge and describe any negative project impacts to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Describe measures to mitigate these impacts. Unidentified or unmitigated negative impacts may result in a reduction in points.
Below is a list of potential negative impacts. This is not an exhaustive list.

Response:

The project will benefit Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. The reconstruction of CSAH 22 (Lyndale Ave) will improve overall corridor safety and make crossing intersections safer and easier for people walking and rolling.

Up to 30% of residents in nearby census tracts do not own a car. These residents rely on walking, rolling, and transit to travel. The existing auto-centric design of CSAH 22 (Lyndale Ave) negatively impacts pedestrians; especially users with limited mobility and sight impairments. Hennepin County will construct a complete street that accommodates the travel needs of pedestrians and transit in addition to people driving, resulting in a safer travel experience for all. A street that encourages walking will result in public health benefits by improving access to businesses, schools, and dwellings.

People of Color, those with disabilities, older adults and children make up a high proportion of residents adjacent to the corridor. Often these populations cannot drive or lack access to private automobiles. Reconstructing CSAH 22 (Lyndale Ave) to make it safer and more comfortable to walk and roll will have a direct and positive impact on the mobility, access, and quality of life of these population groups. Traveling for daily needs and recreation will be safer and easier.

Improvements will include ADA compliant curb ramps, APS, sidewalk, upgraded signals, 3-lane configuration, two-stage crossing with pedestrian refuge island at unsignalized intersections, street lighting, enhanced pavement markings, and optimized traffic signal operation.

The CSAH 22 (Lyndale Ave) Reconstruction Project will connect to other programmed projects located at the north and south termini, leveraging other local investments; adding to greater network cohesion. CSAH 5 (Franklin Ave) at the north termini is being reconstructed by both the city and county to improve safety and access for people walking, biking and driving. CSAH 3 (Lake St) at the south termini will experience B Line BRT service as introduced by the Met Council. In concert with the CSAH 22 (Lyndale Ave) Reconstruction Project; major travel corridors in this area will be redesigned to improve the experience of people walking, using transit, and biking.

Increased noise and impacts to the roadway and sidewalks are anticipated during construction. The contractor will be required to follow temporary traffic control plans which specify detour routes for all people traveling through the corridor. Access to adjacent buildings will be critical, and staff will seek out opportunities to minimize the magnitude and duration of impacts to nearby businesses and services.

(Limit 2,800 characters; approximately 400 words):

Measure C: Affordable Housing Access

Describe any affordable housing developmentsexisting, under construction, or plannedwithin ½ mile of the proposed project. The applicant should note the number of existing subsidized units, which will be provided on the Socio-Economic Conditions map. Applicants can also describe other types of affordable housing (e.g., naturally-occurring affordable housing, manufactured housing) and under construction or planned affordable housing that is within a half mile of the project. If applicable, the applicant can provide self-generated PDF maps to support these additions. Applicants are encouraged to provide a self-generated PDF map describing how a project connects affordable housing residents to destinations (e.g., childcare, grocery stores, schools, places of worship).

Describe the projects benefits to current and future affordable housing residents within ½ mile of the project. Benefits must relate to affordable housing residents. Examples may include:

This is not an exhaustive list. Since residents of affordable housing are more likely not to own a private vehicle, higher points will be provided to roadway projects that include other multimodal access improvements. A full response will support the benefits claimed, identify benefits specific to residents of affordable housing, identify benefits addressing a transportation issue affecting residents of affordable housing specifically identified through engagement, and substantiate benefits with data.

A total of 25 affordable, subsidized housing developments are located within 0.5 miles of the project area. Attachment 9 provides a map and detail summary of these locations, including unit sizes and affordability limits based on area median incomes. These include developments for families, those with disabilities, and seniors. One development of note is the Charles Horn Towers, a Minneapolis Public Housing development that includes a total of 491 units dedicated to seniors, which represents a significant population of pedestrian and transit users who would benefit from proposed multimodal improvements along CSAH 22 (Lyndale Ave). As identified in the Socio-Economic Conditions map that was generated in MetCouncil's mapping application, 4,083 subsidized units exist in census tracts within 0.5 miles of the project.

Response:

The proposed project will benefit the residents of affordable housing development through the improvement of accommodations for all modes, particularly those walking, taking transit, and biking. CSAH 22 (Lyndale Ave) presents a barrier to community cohesion due to its current 4-lane undivided configuration, speed, and crash frequency. Four intersections currently are in the Top 100 intersections of crash frequency in Hennepin County. Multimodal design elements will improve access to the numerous destinations along the corridor, as noted in the Socio-Economic Equity Map (Attachment 10); including two grocery stores and numerous commercial land uses. The corridor also serves as a major crossing for Whittier International Elementary School and Jefferson Community School. In 2018, Whittier International Elementary School completed a SRTS Plan that highlighted the entire CSAH 22 (Lyndale Ave) corridor, identifying the Lyndale/26th and Lyndale/27th intersections as barriers for students

due to high speeds and long crossing distances (see Attachment 11).

User comfort for first/last mile transit connections will also be improved for existing Metro Transit Route 4, which connects to the Downtown Central Business District.

This project will also improve conditions for multimodal users aby addressing drainage issues throughout the corridor. Sidewalks and intersections experience severe freeze and thaw cycles that lead to ice and snow accumulation and large areas of ponding. Drainage issues pose a safety hazard, particularly to those with limited mobility, and contribute to the deterioration of roadside assets. Major commercial and residential uses along the corridor have also experienced flooding issues throughout the years. Residents of affordable housing who rely on CSAH 22 (Lyndale Ave) to access important destinations will see significant benefit from improved drainage conditions.

(Limit 2,800 characters; approximately 400 words):

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	Yes
Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	
Upload the Socio-Economic Conditions map used for this measure.	1646928181163_2022 RS Map 03 - CSAH 22 (Lyndale Ave) Reconstruction Project - Socio Economic Conditions.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
2008	0.06	120.48	129.548
1987	0.02	39.74	42.731
1934	0.85	1643.9	1767.634
	1	**1804**	**1940**

Total Project Length

Total Project Length (as entered in "Project Information" form) 0.9

Average Construction Year

Weighted Year 1939

Total Segment Length (Miles)

Total Segment Length 0.93

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements: Yes

Response:

CSAH 22 (Lyndale Ave) was originally constructed with streetcar tracks which have been paved over. As a result, frequent pavement treatments are necessary to ensure smooth pavement. Although the forthcoming 3-lane will provide space for turning vehicles, many signals lack exclusive phasing, causing delays. A StreetLight analysis estimates approximately 2,450 daily commercial vehicles (Attachment 12).

A reconstruction will ensure smooth pavement along this key corridor that connects a Tier 2 (Franklin Ave) and Tier 3 (Lake St) truck route. Driveway aprons will be designed to accommodate freight delivery services. Signal upgrades will allow for flexible left-turn phasing to minimize delays.

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines:

Yes

The forthcoming 3-lane in 2022 will minimize the potential for dual-threat crashes. However, on-street parking areas and buildings limit available intersection sight distance. In addition, bus pick-up/drop-off is currently facilitated adjacent to the curb.

Response:

Compact intersections with curb extensions will better define areas where on-street parking is permitted and allow side street users to better position themselves to see conflicting vehicles. Since sight distance is directly related to vehicle speeds, the introduction of medians will manage vehicle speeds. Specific consideration will be given to the design at 29th St, 27th St, and 25th St as these locations are not currently signalized.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics:

Yes

This project will complement the forthcoming 3-lane configuration by introducing more raised medians, with plantings whenever feasible, to promote traffic calming and discourage weaving. Also, the preferred typical section, including facility widths, will be evaluated during project development based on stakeholder input, data analysis, and an environmental review.

Response:

Specific consideration will be given for a gateway design at the Lyndale/Franklin intersection to manage vehicle speeds accessing Lyndale Ave from the north. Furthermore, the area surrounding 29th St and the Midtown Greenway will be explored for potential treatments since turning movements and on-street parking are restricted.

(Limit 700 characters; approximately 100 words)

Access management enhancements:

Yes

Approximately 45 access points (including 8 local streets and 37 driveways) exist along Lyndale Ave where most turning movements are permitted. These conditions present a high likelihood for rear-end, left-turn, and right-angle crashes. This is especially concerning for people walking as a number of commercial destinations exist along Lyndale Ave.

Response:

Each access point will be evaluated to determine if a viable alternate route exists to support modifying access. The forthcoming 3-lane configuration will be complemented by raised medians to restrict minor access points to right-in/right-out conditions. Retained driveways will be redesigned to promote accessibility along the sidewalk facilities.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements:

Yes

Southbound users along Lyndale Ave approach Franklin Ave through a series of horizontal curves. These conditions result in weaving maneuvers as people driving position themselves in the desired lane. Adjustments to pavement markings and signs on the north approach at Lyndale/Franklin will be considered to communicate lane information.

Response:

In addition, a slight vertical curve exists at the Midtown Greenway that limits sight distance. The design of curb lines and raised medians will be evaluated to assume space where on-street parking and turning movements are restricted.

Furthermore, lane transitions will follow MUTCD requirements to promote natural shifts throughout the corridor.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation:

Yes

A boulevard currently exists along both sides of Lyndale Ave, however, it is hardscaped in many areas. The curb-to-curb width is 60 ft that is primarily pavement. Also, a number of locations, especially near 22nd St, were identified by MetCouncil's Localized Flood Map to be susceptible for flooding.

Response:

Staff will collaborate with the city, the Mississippi River WMO, and the Minnehaha Creek WD to explore BMPs to improve water quality and withstand desired flood events. Consideration will be given to soil conditions, climate, and on-going maintenance implications. The new typical section is anticipated to reduce impervious surfaces to provide more space for capturing water during rain events.

(Limit 700 characters; approximately 100 words)

Signals/lighting upgrades:

Yes

The existing signals, with the exception of Lyndale/24th, are nearing the end of their useful life. Communications rely on outdated copper wire that offers limited functionality. Lighting conditions are inconsistent as upgrades have occurred through retrofits and redevelopments.

Response:

Signal systems will be updated to the latest technologies; including phasing for turning vehicles, detection, high-speed communications, and ITS components. The project will follow city's Street Lighting Policy as Lyndale Ave is identified as a Pedestrian Street Lighting Corridor (Attachment 13). Consideration will be given to crosswalk lighting design given the high pedestrian activity within this commercial area.

(Limit 700 characters; approximately 100 words)

Other Improvements

Yes

Metro Transit's Network Next Study identifies Route 4 as a potential Bus Rapid Transit (BRT) service candidate in the 2030s. This reconstruction project presents an opportunity to improve first/last mile connections to future BRT stations along Lyndale Ave. (Url: https://www.metrotransit.org/Data/Sites/1/media/network-next/nn-corridor-profile-johnson-lyndale.pdf)

Response:

In addition, the project development process will include an extensive review of parking demand since Lyndale Ave lies within a thriving commercial area. Consideration will be given to bicycle, scooter, and electric vehicle parking in an effort to further promote choices in transportation.

(Limit 700 characters; approximately 100 words)

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
27.0	23.0	4.0	2141	2141	8564.0	8564.0	N/A	1649257032277_CSAH 22 (Lyndale Ave) Reconstruction Project - Synchro Report for Congestion.pdf
						8564		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	8564.0
Total Peak Hour Delay Reduced	8564.0

Measure B:Roadway projects that do not include new roadway segments or railroad grade-separation elements

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
3.88	3.71	0.17
4	**4**	**0**

Total

Total Emissions Reduced:	0.17
Upload Synchro Report	1649257194087_CSAH 22 (Lyndale Ave) Reconstruction Project - Synchro Report for Emissions.pdf

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

Measure B: Roadway projects that are constructing new roadway segments, but do not include railroad grade-separation elements (for Roadway Expansion applications only):

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
0	0	0

Total Parallel Roadway

Emissions Reduced on Parallel Roadways	0

Upload Synchro Report

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

New Roadway Portion:

Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons:	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced or Produced on New Roadway (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0.0

Measure B:Roadway projects that include railroad grade-separation elements

Cruise speed in miles per hour without the project:	0
Vehicle miles traveled without the project:	0
Total delay in hours without the project:	0
Total stops in vehicles per hour without the project:	0
Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0

Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons (F1)	0
Fuel consumption in gallons (F2)	0
Fuel consumption in gallons (F3)	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	

Measure A: Roadway Projects that do not Include Railroad Grade-Separation Elements

Crash Modification Factor Used:

(Limit 700 Characters; approximately 100 words)

Attachment 14 lists reported crashes (2019-2021) along the project, and Attachment 15 lists CMFs applied in the B/C Analysis.

XX) Countermeasure: Crashes targeted (CMF ID, % reduction)

01) Additional signal heads: RE & SS (CMF 1414, 28%)

02) Upgrade signal with mast arms: RA (CMF 1420, 49%)

03) Install medians: PED (CMF 3034, 39%)

04) Prot/perm LT phasing: LT (CMF 4140, 42%)

05) Improve lighting: Nighttime (CMF 8477, 48.1%)

06) Resurface pavement: RE, SS, LT, & RA (CMF 9298, 9.9%)

07) Reduce on-street parking: Parked vehicles (CMF N/A, 10%)

08) Install medians: PED (FHWA Desktop Reference, 56%)

09) Install curb extensions: PED (MnDOT Best Practices for Ped & Bike Safety, 22.5%)

Rationale for Crash Modification Selected:

The B/C Analysis evaluated the project corridor in 8 sections (comprised of intersections and segments) to target crash themes. Up to 2 (of the 9 selected) CMFs were applied to each crash based on the reported crash type. A maximum of 4 CMFs were applied to each intersection or segment. The assumptions below were based on sound engineering judgement and available information at the time of application submittal.

- On-street parking is currently permitted along both sides of CSAH 22 (Lyndale Ave). Given both the high frequency of crashes involving parked vehicles and the sensitivity of on-street parking to local businesses, a modest 10% reduction in crashes was assumed. It's understood that the elimination or reduction in on-street parking areas will evaluated in project development.

- Curb extensions will be considered at each intersection, however, they may not be implemented in quadrants that include a transit stop. Therefore, the crash reduction benefit provided by curb extensions was divided by 2 under the assumption that they would likely only be feasible in 2 of the 4 quadrants.

The overall crash reduction expected from the project is 20% (based on a 80% crash modification factor) Approximately 20% (19) of the total number of reported crashes across the years 2019 to 2021 will be reduced annually through the implementation of safety countermeasures.

(Limit 1400 Characters; approximately 200 words)

Project Benefit ($) from B/C Ratio	$29,707,329.00
Total Fatal (K) Crashes:	1
Total Serious Injury (A) Crashes:	5

Total Non-Motorized Fatal and Serious Injury Crashes:	3
Total Crashes:	290
Total Fatal (K) Crashes Reduced by Project:	1
Total Serious Injury (A) Crashes Reduced by Project:	1
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	
Total Crashes Reduced by Project:	
Worksheet Attachment	1649794211790_CSAH 22 (Lyndale Ave) Reconstruction Project - BC Analysis Worksheets.pdf

Please upload attachment in PDF form.

Roadway projects that include railroad grade-separation elements:

Current AADT volume:	0
Average daily trains:	0
Crash Risk Exposure eliminated:	0

Measure A: Pedestrian Safety

Determine if these measures do not apply to your project. *Does the project match either of the following descriptions?*
If either of the items are checked yes, then ***score for entire pedestrian safety measure is zero****. Applicant does not need to respond to the sub-measures and can proceed to the next section.*

Project is primarily a freeway (or transitioning to a freeway) and does not provide safe and comfortable pedestrian facilities and crossings.	No
Existing location lacks any pedestrian facilities (e.g., sidewalks, marked crossings, wide shoulders in rural contexts) and project does not add pedestrian elements (e.g., reconstruction of a roadway without sidewalks, that doesnt also add pedestrian crossings and sidewalk or sidepath on one or both sides).	No

SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements and Risk Elements
To receive maximum points in this category, pedestrian safety countermeasures selected for implementation in projects should be, to the greatest extent feasible, consistent with the countermeasure recommendations in the Regional Pedestrian Safety Action Plan and state and national best practices. Links to resources are provided on the Regional Solicitation Resources web page.
Please answer the following two questions with as much detail as possible based on the known attributes of the proposed design. If any aspect referenced in this section is not yet determined, describe the range of options being considered, to the greatest extent available. If there are project elements that may increase pedestrian risk, describe how these risks are being mitigated.
1. Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, midblock locations, and roundabouts.
Treatments and countermeasures should be well-matched to the roadways context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links.

Response:

CSAH 22 (Lyndale Ave) is currently a 4-lane undivided roadway, however, it will be converted to a 3-lane in 2022 as part of a pavement preservation activity. In addition, enhanced crossings will be introduced at the 25th and 27th intersections in 2022 that include raised medians and crossing beacons. Although these near-term activities will improve the safety for people walking, a full reconstruction will allow for maximum introduction of complete streets best practices for people walking along and across CSAH 22 (Lyndale Ave).

Signalized intersections

The proposed project is anticipated to replace and/or upgrade each of the 5 signalized intersections. Although contingent on the project development process, the planning level concept identifies approximately 10 curb extensions, 2 raised medians, and 18 high-visibility crosswalks that may be feasible at signalized intersections. Also, the use of protected/permissive left-turn phasing, countdown timers, and APS will allow for safe and comfortable crossings. In addition, the use of Intelligent Transportation Systems (ITS) strategies will allow staff to optimize signal timing to maintain a reasonable balance of mobility and delay. Furthermore, existing intersection lighting conditions will be upgraded to provide adequate nighttime visibility to promote user safety and security. Lastly, on-street parking will be prohibited near signalized intersections to ensure sight lines are not obstructed.

Unsignalized intersections

The proposed project is anticipated to redesign each of the 3 unsignalized intersections to advance complete streets strategies. Although contingent on

the project development process, the planning level concept identifies approximately 5 curb extensions, 4 raised medians, 4 high-visibility crosswalks, and 2 crossing beacons that may be feasible at unsignalized intersections. Furthermore, existing intersection lighting conditions will be upgraded to provide adequate nighttime visibility to promote user safety and security. Lastly, on-street parking will be prohibited near unsignalized intersections to ensure sight lines are not obstructed.

Roundabout intersections

Although contingent on the project development process, no roundabouts are anticipated as part of the project.

Midblock locations

The proposed project will aim to encourage pedestrian crossings at intersections, however, mid-block crossings are not anticipated to be prohibited via the installation of barriers. In addition, the project will include a number of raised medians that not only offer refuge, but also eliminate the potential for dual threat crashes. Furthermore, existing corridor lighting conditions will be upgraded to provide adequate nighttime visibility to promote user safety and security.

(Limit 2,800 characters; approximately 400 words)

Is the distance in between signalized intersections increasing (e.g., removing a signal)?

Select one: No

If yes, describe what measures are being used to fill the gap between protected crossing opportunities for pedestrians (e.g., adding High-Intensity Activated Crosswalk beacons to help motorists yield and help pedestrians find a suitable gap for crossing, turning signal into a roundabout to slow motorist speed, etc.).

Response:

Although contingent on the project development process, the distance between signalized intersections is not anticipated to increase as part of the CSAH 22 (Lyndale Ave) Reconstruction Project.

(Limit 1,400 characters; approximately 200 words)

Will your design increase the crossing distance or crossing time across any leg of an intersection? (e.g., by adding turn or through lanes, widening lanes, using a multi-phase crossing, prohibiting crossing on any leg of an intersection, pedestrian bridge requiring length detour, etc.). This does not include any increases to crossing distances solely due to the addition of bike lanes (i.e., no other through or turn lanes being added or widened).

Select one: No

If yes,
How many intersections will likely be affected?

Response: 0

Describe what measures are being used to reduce exposure and delay for pedestrians (e.g., median crossing islands, curb bulb-outs, etc.)

Response:

Although contingent on the project development process, the planning level concept identifies approximately 15 curb extensions, 6 raised medians, 2 crossing beacons, and 22 high visibility crosswalks that may be feasible as part of the CSAH 22 (Lyndale Ave) Reconstruction Project.

(Limit 1,400 characters; approximately 200 words)

If grade separated pedestrian crossings are being added and increasing crossing time, describe any features that are included that will reduce the detour required of pedestrians and make the separated crossing a more appealing option (e.g., shallow tunnel that doesnt require much elevation change instead of pedestrian bridge with numerous switchbacks).

Response:

Although contingent on the project development process, no grade separated pedestrian crossings are anticipated to be introduced as part of the CSAH 22 (Lyndale Ave) Reconstruction Project.

(Limit 1,400 characters; approximately 200 words)

If mid-block crossings are restricted or blocked, explain why this is necessary and how pedestrian crossing needs and safety are supported in other ways (e.g., nearest protected or enhanced crossing opportunity).

Response:

Although contingent on the project development process, no mid-block crossings are anticipated to be prohibited as part of the CSAH 22 (Lyndale Ave) Reconstruction Project.

(Limit 1,400 characters; approximately 200 words)

2. Describe how motorist speed will be managed in the project design, both for through traffic and turning movements. *Describe any project-related factors that may affect speed directly or indirectly, even if speed is not the intended outcome (e.g., wider lanes and turning radii to facilitate freight movements, adding turn lanes to alleviate peak hour congestion, etc.). Note any strategies or treatments being considered that are intended to help motorists drive slower (e.g., visual narrowing, narrow lanes, truck aprons to mitigate wide turning radii, etc.) or protect pedestrians if increasing motorist speed (e.g., buffers or other separation from moving vehicles, crossing treatments appropriate for higher speed roadways, etc.).*

Response:

The segment of CSAH 22 (Lyndale Ave) between CSAH 3 (Lake St) and CSAH 5 (Franklin Ave) was previously under MnDOT jurisdiction as Highway 169 until the 1980s, therefore, it lacks typical complete streets elements to promote walking, using transit, and biking as attractive transportation options. As a result, this reconstruction project will maximize proven design strategies to promote uniform, safe, and reasonable speeds by people driving along the corridor.

Intersection design strategies

A total of 8 intersections are located within the project limits where more compact intersection designs will be introduced to promote traffic calming. At the 5 signalized intersections, it's anticipated that approximately 10 curb extensions, 2 raised medians, and 18 high visibility crosswalk markings will be introduced or upgraded to encourage uniform, safe, and reasonable speeds by people driving. The use of protected/permissive left-turn phasing, countdown timers, and accessible pedestrian signals (APS) at signalized intersections will allow for safe and flexible left-turn operation. Also, ITS components (such as high-speed signal communications, video detection cameras, and pan-tilt-zoom cameras) will allow for adaptive signal control and incident management by the City of Minneapolis' Traffic Management Center. At the 3 non-signalized intersections within the project limits, it's anticipated that approximately 5 curb extensions, 4 raised medians, 4 high-visibility crosswalk markings, and two crossing beacons will be introduced to encourage high-yielding rates by people driving as this area experiences high crossing activity by people walking. In addition, areas where on-street parking is prohibited will be clearly defined to maximize pedestrian sight distance and vehicle stopping distance along the corridor; especially at intersections.

Segment design strategies

New or upgraded raised medians will maximize safety benefits in terms of managing access, slowing vehicle speeds, and providing refuge space for people who choose to cross mid-block. Green streets strategies, such as plantings, will be explored during project development to determine their feasibility. Green spaces will be key in providing adequate space for snow storage and signs to ensure that sidewalk and pedestrian ramp areas remain walkable throughout all times of year. In addition, each of the approximate 37 local driveways along this segment of CSAH 22 (Lyndale Ave) will be redesigned to properly transition across the sidewalk facilities; minimizing uncomfortable disturbances to the pedestrian access route (PAR).

(Limit 2,800 characters; approximately 400 words)

If known, what are the existing and proposed design, operation, and posted speeds? Is this an increase or decrease from existing conditions?

Response:

The current posted speed limit along CSAH 22 (Lyndale Ave) is 30 mph.

The proposed design speed limit(s) will be determined as part of the project development process based on data analysis, stakeholder input, and environmental review. At this time, an increase in the existing speed limit is not anticipated. Project elements such as raised medians, curb extensions, streetscaping, and lane widths will support the proposed design speed limit(s).

(Limit 1,400 characters; approximately 200 words)

SUB-MEASURE 2: Existing Location-Based Pedestrian Safety Risk Factors

These factors are based on based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following factors are present. Applicants receive more points if more risk factors are present.

Existing road configuration is a One-way, 3+ through lanes or	
Existing road configuration is a Two-way, 4+ through lanes	
Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of 30 MPH or more	Yes

Existing road has AADT of greater than 15,000 vehicles per day	Yes
List the AADT	29500

SUB-MEASURE 3: Existing Location-Based Pedestrian Safety Exposure Factors

These factors are based on based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following existing location exposure factors are present. Applicants receive more points if more risk factors are present.

Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes. If service was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 service for this item.)	Yes
Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays. If service frequency was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 frequency for this item.)	Yes
Existing road is within 500 of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)	Yes

If checked, please describe:

The following transit routes currently operate along or across CSAH 22 (Lyndale Ave):

- Route 002 (High Frequency)

- Route 004

- Route 017

- Route 021 (High Frequency)

- Route 113

- Route 114

In addition, CSAH 22 (Lyndale Ave) is located within the Uptown commercial district that includes a high number of shopping, dining, and entertainment destinations (url uptownminneapolis.com/uptown-association/about-uptown/). Below is a summary of the key destinations located along CSAH 22 (Lyndale Ave), noting that many other places of interest exist within walking distance but were kept off this list for simplicity.

- The Wedge Community Co-op (Grocery)

- Aldi (Grocery)

- CC Club (Dining/Bar)

- French Meadow Cafe (Dining)

- The Lynhall No. 2640 LynLake (Dining)

- World Street Kitchen (Dining)

- Bob's Java Hut (Coffee)

- Erik's Bike Board Ski (Store)

- LynLake Brewary (Bar/Dining)

- Up-Down Minneapols (Entertainment/Dining)

- Jungle Theater (Entertainment)

(Limit 1,400 characters; approximately 200 words)

Existing road is within 500 of other known pedestrian generators (e.g., school, civic/community center, senior housing, multifamily housing, regulatorily-designated affordable housing)	Yes

If checked, please describe:

Similarly, CSAH 22 (Lyndale Ave) includes a high number of educational, community, public service, and residential places of interest. Below is a summary of the key locations along CSAH 22 (Lyndale Ave), noting that many other places exist within walking distance but were kept off this list for simplicity.

- Soo Line Community Garden (Community Resource)

- Midtown Greenway (Recreation, Transportation, Community Resource)

- Lime Apartments (Market-Rate Multifamily Housing)

- Anytime Fitness (Fitness)

- The Murals of LynLake (Market-Rate Multifamily Housing)

- Lyndale Green Apts (63 Unit Income-Restricted Housing)

- Rex26 (86 Unit Market-Rate Multifamily Housing)

- Giant Wash Coin Laundry (Laundromat)

- Pure Lowry Apartments (113 Unit Market-Rate Multifamily Housing)

- Snapology of Minneapolis (Childcare, Recreation)

- Springhouse Ministry Center (Religious Organization, Community Activities)

In addition, the Uptown neighborhood is home to dense multifamily developments of varying ages

and levels of affordability for which granular data is not available. However, the 2020 census indicates that census blocks near the project area contain over 1,800 units of occupied housing.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The anticipated 3-lane configuration will make the corridor safer and more inviting for all users. The primary benefit will be the reduction of crossing distance, conflict points, and multiple-threats for people crossing CSAH 22 (Lyndale Ave) in this active, transit-supported urban environment. The project includes curb extensions, ADA accessibility improvements, wider sidewalks, and pedestrian refuge islands.

The corridor is home to dozens of local businesses, which are supported by customers walking, using transit, and biking. Matching the design to its context is expected to support multimodal transportation and the land uses to promote car-free or car-light lifestyles. Within the project limits, there are two grocery stores, many cafes (at least 10 sidewalk cafes), breweries, restaurants, and businesses (like pharmacies and salons) mixed in with multifamily housing.

This project is expected to reduce motor vehicle speeds and make user behavior more predictable. This is important for people with vision loss, many of whom frequent CSAH 22 (Lyndale Ave) for Metro Transit Route 4 and the regional nonprofit Vision Loss Resources, which provides training, classes, activities, and support for people with vision loss.

The CSAH 22 (Lyndale Ave) Reconstruction Project will benefit people biking by reducing motor vehicle speeds and conflict points at intersections. Longer-distance north-south bicycling traffic is served by the parallel Bryant Ave low-stress bikeway, part of Minneapolis's All Ages and Abilities Network, located 600' west. See Attachment 16 for a map illustrating key multimodal connections, such as the nearby Midtown

Greenway (RBTN Tier 1 corridor). Local trips to the shops, homes, and other destinations on CSAH 22 (Lyndale Ave) will be made safer by reducing motor vehicle weaving and speeding; people biking may also choose to ride in the parking lane if unobstructed. Once at their destinations, people biking will find more space for maneuvering and parking their bikes. Other key connections include 26th and 28th streets for east-west biking, and Franklin Ave, which will soon have dedicated facilities for people biking.

This project will benefit transit users with the aforementioned pedestrian improvements, more space dedicated to bus stops, and raised medians at transit stops that will discourage improperly passing departing buses. The project is expected to have secondary benefits to transit by increasing the attractiveness of the corridor, further supporting ridership.

This project is expected to benefit people driving by reducing sideswipe, rear-end, and right-angle crashes while providing a new pavement surface, while also maintaining access to local businesses and facilitating regional trips.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

If the applicant is completing a transit application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.
Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1.Public Involvement (20 Percent of Points)

Projects that have been through a public process with residents and other interested public entities are more likely than others to be successful. The project applicant must indicate that events and/or targeted outreach (e.g., surveys and other web-based input) were held to help identify the transportation problem, how the potential solution was selected instead of other options, and the public involvement completed to date on the project. The focus of this section is on the opportunity for public input as opposed to the quality of input. NOTE: A written response is required and failure to respond will result in zero points.

Multiple types of targeted outreach efforts (such as meetings or online/mail outreach) specific to this project with the general public and partner agencies have been used to help identify the project need.

Yes

100%

At least one meeting specific to this project with the general public has been used to help identify the project need.

50%

At least online/mail outreach effort specific to this project with the general public has been used to help identify the project need.

50%

No meeting or outreach specific to this project was conducted, but the project was identified through meetings and/or outreach related to a larger planning effort.

25%

No outreach has led to the selection of this project.

0%

Describe the type(s) of outreach selected for this project (i.e., online or in-person meetings, surveys, demonstration projects), the method(s) used to announce outreach opportunities, and how many people participated. Include any public website links to outreach opportunities.

This application is for the final phase (of three phases) to reconstruct CSAH 22 (Lyndale Ave) in Minneapolis as a safer and more inviting complete street than the current four-lane design for people walking, using transit, biking, as well as people driving. The previous phases, located between 56th St & CSAH 3 (Lake St), converted the roadway from four lanes to three with more boulevard and median space. The conversion has been popular and successful in terms of improving user accessibility, mobility, and safety.

Residents within the project corridor organized to request the three-lane configuration be extended northward. Residents have been motivated by close-calls and pedestrian crashes, including a recent crash that resulted in a fatality. They formed a coalition that petitioned the county to improve the roadway for our most vulnerable road users.

Response:

County staff have continued to work with residents from 2019 to 2022 and have responded with short-term improvements planned for later in 2022 (pedestrian refuge islands at 25th and 27th streets and a pilot 4-3 restriping); with this application seeking federal funds for permanent improvements through a full reconstruction.

The conversation included community-organized public open house meetings with county engineering staff, local elected officials, community leaders, and residents. The county worked with its Active Transportation Committee, the Minneapolis Bicycle Advisory Committee, and Minneapolis Pedestrian Advisory Committee on potential strategies. The county also worked with Our Streets Minneapolis to understand community needs and arrive at improvements that balance competing

needs for limited right of way. The county spoke with neighborhood groups, business associations, and faith-based groups. The county will continue the conversation through mailings, emails, pop-up events, and one-on-one conversations with residents; including those that are typically underrepresented.

The county will continue the conversation with residents as the 4-3 pilot is installed and people have had a chance to experience the new configuration. Resident input on the new configuration will help to inform the permanent improvements to be installed with this application.

Engagement in 2022 and 2023 will include additional door-to-door visits, advisory committee meetings, mailings, and participation in Open Streets Lyndale in June 2022.

The county plans to continue engagement through winter 2022/2023 on design for the permanent improvements. (Project website: hennepin.us/lyndale-avenue-safety)

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

Layout includes proposed geometrics and existing and proposed right-of-way boundaries. A basic layout should include a base map (north arrow; scale; legend; city and/or county limits; existing ROW, labeled; existing signals;* and bridge numbers*) and design data (proposed alignments; bike and/or roadway lane widths; shoulder width;* proposed signals;* and proposed ROW). An aerial photograph with a line showing the projects termini does not suffice and will be awarded zero points. *If applicable*

Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties/MnDOT. If a MnDOT trunk highway is impacted, approval by MnDOT must have occurred to receive full points. A PDF of the layout must be attached along with letters from each jurisdiction to receive points.

100%

A layout does not apply (signal replacement/signal timing, stand-alone streetscaping, minor intersection improvements). Applicants that are not certain whether a layout is required should contact Colleen Brown at MnDOT Metro State Aid colleen.brown@state.mn.us.

100%

For projects where MnDOT trunk highways are impacted and a MnDOT Staff Approved layout is required. Layout approved by the applicant and all impacted local jurisdictions (i.e., cities/counties), and layout review and approval by MnDOT is pending. A PDF of the layout must be attached along with letters from each jurisdiction to receive points.

75%

Layout completed but not approved by all jurisdictions. A PDF of the layout must be attached to receive points. Yes

50%

Layout has been started but is not complete. A PDF of the layout must be attached to receive points.

25%

Layout has not been started

0%

Attach Layout 1649258563261_Attachment 05 - Potential Concept.pdf

Please upload attachment in PDF form.

Additional Attachments

Please upload attachment in PDF form.

3.Review of Section 106 Historic Resources (15 Percent of Points)

No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge Yes

100%

There are historical/archeological properties present but determination of no historic properties affected is anticipated.

100%

Historic/archeological property impacted; determination of no adverse effect anticipated

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

Unsure if there are any historic/archaeological properties in the project area.

0%

Project is located on an identified historic bridge

4.Right-of-Way (25 Percent of Points)

Right-of-way, permanent or temporary easements, and MnDOT agreement/limited-use permit either not required or all have been acquired

100%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - plat, legal descriptions, or official map complete	
50%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified	Yes
25%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified	
0%	

5.Railroad Involvement (15 Percent of Points)

No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable)	Yes
100%	
Signature Page	
Please upload attachment in PDF form.	
Railroad Right-of-Way Agreement required; negotiations have begun	
50%	
Railroad Right-of-Way Agreement required; negotiations have not begun.	
0%	

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$13,550,000.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$13,550,000.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
Attachment 00 - List of Attachments.pdf	Attachment 00 - List of Attachments	77 KB
Attachment 01 - Project Narrative.pdf	Attachment 01 - Project Narrative	188 KB
Attachment 02 - Project Location Map.pdf	Attachment 02 - Project Location Map	300 KB
Attachment 03 - Existing Roadway Condition Photos.pdf	Attachment 03 - Existing Roadway Condition Photos	1.4 MB
Attachment 04 - Potential Typical Section.pdf	Attachment 04 - Potential Typical Section	220 KB
Attachment 05 - Potential Concept.pdf	Attachment 05 - Potential Concept	5.7 MB
Attachment 06 - Hennepin County 2022-2026 Transportation CIP.pdf	Attachment 06 - Hennepin County 2022-2026 Transportation CIP	228 KB
Attachment 07 - Hennepin County Board Resolution 22-0109.pdf	Attachment 07 - Hennepin County Board Resolution 22-0109	439 KB
Attachment 08 - Community Engagement Materials.pdf	Attachment 08 - Community Engagement Materials	1.8 MB
Attachment 09 - Affordable Housing Access Map and Detail Summary.pdf	Attachment 09 - Affordable Housing Access Map and Detail Summary	1.1 MB
Attachment 10 - Socio-Economic Equity Map.pdf	Attachment 10 - Socio-Economic Equity Map	1.2 MB
Attachment 11 - Whittier Elementary SRTS Plan.pdf	Attachment 11 - Whittier Elementary SRTS Plan	653 KB
Attachment 12 - Streetlight HCAADT Report.pdf	Attachment 12 - Streetlight HCAADT Report	142 KB
Attachment 13 - Pedestrian Street Lighting Corridor Map.pdf	Attachment 13 - Pedestrian Street Lighting Corridor Map	682 KB
Attachment 14 - Crash Map and Detail Listing.pdf	Attachment 14 - Crash Map and Detail Listing	558 KB
Attachment 15 - Crash Modification Factors.pdf	Attachment 15 - Crash Modification Factors	1.4 MB
Attachment 16 - Multimodal Connections Map.pdf	Attachment 16 - Multimodal Connections Map	338 KB
Attachment 17 - City of Minneapolis Letter of Support.pdf	Attachment 17 - City of Minneapolis Letter of Support	277 KB

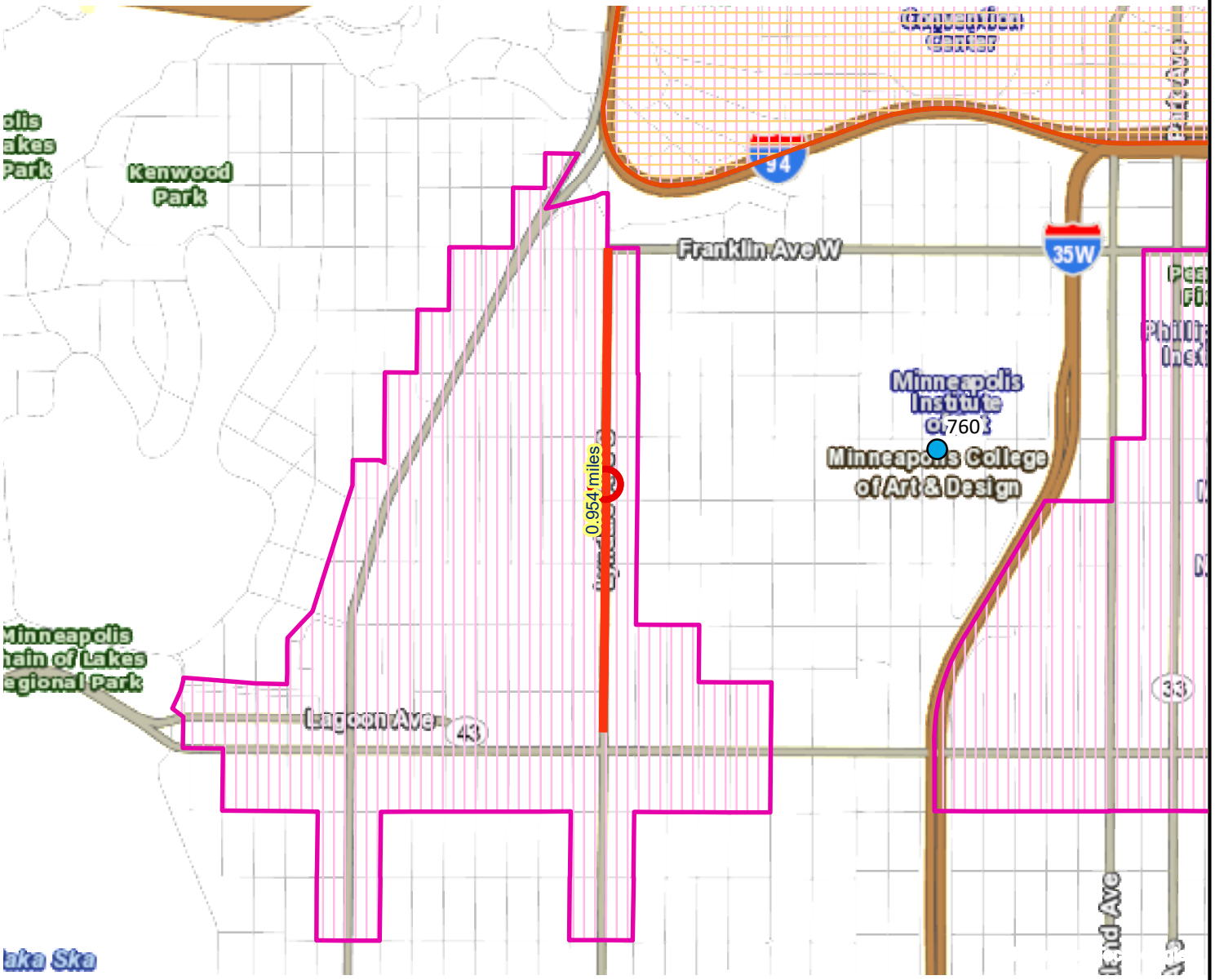
Regional Economy

Roadway Reconstruction/Modernization Project: CSAH 22 (Lyndale Ave) Reconstruction Project | Map ID: 164683053

Results

WITHIN ONE MI of project:
Postsecondary Students: 760

Totals by City:
Minneapolis
Population: 62079
Employment: 29812
Mfg and Dist Employment: 1090



Project Points
Postsecondary Education Centers
Job Concentration Centers
Project
Manfacturing/Distribution Centers

0 0.175 0.35 0.7 1.05 1.4 Miles

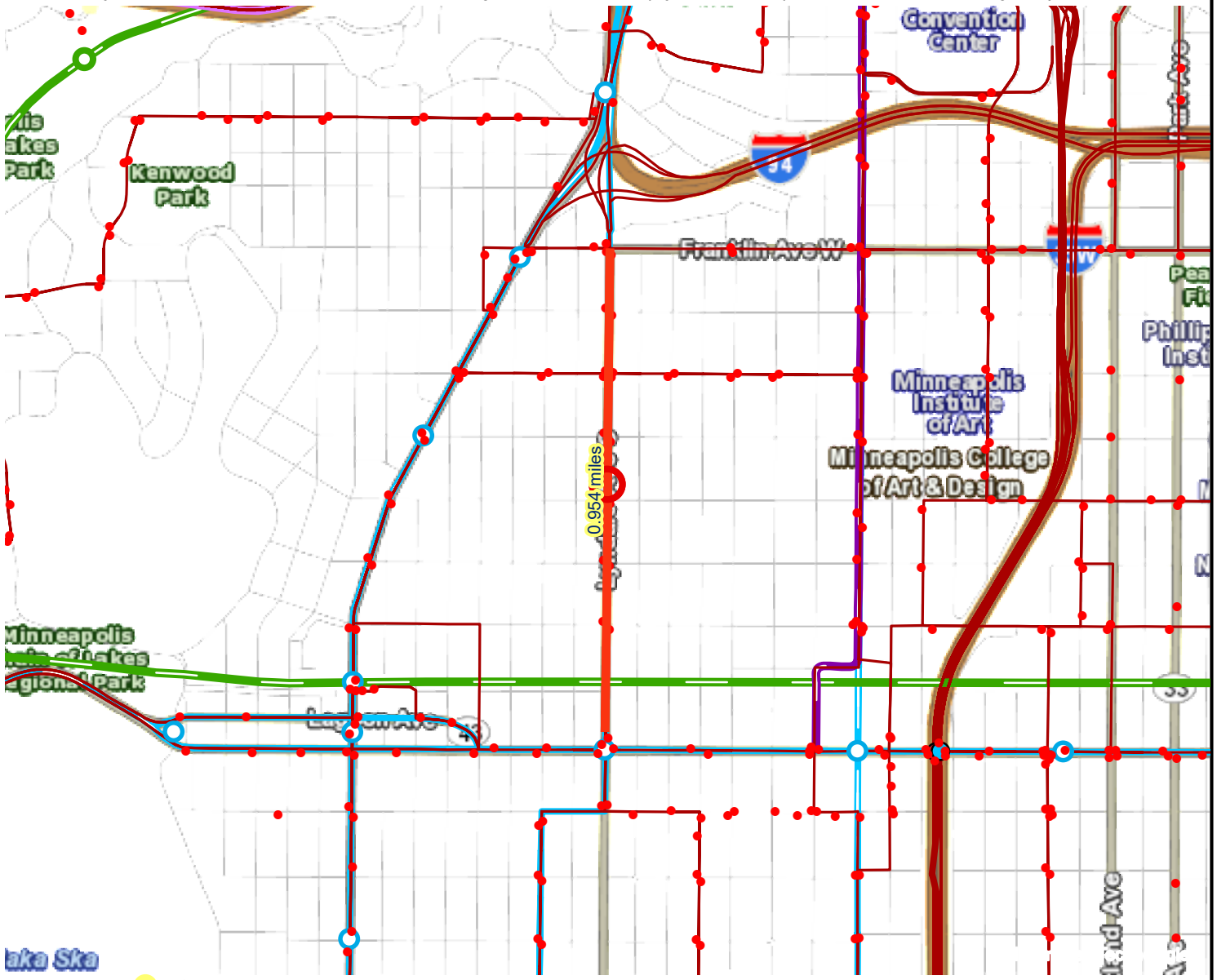
Created: 3/9/2022
LandscapeRSA5

For complete disclaimer of accuracy, please visit
http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx

METROPOLITAN COUNCIL

Transit Connections

Roadway Reconstruction/Modernization Project: CSAH 22 (Lyndale Ave) Reconstruction Project | Map ID: 16468305



Results

Transit with a Direct Connection to project:
113 114 17 2 21 4
*Johnson/Lyndale
*B Line
*Midtown

**indicates Planned Alignments*

Transit Market areas: 1

Project Points
Project
Project Area
Active Stop
Arterial Bus Rapid Transit

Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Arterial Bus Rapid Transit

Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Transit Routes

Arterial Bus Rapid Transit
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Modern Streetcar

Undetermined
Arterial Bus Rapid Transit
Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit

Light Rail
Modern Streetcar
Undetermined

0 0.175 0.35 0.7 1.05 1.4 Miles

Created: 3/9/2022
LandscapeRSA3

METROPOLITAN COUNCIL

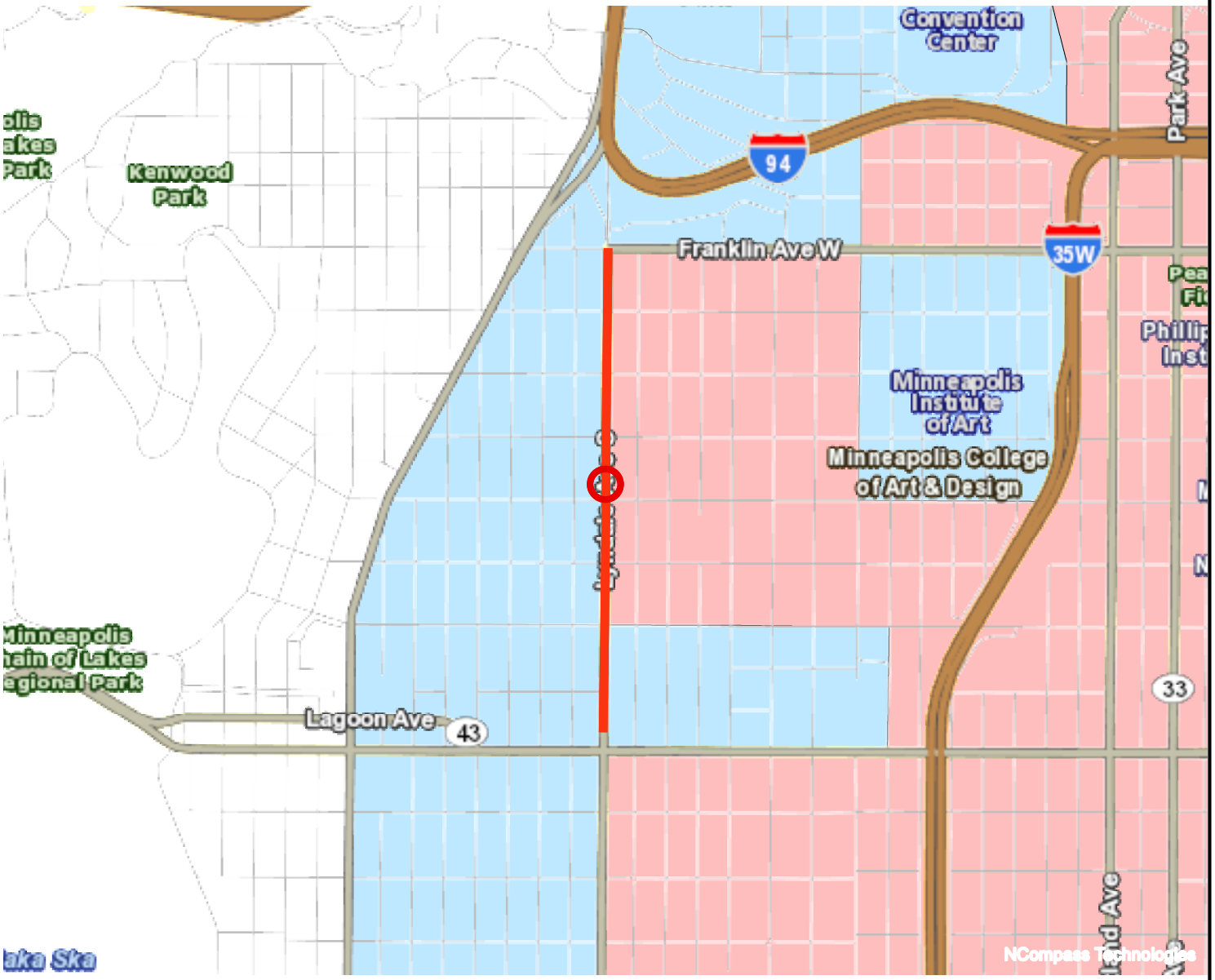
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: CSAH 22 (Lyndale Ave) Reconstruction Project | Map ID: 1646830537262

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 4083

Project located IN an Area of Concentrated Poverty.



Points
Lines
Area of Concentrated Poverty
Regional Environmental Justice Area

0 0.175 0.35 0.7 1.05 1.4 Miles

Created: 3/9/2022
LandscapeRSA2

For complete disclaimer of accuracy, please visit http://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL

CSAH 22 (Lyndale Ave) Reconstruction Project

Synchro Report – Congestion Reduction

Existing conditions (PM Peak)

Lyndale Regional Solicitation 04/03/2022
Existing PM

473: Lyndale Av S & 28th St W

Direction	All
Future Volume (vph)	2141
Total Delay / Veh (s/v)	27
CO Emissions (kg)	2.72
NOx Emissions (kg)	0.53
VOC Emissions (kg)	0.63

Proposed conditions (PM Peak)

Lyndale Regional Solicitation 04/03/2022
Future PM

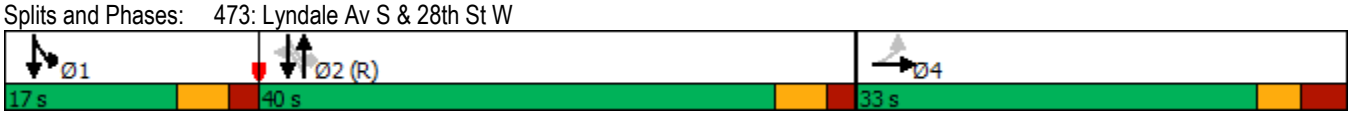
473: Lyndale Av S & 28th St W

Direction	All
Future Volume (vph)	2141
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.60
NOx Emissions (kg)	0.51
VOC Emissions (kg)	0.60

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	241	627	95	162	785
Future Volume (vph)	241	627	95	162	785
Turn Type	NA	NA	Perm	D.P+P	NA
Protected Phases	4	2		1	1 2
Permitted Phases			2	2	
Detector Phase	4	2	2	1	1 2
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	7.0	
Minimum Split (s)	33.0	26.0	26.0	14.0	
Total Split (s)	33.0	40.0	40.0	17.0	
Total Split (%)	36.7%	44.4%	44.4%	18.9%	
Yellow Time (s)	3.0	3.5	3.5	3.5	
All-Red Time (s)	3.2	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	5.5	5.5	5.5	
Lead/Lag		Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	
Act Effct Green (s)	16.1	36.1	36.1	56.7	62.2
Actuated g/C Ratio	0.18	0.40	0.40	0.63	0.69
v/c Ratio	0.82	0.91	0.15	0.36	0.66
Control Delay	45.6	38.1	3.7	12.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	38.1	3.7	12.9	12.0
LOS	D	D	A	B	B
Approach Delay	45.6	33.6			12.1
Approach LOS	D	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 473: Lyndale Av S & 28th St W



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	241	627	162	785
Future Volume (vph)	241	627	162	785
Turn Type	NA	NA	pm+pt	NA
Protected Phases	4	2	1	6
Permitted Phases			6	
Detector Phase	4	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	7.0	7.0
Minimum Split (s)	33.0	26.0	14.0	14.0
Total Split (s)	33.0	43.0	14.0	57.0
Total Split (%)	36.7%	47.8%	15.6%	63.3%
Yellow Time (s)	3.0	3.5	3.5	3.5
All-Red Time (s)	3.2	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	5.5	5.5	5.5
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	C-Max	None	None
Act Effct Green (s)	16.1	46.6	62.2	62.2
Actuated g/C Ratio	0.18	0.52	0.69	0.69
v/c Ratio	0.82	0.83	0.52	0.66
Control Delay	45.6	23.8	12.5	12.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	45.6	23.8	12.5	12.0
LOS	D	C	B	B
Approach Delay	45.6	23.8		12.1
Approach LOS	D	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 473: Lyndale Av S & 28th St W

CSAH 22 (Lyndale Ave) Reconstruction Project

Synchro Report – Emissions

Existing conditions (PM Peak)

Lyndale Regional Solicitation 04/03/2022
Existing PM

473: Lyndale Av S & 28th St W

Direction	All
Future Volume (vph)	2141
Total Delay / Veh (s/v)	27
CO Emissions (kg)	2.72
NOx Emissions (kg)	0.53
VOC Emissions (kg)	0.63

Proposed conditions (PM Peak)

Lyndale Regional Solicitation 04/03/2022
Future PM

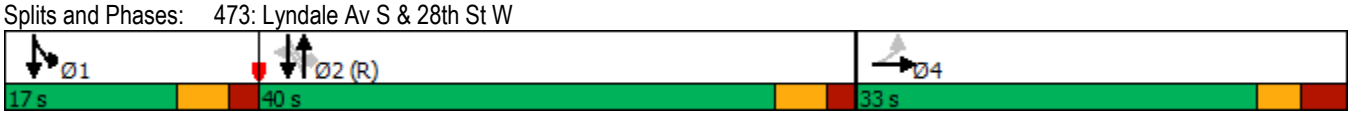
473: Lyndale Av S & 28th St W

Direction	All
Future Volume (vph)	2141
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.60
NOx Emissions (kg)	0.51
VOC Emissions (kg)	0.60

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	241	627	95	162	785
Future Volume (vph)	241	627	95	162	785
Turn Type	NA	NA	Perm	D.P+P	NA
Protected Phases	4	2		1	1 2
Permitted Phases			2	2	
Detector Phase	4	2	2	1	1 2
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	7.0	
Minimum Split (s)	33.0	26.0	26.0	14.0	
Total Split (s)	33.0	40.0	40.0	17.0	
Total Split (%)	36.7%	44.4%	44.4%	18.9%	
Yellow Time (s)	3.0	3.5	3.5	3.5	
All-Red Time (s)	3.2	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	5.5	5.5	5.5	
Lead/Lag		Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	
Act Effct Green (s)	16.1	36.1	36.1	56.7	62.2
Actuated g/C Ratio	0.18	0.40	0.40	0.63	0.69
v/c Ratio	0.82	0.91	0.15	0.36	0.66
Control Delay	45.6	38.1	3.7	12.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	38.1	3.7	12.9	12.0
LOS	D	D	A	B	B
Approach Delay	45.6	33.6			12.1
Approach LOS	D	C			B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 473: Lyndale Av S & 28th St W



Lane Group	EBT	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	241	627	162	785
Future Volume (vph)	241	627	162	785
Turn Type	NA	NA	pm+pt	NA
Protected Phases	4	2	1	6
Permitted Phases			6	
Detector Phase	4	2	1	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	7.0	7.0
Minimum Split (s)	33.0	26.0	14.0	14.0
Total Split (s)	33.0	43.0	14.0	57.0
Total Split (%)	36.7%	47.8%	15.6%	63.3%
Yellow Time (s)	3.0	3.5	3.5	3.5
All-Red Time (s)	3.2	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.2	5.5	5.5	5.5
Lead/Lag		Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	
Recall Mode	None	C-Max	None	None
Act Effct Green (s)	16.1	46.6	62.2	62.2
Actuated g/C Ratio	0.18	0.52	0.69	0.69
v/c Ratio	0.82	0.83	0.52	0.66
Control Delay	45.6	23.8	12.5	12.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	45.6	23.8	12.5	12.0
LOS	D	C	B	B
Approach Delay	45.6	23.8		12.1
Approach LOS	D	C		B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of 1st Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 23.4	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 473: Lyndale Av S & 28th St W

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	3.55	**End RP**	3.71	**Miles**	0.16
Location	From 300' North of CSAH 3 (Lake Street) to 28th Street				

B. Project Description

Proposed Work	CSAH 22: Reduce on-street parking availability and resurface pavement CSAH 22: Install raised median		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	No CMF: Reduce on-street parking availability (10% reduction)
0.90	**Serious Injury (A) Crashes**		CMF 09298: Resurface pavement (9.9% reduction)
	Moderate Injury (B) Crashes	**Crash Type**	No CMF: Crashes involving parked vehicles
0.90	**Possible Injury (C) Crashes**		CMF 09298: SS, RE, LT, & RA
0.91	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	CMF 03034: Install raised median (39% reduction)
	Serious Injury (A) Crashes		
0.61	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 03034: PED
0.61	**Possible Injury (C) Crashes**		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	No CMF: Crashes involving parked VEH CMF 09298: SS, RE, LT, & RA	CMF 03034: PED
K crashes	0	0
A crashes	1	0
B crashes	0	2
C crashes	2	1
PDO crashes	31	0

F. Benefit-Cost Calculation

$2,363,300	**Benefit (present value)**	**B/C Ratio = 0.18**
$13,550,000	**Cost**	

Proposed project expected to reduce 2 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.10	0.03	$25,000
B crashes	0.78	0.26	$59,800
C crashes	0.59	0.20	$23,520
PDO crashes	2.79	0.93	$12,090
			$120,410

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$120,410	$120,410
2027	$121,012	$120,171
2028	$121,617	$119,932
2029	$122,225	$119,694
2030	$122,836	$119,456
2031	$123,451	$119,219
2032	$124,068	$118,982
2033	$124,688	$118,746
2034	$125,312	$118,510
2035	$125,938	$118,275
2036	$126,568	$118,040
2037	$127,201	$117,805
2038	$127,837	$117,571
2039	$128,476	$117,338
2040	$129,118	$117,105
2041	$129,764	$116,872
2042	$130,413	$116,640
2043	$131,065	$116,408
2044	$131,720	$116,177
2045	$132,379	$115,947
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $2,363,300

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	3.71	**End RP**	3.77	**Miles**	0.06
Location	At 28th Street				

B. Project Description

Proposed Work	CSAH 22: Install additional primary signal head and improve intersection lighting CSAH 22: Upgrade signal from pedestal to mast arm and install raised median		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	CMF 01414: Install additional primary signal head (28% reduction)
	Serious Injury (A) Crashes		CMF 08477: Improve interesction lighting (48.1% reduction)
	Moderate Injury (B) Crashes	**Crash Type**	CMF 01414: RE & SS
0.86	**Possible Injury (C) Crashes**		CMF 08477: NIGHTTIME
0.64	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	CMF 01420: Upgrade signal to include mast arms (49% reduction)
	Serious Injury (A) Crashes		FHWA Desktop Reference: Install raised median (56% reduction)
	Moderate Injury (B) Crashes	**Crash Type**	CMF 01420: RA
0.47	**Possible Injury (C) Crashes**		FHWA Desktop Reference: PED
0.51	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	CMF 01414: RE & SS CMF 08477: NIGHTTIME	CMF 01420: RA FHWA Desktop Reference: PED
K crashes	0	0
A crashes	0	0
B crashes	0	0
C crashes	2	3
PDO crashes	8	3

F. Benefit-Cost Calculation

$1,836,037	**Benefit (present value)**	**B/C Ratio = 0.14**
$13,550,000	**Cost**	

Proposed project expected to reduce 3 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	0.00	0.00	$0
C crashes	1.87	0.62	$74,800
PDO crashes	4.33	1.44	$18,746
			$93,546

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$93,546	$93,546
2027	$94,014	$93,360
2028	$94,484	$93,175
2029	$94,956	$92,990
2030	$95,431	$92,805
2031	$95,908	$92,621
2032	$96,388	$92,437
2033	$96,870	$92,253
2034	$97,354	$92,070
2035	$97,841	$91,887
2036	$98,330	$91,705
2037	$98,822	$91,522
2038	$99,316	$91,341
2039	$99,812	$91,159
2040	$100,311	$90,978
2041	$100,813	$90,798
2042	$101,317	$90,617
2043	$101,824	$90,437
2044	$102,333	$90,258
2045	$102,844	$90,078
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $1,836,037

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	3.77	**End RP**	3.96	**Miles**	0.19
Location	From 28th Street to 26th Street				

B. Project Description

Proposed Work	CSAH 22: Reduce on-street parking availability and resurface pavement CSAH 22: Install crub extensions		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	No CMF: Reduce on-street parking availability (10% reduction)
0.90	**Serious Injury (A) Crashes**		CMF 09298: Resurface pavement (9.9% reduction)
0.90	**Moderate Injury (B) Crashes**	**Crash Type**	No CMF: Crashes involving parked vehicles
0.90	**Possible Injury (C) Crashes**		CMF 09298: SS, RE, LT, & RA
0.90	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	CMF 03034: Install curb extensions (22.5% reduction)
	Serious Injury (A) Crashes		
0.78	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 03034: PED
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	No CMF: Crashes involving parked VEH CMF 09298: SS, RE, LT, & RA	CMF 03034: PED
K crashes	0	0
A crashes	1	0
B crashes	1	1
C crashes	7	0
PDO crashes	32	0

F. Benefit-Cost Calculation

$1,793,224	**Benefit (present value)**	**B/C Ratio = 0.14**
$13,550,000	**Cost**	

Proposed project expected to reduce 2 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.10	0.03	$25,000
B crashes	0.33	0.11	$24,917
C crashes	0.69	0.23	$27,720
PDO crashes	3.17	1.06	$13,728
			$91,365

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$91,365	$91,365
2027	$91,821	$91,183
2028	$92,281	$91,002
2029	$92,742	$90,821
2030	$93,206	$90,641
2031	$93,672	$90,461
2032	$94,140	$90,281
2033	$94,611	$90,102
2034	$95,084	$89,923
2035	$95,559	$89,744
2036	$96,037	$89,566
2037	$96,517	$89,388
2038	$97,000	$89,211
2039	$97,485	$89,034
2040	$97,972	$88,857
2041	$98,462	$88,680
2042	$98,954	$88,504
2043	$99,449	$88,328
2044	$99,946	$88,153
2045	$100,446	$87,978
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $1,793,224

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	3.96	**End RP**	4.02	**Miles**	0.06
Location	At 26th Street				

B. Project Description

Proposed Work	CSAH 22: Upgrade LT phasing to prot/perm & install additional signal head CSAH 22: Upgrade signal from pedestal to mast arm and install raised median		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	CMF 04140: Upgrade LT phasing to protected/permitted (42% reduction)
	Serious Injury (A) Crashes		CMF 01414: Install additional primary signal head (28% reduction)
0.42	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 04140: LT
0.86	**Possible Injury (C) Crashes**		CMF 01414: RE & LT
0.77	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

0.44	**Fatal (K) Crashes**	**Reference**	CMF 01420: Upgrade signal to include mast arms (49% reduction)
	Serious Injury (A) Crashes		FHWA Desktop Reference: Install raised median (56% reduction)
0.44	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 01420: RA
0.51	**Possible Injury (C) Crashes**		FHWA Desktop Reference: PED
0.51	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	CMF 04140: LT CMF 01414: RE & LT	CMF 01420: RA FHWA Desktop Reference: PED
K crashes	0	1
A crashes	0	0
B crashes	1	1
C crashes	2	1
PDO crashes	10	4

F. Benefit-Cost Calculation

$8,177,436	**Benefit (present value)**	**B/C Ratio = 0.61**
$13,550,000	**Cost**	

Proposed project expected to reduce 3 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.56	0.19	$280,000
A crashes	0.00	0.00	$0
B crashes	1.14	0.38	$87,553
C crashes	0.77	0.26	$30,800
PDO crashes	4.22	1.41	$18,287
			$416,640

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$416,640	$416,640
2027	$418,723	$415,813
2028	$420,817	$414,987
2029	$422,921	$414,162
2030	$425,036	$413,340
2031	$427,161	$412,519
2032	$429,296	$411,700
2033	$431,443	$410,882
2034	$433,600	$410,066
2035	$435,768	$409,252
2036	$437,947	$408,439
2037	$440,137	$407,627
2038	$442,337	$406,818
2039	$444,549	$406,010
2040	$446,772	$405,204
2041	$449,006	$404,399
2042	$451,251	$403,596
2043	$453,507	$402,794
2044	$455,775	$401,994
2045	$458,053	$401,196
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $8,177,436

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	4.02	**End RP**	4.20	**Miles**	0.18
Location	From 26th Street to 24th Street				

B. Project Description

Proposed Work	CSAH 22: Reduce on-street parking availability and resurface pavement CSAH 22: Install crub extensions		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	No CMF: Reduce on-street parking availability (10% reduction)
0.90	**Serious Injury (A) Crashes**		CMF 09298: Resurface pavement (9.9% reduction)
0.90	**Moderate Injury (B) Crashes**	**Crash Type**	No CMF: Crashes involving parked vehicles
0.90	**Possible Injury (C) Crashes**		CMF 09298: SS, RE, LT, & RA
0.91	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	CMF 03034: Install curb extensions (22.5% reduction)
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	CMF 03034: PED
0.78	**Possible Injury (C) Crashes**		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	No CMF: Crashes involving parked VEH CMF 09298: SS, RE, LT, & RA	CMF 03034: PED
K crashes	0	0
A crashes	1	0
B crashes	6	0
C crashes	11	1
PDO crashes	45	0

F. Benefit-Cost Calculation

$2,774,782	**Benefit (present value)**	**B/C Ratio = 0.21**
$13,550,000	**Cost**	

Proposed project expected to reduce 3 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.10	0.03	$24,750
B crashes	0.59	0.20	$45,540
C crashes	1.31	0.44	$52,560
PDO crashes	4.28	1.43	$18,525
			$141,375

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$141,375	$141,375
2027	$142,082	$141,094
2028	$142,792	$140,814
2029	$143,506	$140,534
2030	$144,224	$140,255
2031	$144,945	$139,977
2032	$145,670	$139,699
2033	$146,398	$139,421
2034	$147,130	$139,144
2035	$147,866	$138,868
2036	$148,605	$138,592
2037	$149,348	$138,317
2038	$150,095	$138,042
2039	$150,845	$137,768
2040	$151,599	$137,494
2041	$152,357	$137,221
2042	$153,119	$136,949
2043	$153,885	$136,677
2044	$154,654	$136,405
2045	$155,427	$136,134
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $2,774,782

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	4.20	**End RP**	4.26	**Miles**	0.06
Location	At 24th Street				

B. Project Description

Proposed Work	CSAH 22: Upgrade LT phasing to prot/perm & install additional signal head CSAH 22: Install curb extensions		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	CMF 04140: Upgrade LT phasing to protected/permitted (42% reduction)
	Serious Injury (A) Crashes		CMF 01414: Install additional primary signal head (28% reduction)
0.71	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 04140: LT
0.61	**Possible Injury (C) Crashes**		CMF 01414: RE, SS, & LT
0.65	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	FHWA Desktop Reference: Install curb extensions (22.5% reduction)
0.78	**Serious Injury (A) Crashes**		
	Moderate Injury (B) Crashes	**Crash Type**	FHWA Desktop Reference: PED
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	CMF 04140: LT CMF 01414: RE, SS, & LT	FHWA Desktop Reference: PED
K crashes	0	0
A crashes	0	1
B crashes	2	0
C crashes	6	0
PDO crashes	18	0

F. Benefit-Cost Calculation

$4,344,813	**Benefit (present value)**	**B/C Ratio = 0.33**
$13,550,000	**Cost**	

Proposed project expected to reduce 4 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.23	0.08	$56,250
B crashes	0.58	0.19	$44,620
C crashes	2.33	0.78	$93,120
PDO crashes	6.32	2.11	$27,378
			$221,368

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$221,368	$221,368
2027	$222,475	$220,928
2028	$223,587	$220,490
2029	$224,705	$220,052
2030	$225,829	$219,615
2031	$226,958	$219,178
2032	$228,093	$218,743
2033	$229,233	$218,309
2034	$230,379	$217,875
2035	$231,531	$217,442
2036	$232,689	$217,011
2037	$233,852	$216,579
2038	$235,021	$216,149
2039	$236,197	$215,720
2040	$237,378	$215,292
2041	$238,564	$214,864
2042	$239,757	$214,437
2043	$240,956	$214,011
2044	$242,161	$213,586
2045	$243,372	$213,162
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $4,344,813

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	4.26	**End RP**	4.39	**Miles**	0.06
Location	At 22nd St				

B. Project Description

Proposed Work	CSAH 22: Upgrade LT phasing to prot/perm & install additional signal head CSAH 22: Upgrade signal from pedestal to mast arm and install curb extensions		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	CMF 04140: Upgrade LT phasing to protected/permitted (42% reduction)
	Serious Injury (A) Crashes		CMF 01414: Install additional primary signal head (28% reduction)
0.72	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 04140: LT
0.72	**Possible Injury (C) Crashes**		CMF 01414: RE, SS, & LT
0.80	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	CMF 01420: Upgrade signal to include mast arms (49% reduction)
0.78	**Serious Injury (A) Crashes**		FHWA Desktop Reference: Install curb extensions (22.5% reduction)
0.64	**Moderate Injury (B) Crashes**	**Crash Type**	CMF 01420: RA & BIKE
0.64	**Possible Injury (C) Crashes**		FHWA Desktop Reference: PED
0.51	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	CMF 04140: LT CMF 01414: RE, SS, & LT	CMF 01420: RA & BIKE FHWA Desktop Reference: PED
K crashes	0	0
A crashes	0	1
B crashes	1	4
C crashes	1	4
PDO crashes	33	5

F. Benefit-Cost Calculation

$5,782,694	**Benefit (present value)**	**B/C Ratio = 0.43**
$13,550,000	**Cost**	

Proposed project expected to reduce 5 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.23	0.08	$56,250
B crashes	1.71	0.57	$131,253
C crashes	1.71	0.57	$68,480
PDO crashes	8.92	2.97	$38,645
			$294,628

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$294,628	$294,628
2027	$296,101	$294,043
2028	$297,582	$293,459
2029	$299,070	$292,876
2030	$300,565	$292,294
2031	$302,068	$291,714
2032	$303,578	$291,134
2033	$305,096	$290,556
2034	$306,621	$289,979
2035	$308,155	$289,403
2036	$309,695	$288,828
2037	$311,244	$288,255
2038	$312,800	$287,682
2039	$314,364	$287,111
2040	$315,936	$286,541
2041	$317,516	$285,972
2042	$319,103	$285,404
2043	$320,699	$284,837
2044	$322,302	$284,271
2045	$323,914	$283,706
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $5,782,694

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 22	**District**	Metro	**County**	Hennepin County
Begin RP	4.45	**End RP**	4.48	**Miles**	0.03
Location	At CSAH 5 (Franklin Ave)				

B. Project Description

Proposed Work	CSAH 22: Improve intersection lighting		
Project Cost*	$13,550,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

	Fatal (K) Crashes	**Reference**	CMF 08477: Improve interesction lighting (48.1% reduction)
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	CMF 08477: NIGHTTIME
0.52	**Possible Injury (C) Crashes**		
0.83	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT Version 2.0			

Crash Severity	CMF 08477: NIGHTTIME	No CMFs
K crashes	0	0
A crashes	0	0
B crashes	3	0
C crashes	6	0
PDO crashes	26	0

F. Benefit-Cost Calculation

$2,635,043	**Benefit (present value)**	**B/C Ratio = 0.20**
$13,550,000	**Cost**	

Proposed project expected to reduce 3 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate	0.7%
Traffic Growth Rate	0.5%
Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	0.00	0.00	$0
C crashes	2.89	0.96	$115,440
PDO crashes	4.34	1.45	$18,815
			$134,255

H. Amortized Benefit

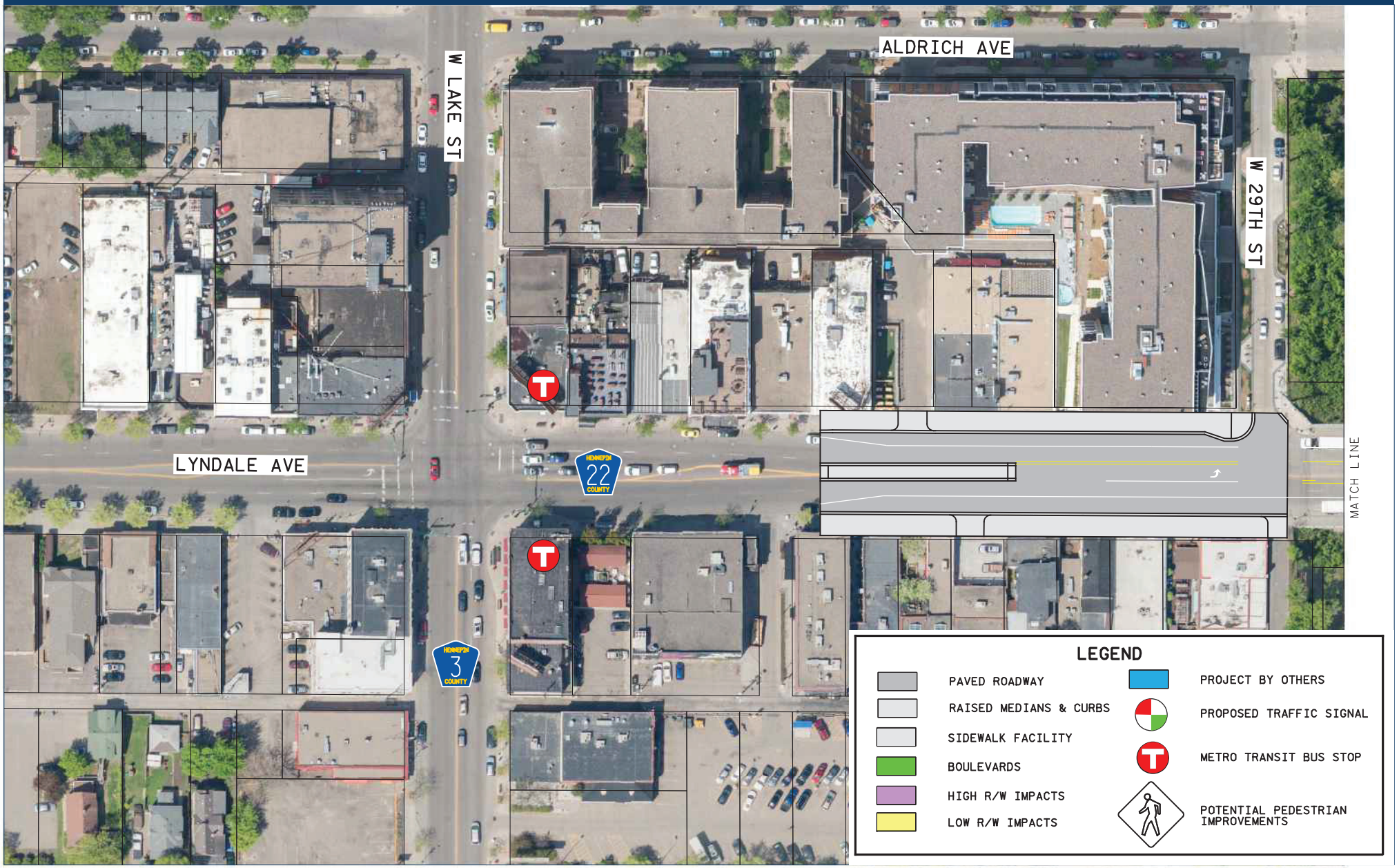
Year	Crash Benefits	Present Value
2026	$134,255	$134,255
2027	$134,927	$133,989
2028	$135,601	$133,723
2029	$136,279	$133,457
2030	$136,961	$133,192
2031	$137,645	$132,927
2032	$138,334	$132,663
2033	$139,025	$132,400
2034	$139,720	$132,137
2035	$140,419	$131,875
2036	$141,121	$131,613
2037	$141,827	$131,351
2038	$142,536	$131,090
2039	$143,249	$130,830
2040	$143,965	$130,570
2041	$144,685	$130,311
2042	$145,408	$130,052
2043	$146,135	$129,794
2044	$146,866	$129,536
2045	$147,600	$129,279
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $2,635,043

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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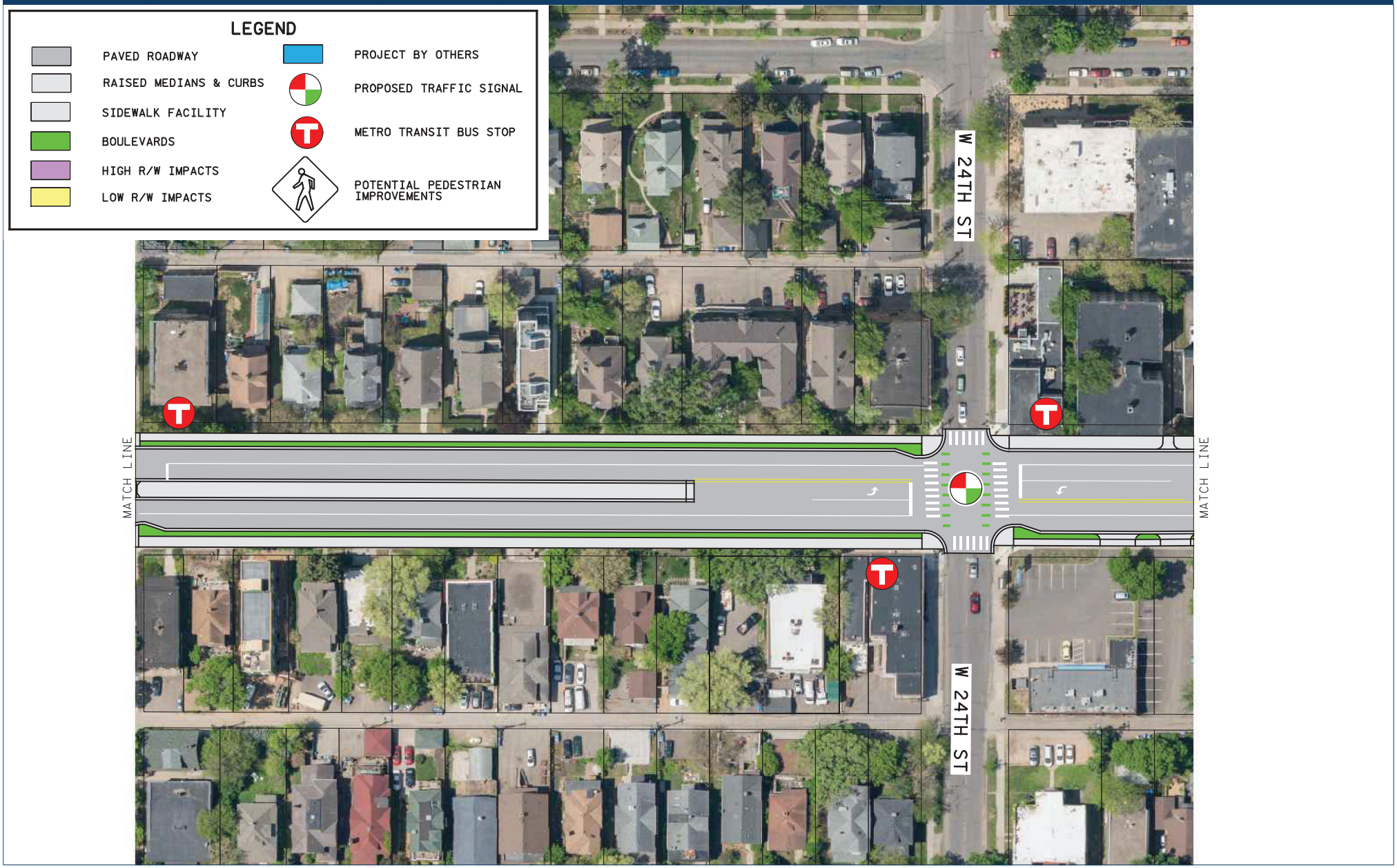
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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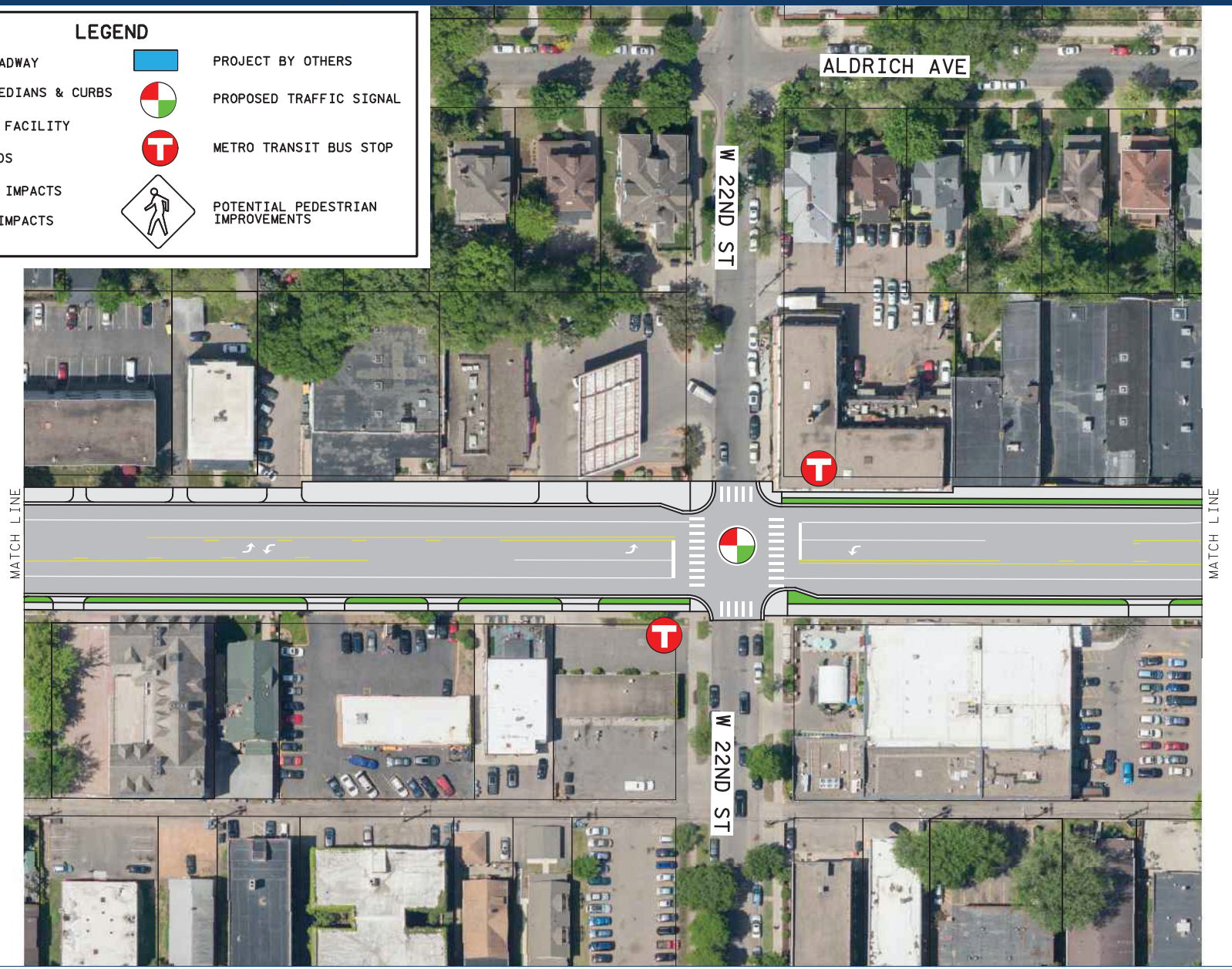
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

LEGEND

- PAVED ROADWAY
- RAISED MEDIANS & CURBS
- SIDEWALK FACILITY
- BOULEVARDS
- HIGH R/W IMPACTS
- LOW R/W IMPACTS
- PROJECT BY OTHERS
- PROPOSED TRAFFIC SIGNAL
- METRO TRANSIT BUS STOP
- POTENTIAL PEDESTRIAN IMPROVEMENTS



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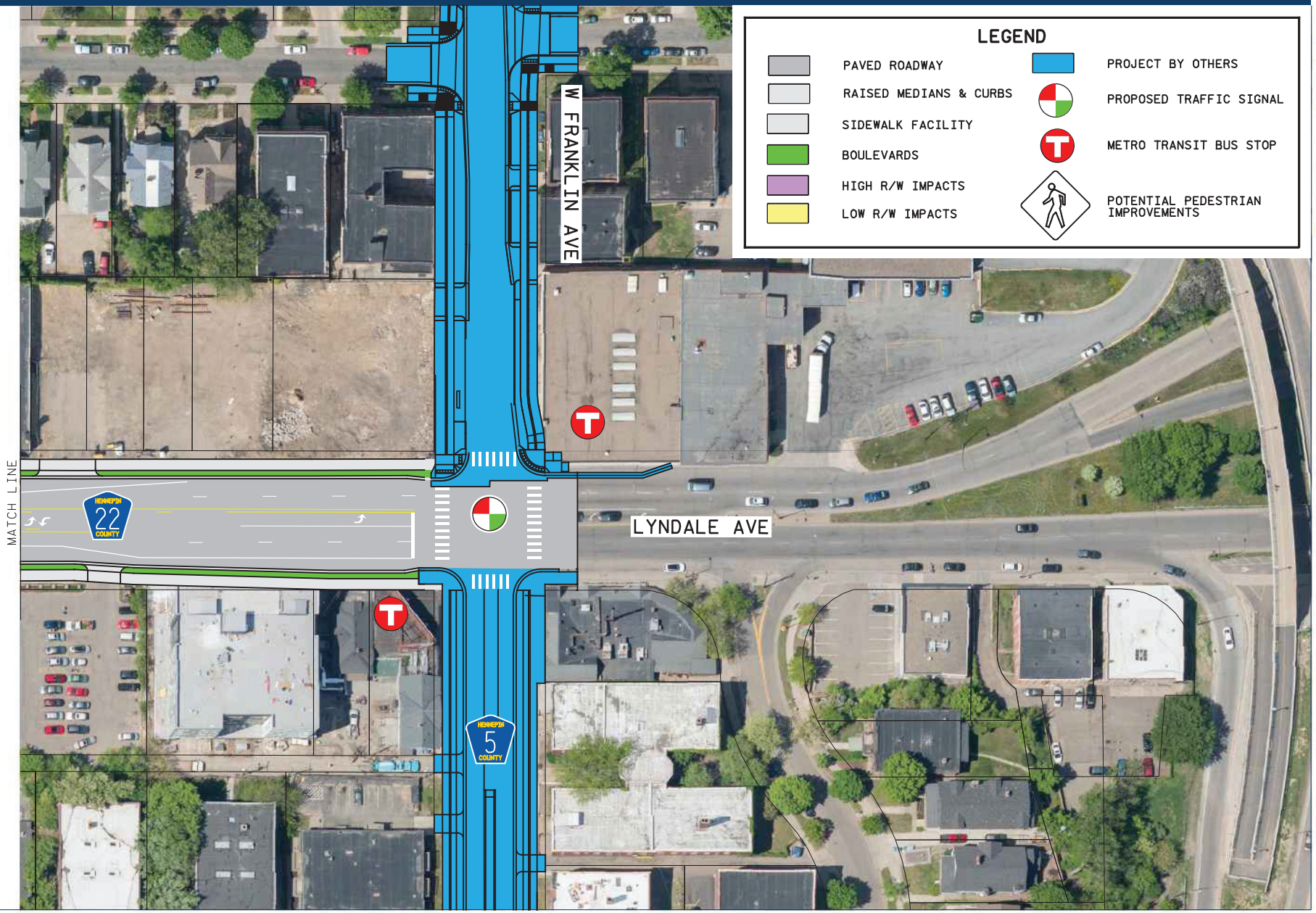
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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CSAH 22 (Lyndale Ave) Reconstruction Project

List of attachments

1. Project Narrative
2. Project Location Map
3. Existing Roadway Condition Photos
4. Potential Typical Section
5. Potential Concept
6. Hennepin County 2022-2026 Transportation CIP
7. Hennepin County Board Resolution 22-0109
8. Community Engagement Materials
9. Affordable Housing Access Map and Detail Summary
10. Socio-Economic Equity Map
11. Whittier Elementary School SRTS Plan
12. StreetLight HCAADT Report
13. Pedestrian Street Lighting Corridor Map
14. Crash Map and Detail Listing
15. Crash Modification Factors
16. Multimodal Connections Map
17. City of Minneapolis Support Letter

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 1 | Project Narrative

HENNEPIN COUNTY
MINNESOTA

Project Name
CSAH 22 (Lyndale Ave) Reconstruction Project

City(ies)
Minneapolis

Commissioner District(s)
3

Capital Project Number
CP 2052300

Project Category
Reconstruction

Scoping Manager
Emily Buell

Scoping Form Revision Dates
4/5/2022

Project Summary

Reconstruct Lyndale Avenue (CSAH 22) from 300 ft north of Lake Street (CSAH 3) to Franklin Avenue (CSAH 5) in the City of Minneapolis.

Roadway History

The existing roadway (last reconstructed in 1934) is nearing the end of its useful life and warrants replacement. Routine maintenance activities (such as overlays and crackseals) are no longer cost effective in preserving assets. The current roadway environment consists of a 4-lane undivided configuration with no turn lanes provided for people driving. This design has resulted in a high number of crashes, specifically left-turn and rear-end related. On-street parking is currently permitted on both sides if the roadway throughout all times of day. Sidewalks exist on both sides of the roadway, separated by a boulevard, that provide relatively good accommodations for people walking along Lyndale Avenue (CSAH 22). However, crossing Lyndale Avenue (CSAH 22) is somewhat difficult for people walking, specifically at non-signalized intersections, as the current design typically results in relatively poor yielding rates by people driving. In addition, many of the intersections include pedestrian ramps that do not meet current ADA design standards, with traffic signals lacking Accessible Pedestrian Signals (APS), posing as challenges for people with limited mobility.

Project Description and Benefits

The proposed project will include new assets, including: pavement, curb, storm water structures, sidewalk, and traffic signals. The new roadway environment will be determined as part of the design process after extensive public engagement and environmental analysis. However, it is anticipated that specific crossing enhancements for people walking (such as curb extensions, raised medians, and crossing beacons) will be considered as this area experiences high pedestrian activity. In addition, the feasibility of dedicated turn lanes at intersections for people driving will be evaluated in an effort to address known crash patterns. This project is Phase 3 (of 3) of capital improvements along the Lyndale Avenue (CSAH 22) corridor in South Minneapolis (initial phases include Capital Projects 2933800 and 2984200).

Project Risks & Uncertainties

Additional coordination needed between the Lyndale Ave (CSAH 22) reconstruction project, the Franklin Ave (CSAH 5) reconstruction project, and the City of Minneapolis' Franklin Ave reconstruction project.

Project Map

Project Timeline

Scoping:	Q3 2021 - Q2 2022
Design:	Q3 2022 - Q4 2024
R/W Acquisition:	Q1 2025 - Q4 2025
Bid Advertisement:	Q1 2026
Construction:	Q2 2026 - Q4 2027

Project Delivery Responsibilities

Preliminary Design:	Consultant
Final Design:	Consultant
Construction Services:	Consultant

Project Budget -	Project Level	
Construction:	$	10,420,000
Cost Estimate Year:		2022
Construction Year:		2026
Annual Inflation Rate:		2.0%
Inflated Construction:	$	11,280,000
Design Services:	$	1,690,000
R/W Acquisition:	$	1,030,000
Other (Utility Burial):	$	-
Construction Services:	$	1,130,000
Contingency:	$	3,130,000
Total Project Budget:	**$**	**18,260,000**

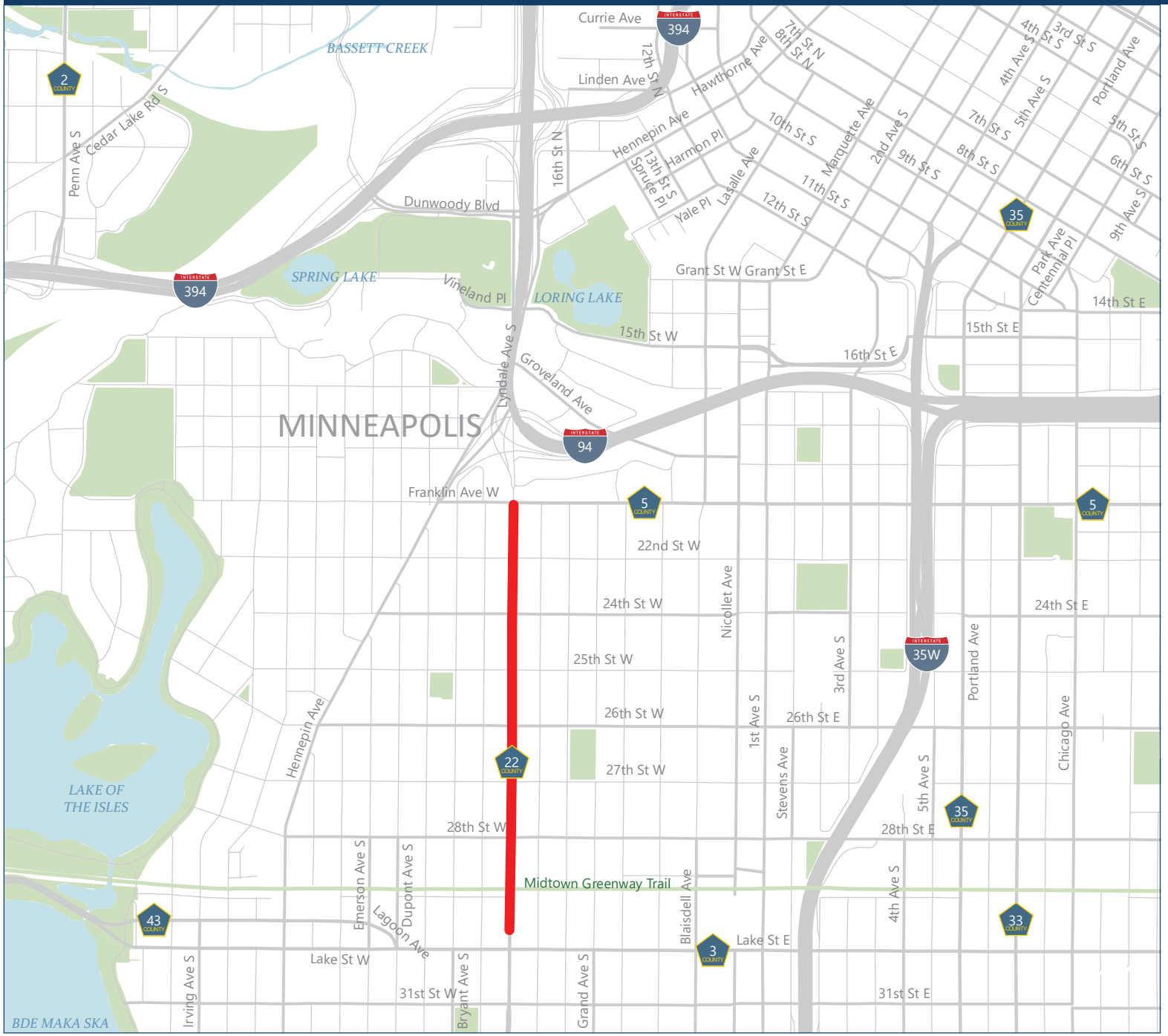
Funding Notes

This project is eligible for funding through the Metropolitan Council's Regional Solicitation per the roadway's designation as an A-Minor Arterial.

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 02 | Project Location Map

HENNEPIN COUNTY
MINNESOTA



Key

Project Location

0 0.225 0.45 Miles

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Published date: 2/2/2022

N

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 03 | Existing Roadway Condition Photos

Overview of the current 4-lane, undivided configuration. High vehicle speeds, a lack of boulevard space and wide crossing lengths serve as barriers to pedestrians, cyclists and those using transit.

The corridor experiences significant drainage issues, leading to pooling at intersections and crosswalks, such as this crossing at 27th Street.

Many of the signals along the corridor are past their useful lifespan, such as this signal at Lyndale and 22nd St. which was originally constructed in 1954.

Several pedestrian ramps throughout the project area lack truncated domes and are aging. Numerous sidewalk obstructions exist within the project area, such as the utility pole shown here.

Hennepin County Public Works
1600 Prairie Drive, Medina, MN 55340
612-596-0300 | hennepin.us

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 03 | Existing Roadway Condition Photos

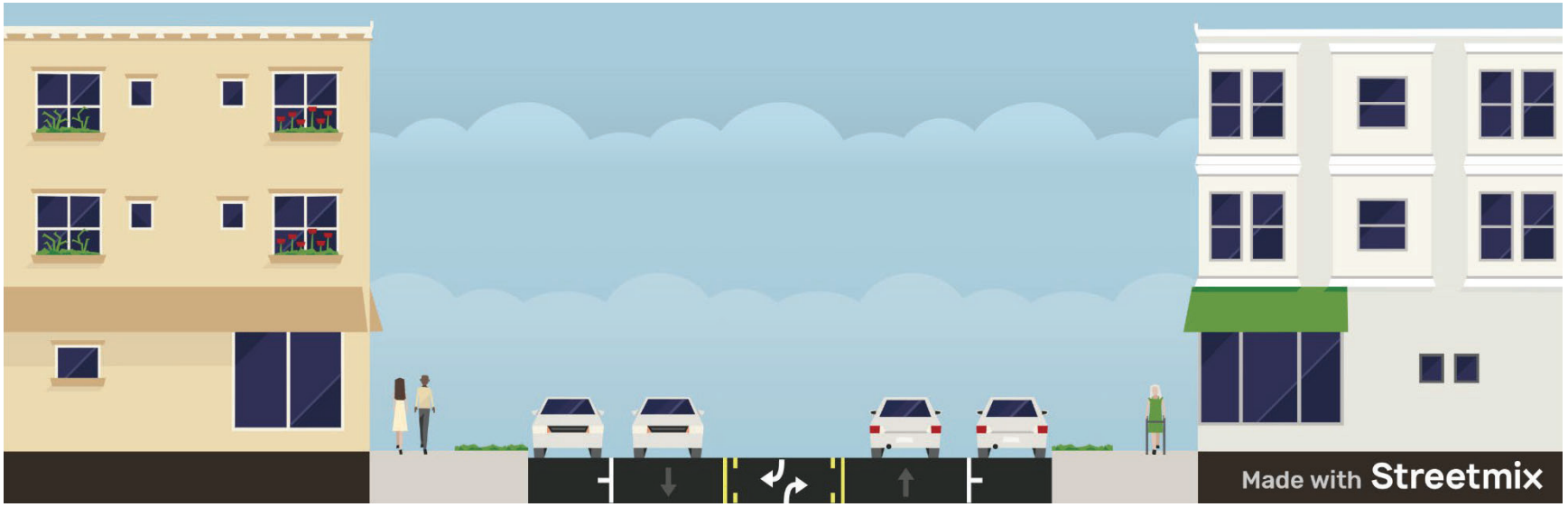
Even where truncated zones are present, ice and snow, as shown above at the 26th St. intersection, pool at crossings due to drainage issues, creating barriers to accessibility.

The Franklin Avenue and Lyndale Avenue intersection is within the top 25 intersections with the highest crash frequencies on the Hennepin County system (as of 2021).

(Left) The intersection of 27th and Lyndale Ave, is a barrier to pedestrians and cyclists due to high speeds and long crossing distances. Throughout the corridor, much of the roadway is experiencing significant cracking and pavement markings are worn.

CSAH 22 (Lyndale Ave) Reconstruction Project

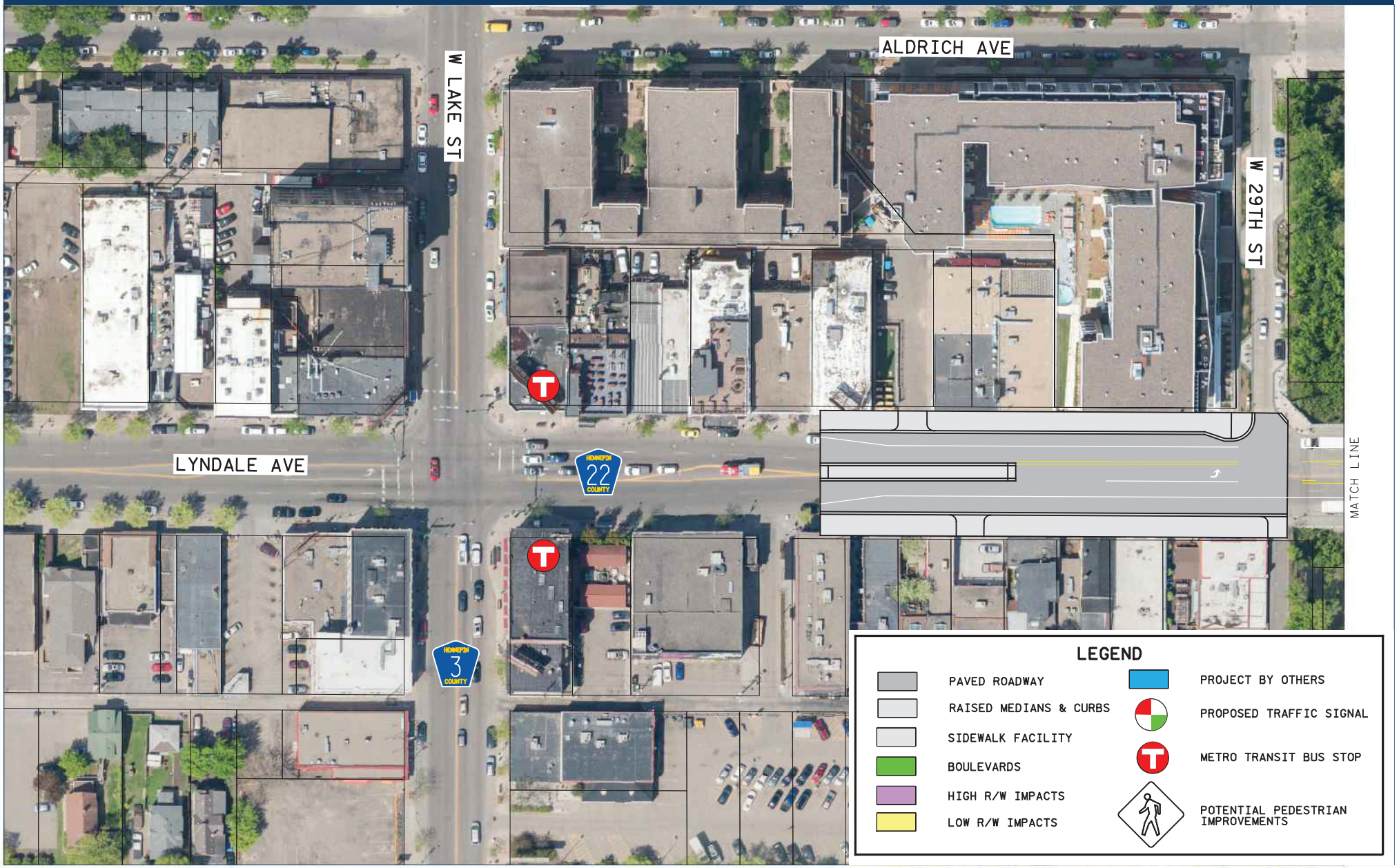
Attachment 04 | Potential Typical Section



CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

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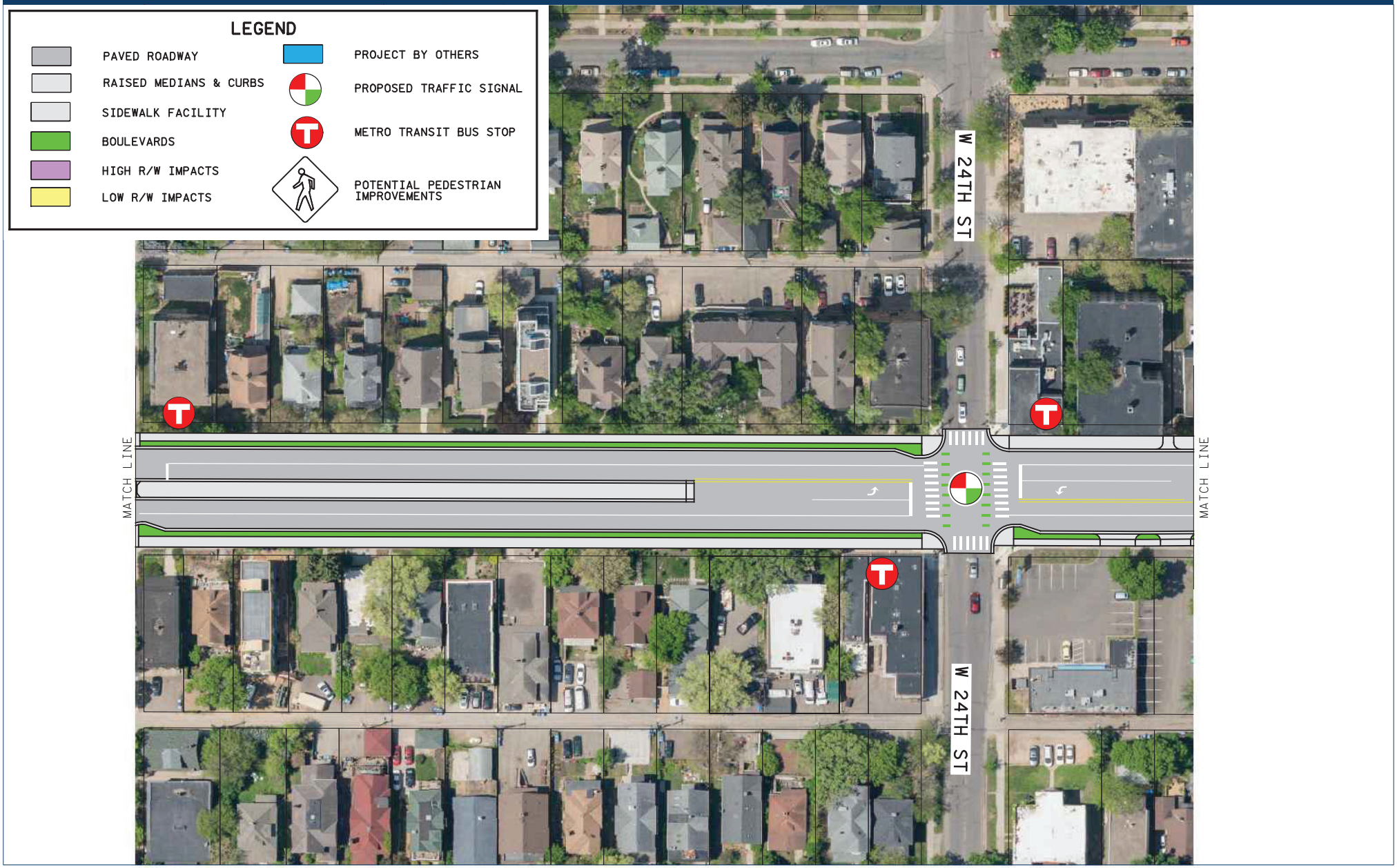
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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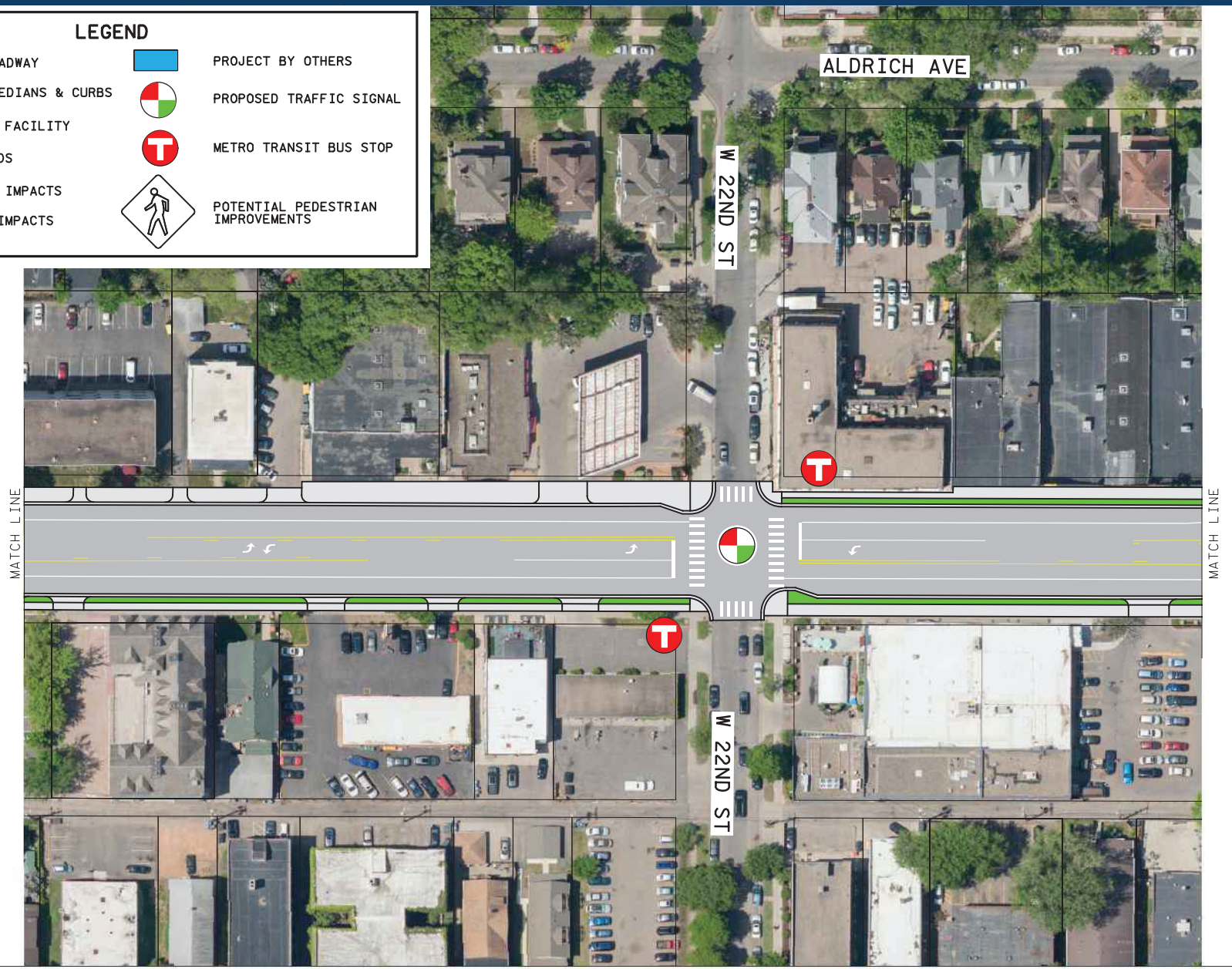
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA

LEGEND

- PAVED ROADWAY
- RAISED MEDIANS & CURBS
- SIDEWALK FACILITY
- BOULEVARDS
- HIGH R/W IMPACTS
- LOW R/W IMPACTS
- PROJECT BY OTHERS
- PROPOSED TRAFFIC SIGNAL
- METRO TRANSIT BUS STOP
- POTENTIAL PEDESTRIAN IMPROVEMENTS



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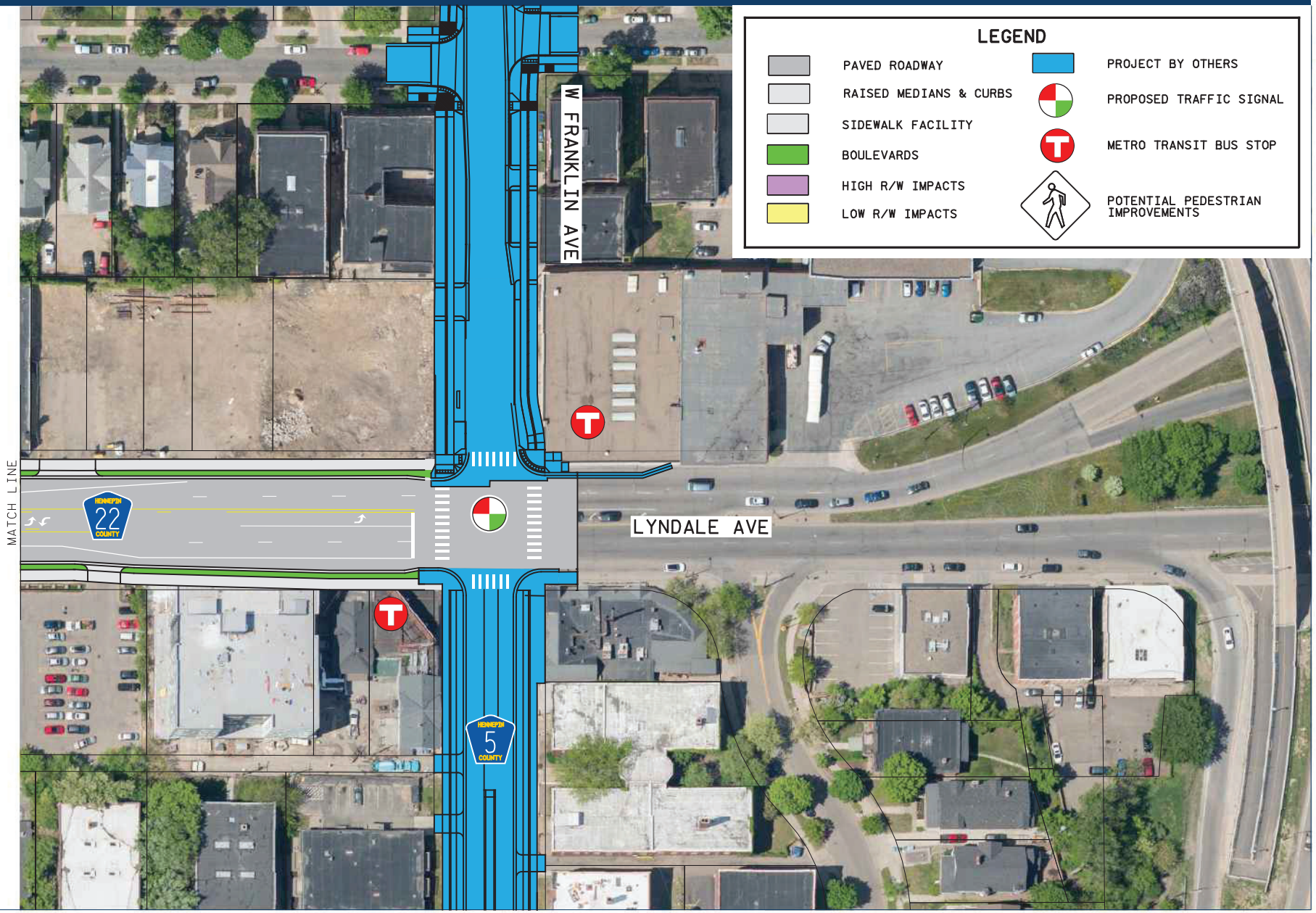
CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 05 | Potential Concept

HENNEPIN COUNTY
MINNESOTA



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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 06 | Hennepin County 2022-2026 Transportation CIP

BOARD APPROVED: 2022 CAPITAL BUDGET AND 2022-2026 CAPITAL IMPROVEMENT PROGRAM

Project Name: 2052300 CSAH 22 - Reconst Lyndale Ave fr HCRRA Bridge to Franklin Ave
Major Program: Public Works
Department: Transportation Roads & Bridges

Funding Start: 2022
Funding Completion: Beyond 2026

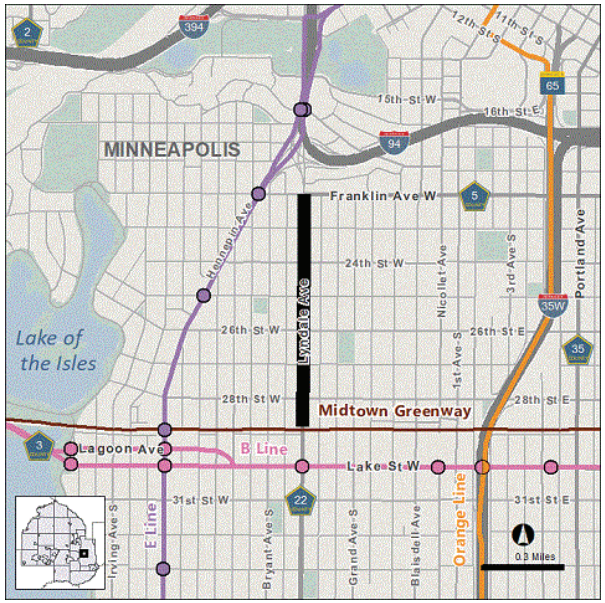
Summary:

Reconstruct Lyndale Avenue (County Road 22) from Bridge #27243 over HCRRA to Franklin Avenue (CSAH 5) in the City of Minneapolis.

Purpose & Description:

The existing roadway (last reconstructed in 1934) is nearing the end of its useful life and warrants replacement. Routine maintenance activities (such as overlays and crackseals) are no longer cost effective in preserving assets. The current roadway environment consists of a 4-lane undivided configuration with no turn lanes provided for people driving. This design has resulted in a high number of crashes, specifically rear-end related. On-street parking is currently permitted on both sides of the roadway throughout all times of day. Sidewalks exist on both sides of the roadway, separated by a boulevard, that provide relatively good accommodations for people walking along Lyndale Avenue (CSAH 22). However, crossing Lyndale Avenue (CSAH 22) can be challenging for people walking, specifically at non-signalized intersections. These uncomfortable crossing experiences are caused by the current roadway design that does not promote traffic calming among people driving. Also, many of the intersections include pedestrian ramps that do not meet current ADA design standards, with traffic signals lacking Accessible Pedestrian Signals (APS), posing challenges for people with limited mobility. At this time, no dedicated facilities for people biking are provided along this section of Lyndale Avenue (CSAH 22). Additionally, the area in the vicinity of Lyndale Avenue (CSAH 22) at 22nd Street is susceptible to flooding during heavy rain events.

The proposed project will include new assets, including: pavement, curb, storm water structures, sidewalk, and traffic signals. The new roadway environment will be determined as part of the design process after extensive public engagement and environmental analysis. However, it is anticipated that specific crossing enhancements for people walking (such as curb extensions, raised medians, and crossing beacons) will be considered as this area generates significant pedestrian activity due to the number of commercial businesses surrounding the project area. In addition, the feasibility of dedicated turn lanes at intersections for people driving will be evaluated in an effort to target known crash patterns. This project is Phase 3 (of 3) of capital improvements along the Lyndale Avenue (CSAH 22) corridor in South Minneapolis (initial phases include Capital Projects 2933800 and 2984200 that were completed in the late 2000s/early 2010s).



REVENUE	Budget To-Date	Act & Enc	Balance	2022 Budget	2023	2024	2025	2026	Beyond 2026	Total
Property Tax				600,000				200,000		800,000
Bonds - GO Roads								1,240,000	800,000	2,040,000
Federal - Other - Roads								7,000,000		7,000,000
Mn/DOT State Aid - Regular				215,000	480,000	845,000	950,000	2,705,000	3,815,000	9,010,000
Minneapolis				55,000	120,000	365,000	470,000	1,035,000	1,155,000	3,200,000
Total				**870,000**	**600,000**	**1,210,000**	**1,420,000**	**12,180,000**	**5,770,000**	**22,050,000**

EXPENSE	Budget To-Date	Act & Enc	Balance	2022 Budget	2023	2024	2025	2026	Beyond 2026	Total
Right of Way						410,000	620,000			1,030,000
Construction				300,000				9,000,000	4,770,000	14,070,000
Consulting				570,000	600,000	600,000	600,000	1,380,000		3,750,000
Contingency						200,000	200,000	1,800,000	1,000,000	3,200,000
Total				**870,000**	**600,000**	**1,210,000**	**1,420,000**	**12,180,000**	**5,770,000**	**22,050,000**

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 06 | Hennepin County 2022-2026 Transportation CIP

BOARD APPROVED: 2022 CAPITAL BUDGET AND 2022-2026 CAPITAL IMPROVEMENT PROGRAM

Project Name: 2052300 CSAH 22 - Reconst Lyndale Ave fr HCRRA Bridge to Franklin Ave
Major Program: Public Works
Department: Transportation Roads & Bridges

Funding Start: 2022
Funding Completion: Beyond 2026

Current Year's CIP Process Summary	Budget To-Date	2022 Budget	2023	2024	2025	2026	Beyond 2026	Total
Department Requested		870,000	600,000	1,210,000	1,420,000	12,180,000	5,770,000	22,050,000
Administrator Proposed		870,000	600,000	1,210,000	1,420,000	12,180,000	5,770,000	22,050,000
CBTF Recommended		870,000	600,000	1,210,000	1,420,000	12,180,000	5,770,000	22,050,000
Board Approved Final		870,000	600,000	1,210,000	1,420,000	12,180,000	5,770,000	22,050,000

Scheduling Milestones (major phases only):

Activity	Anticipated Timeframe
Planning	Q3 2019 - Q4 2021
Design	Q1 2022 - Q4 2025
Bid Advertisement	Q1 2026
Construction	Q2 2026 - Q3 2027
Completion	Q2 2028

Project's Effect on County Priorities and the Operating Budget:

County Priorities: This project will advance county climate action efforts by improving accessibility and enhancing safety for multi-modal transportation facilities, including connections to the Midtown Greenway. This is especially important as the project is located in an area that includes relatively high percentages of no-vehicle households, people with limited mobility, and people with low income.

Operating Budget: Additional planning and design work is required to determine the project's anticipated impact to Transportation Department staff or annual operating costs.

Changes from Prior CIP:

- This is a new project request by Transportation Project Delivery for the 2022-2026 Transportation CIP to reconstruct Lyndale Avenue (CSAH 22) from Bridge #27243 over the HCRRA to Franklin Avenue (CSAH 5) in the City of Minneapolis

Board Resolutions / Supplemental Information:

Last Year's CIP Process Summary	Budget To-Date	2021	2022	2023	2024	2025	Beyond 2025	Total
Department Requested								
Administrator Proposed								
CBTF Recommended								
Board Approved Final								

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 07 | Hennepin County Board Resolution 22-0109

Hennepin County, Board of Commissioners

RESOLUTION 22-0109

2022

The following resolution was moved by Commissioner Angela Conley and seconded by Commissioner Debbie Goettel:

BE IT RESOLVED, that Hennepin County be authorized to apply for federal funding through the Regional Solicitation for the following projects (separated by category) on various County State Aid Highways (CSAHs) throughout the county:

Roadway Reconstruction/Modernization

Projects programmed in the 2022-2026 CIP:

- Franklin Avenue (CSAH 5) from Lyndale Avenue (CSAH 22) to Blaisdell Avenue in Minneapolis
- Dayton River Road (CSAH 12) from Colburn Street to North Diamond Lake Road (CSAH 144) in Dayton and Champlin
- Lyndale Avenue (CSAH 22) from the Hennepin County Regional Railroad Authority (HCRRA) bridge to Franklin Avenue (CSAH 5) in Minneapolis

Projects identified in the county's 10-year work-plan, but not programmed in the 2022-2026 CIP:

- Penn Avenue (CSAH 32) from 75th Street to the Trunk Highway 62 South Ramp in Richfield
- Cedar Avenue (CSAH 152) from Lake Street (CSAH 3) to 24th Street in Minneapolis

Bridge Rehabilitation/Replacement

Project programmed in the 2022-2026 CIP:

- Bass Lake Road (CSAH 10) bridge over the Twin Lakes Inlet in Brooklyn Center and Crystal

Projects identified in the county's 10-year work-plan, but not programmed in the 2022-2026 CIP:

- Pioneer Trail (CSAH 1) bridge over the HCRRA corridor in Eden Prairie
- Eden Prairie Road (CSAH 4) bridge over Twin Cities and Western Railroad in Eden Prairie

Multiuse Trails/Bicycle and Pedestrian Facilities (sidewalks, streetscaping and improved accessibility)

Project partially programmed in the 2022-2026 CIP:

- Lake Street (CSAH 3) from Dupont Avenue to the Mississippi River

Project identified in the county's 10-year work-plan, but not programmed in the 2022-2026 CIP:

- Marshall Street NE (CSAH 23) from Third Avenue NE to Lowry Avenue NE (CSAH 153).

Project not currently identified in the county's 2022-2026 CIP or 10-year work-plan:

- Park Avenue (CSAH 33) and Portland Avenue (CSAH 35) from Lake Street (CSAH 3) to the I-94/I-35W Bridge in Minneapolis

Mobility and Safety

Projects not currently identified in the county's 10-year work-plan or 5-year CIP:

- Rockford Road (CSAH 9) and Northwest Boulevard (CSAH 61) in Plymouth
- Hemlock Lane (CSAH 61) and Elm Creek Boulevard (CSAH 130) in Maple Grove

The question was on the adoption of the resolution and there were 7 YEAS and 0 NAYS, as follows:

County of Hennepin
Board of County Commissioners

YEAS	NAYS	ABSTAIN	ABSENT
Marion Greene			
Debbie Goettel			
Irene Fernando			
Angela Conley			
Jeff Lunde			
Chris LaTondresse			
Kevin Anderson			

RESOLUTION ADOPTED ON **3/22/2022**

ATTEST: M. Rose

Deputy/Clerk to the County Board

Safety Improvements Coming Soon to Lyndale Avenue

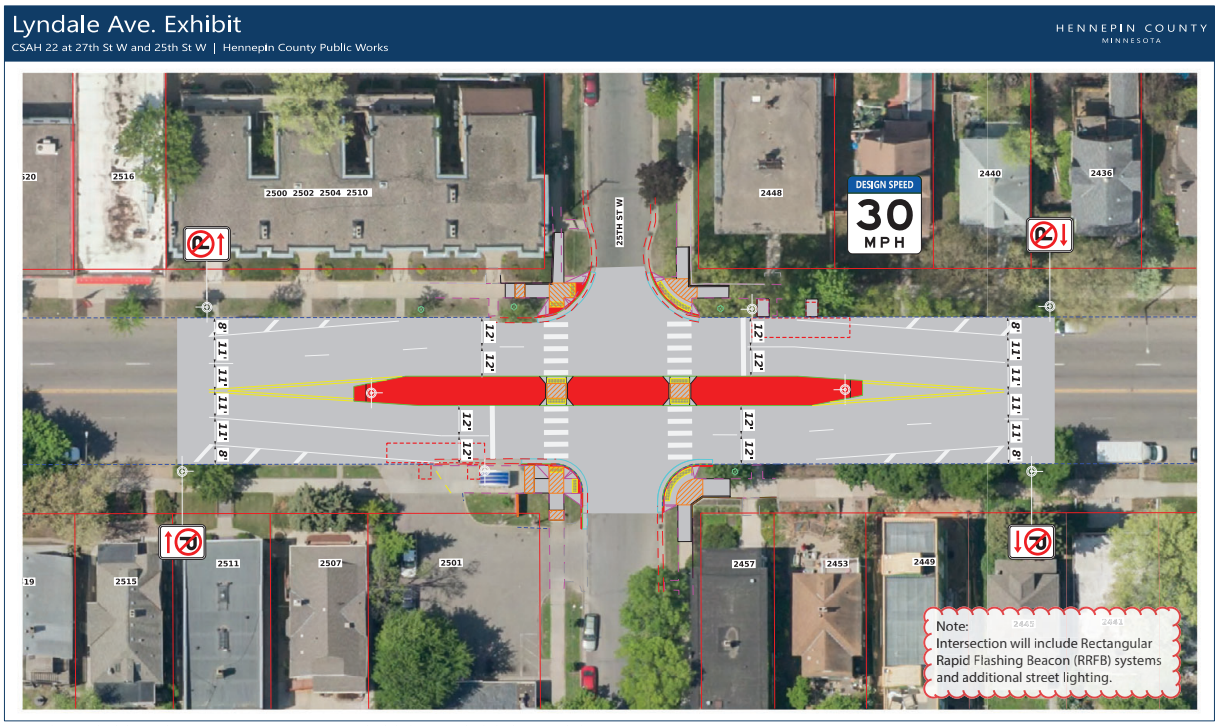
Learn more today!

Intersection Safety Improvements

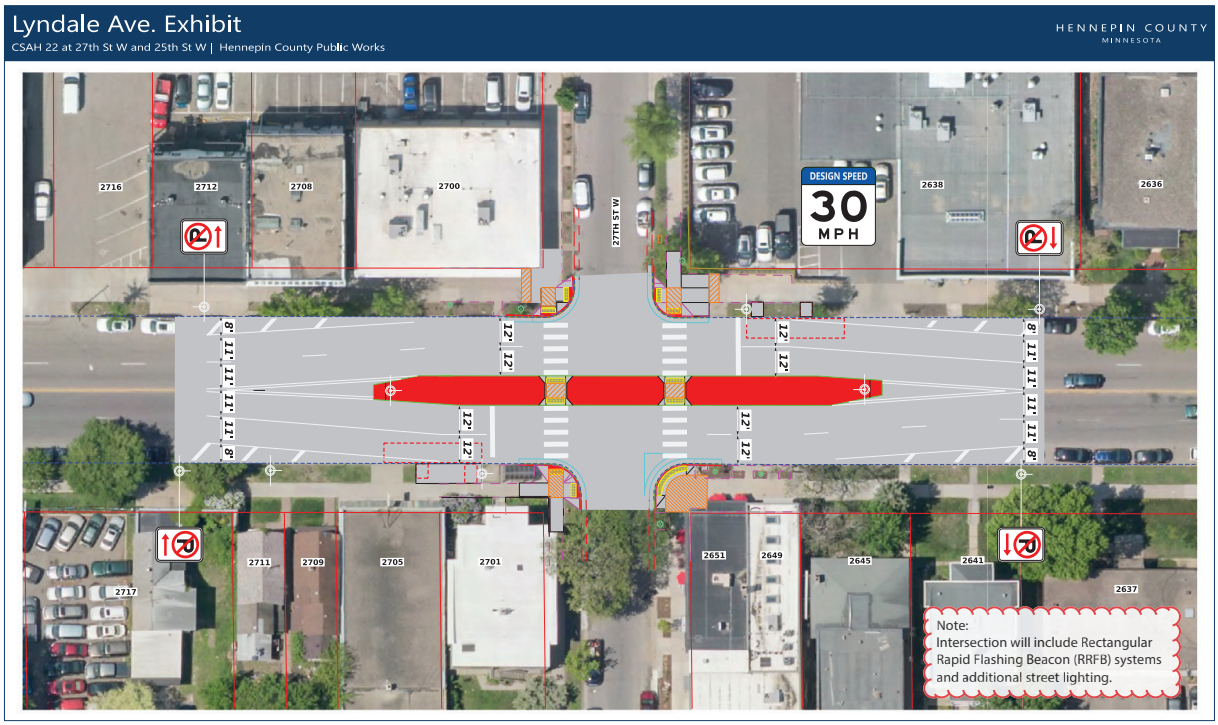
HENNEPIN COUNTY
MINNESOTA

Work anticipated to start mid-October 2021

Intersection improvements at 25th Street intersection



Intersection improvements at 27th Street intersection



What is the Lyndale Avenue 4- to 3-lane pilot project?

HENNEPIN COUNTY
MINNESOTA

Hennepin County, along with the City of Minneapolis and Metro Transit, is coordinating the Lyndale Avenue 4- to 3-lane pilot project.

Lyndale Avenue between Franklin Avenue and 31st Street will change from four driving lanes to three: one travel lane in each direction with center turn lane.

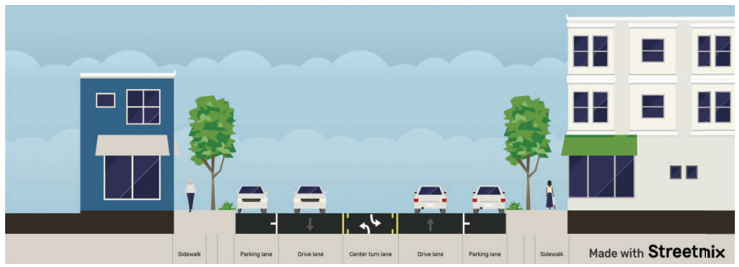
Why are these changes being made?

- Safety improvements for all users are needed on Lyndale Avenue
- Community members have asked about a 3-lane design
- Opportunity to observe the impacts and benefits of a 3-lane design

What does the pilot project entail?

As a pilot project the county will be evaluating impacts to all users and seeking feedback from the community. This will help inform the future vision of this corridor.

3 lane digital concept of Lyndale Avenue at the 28th Street intersection



Pre-pilot design & outreach
- Who uses the road, how and when
- Where are safety issues

Fall 2021 – Spring 2022

Pilot begins
- Change Lyndale Avenue to 3 lane

Summer 2022

Evaluate
- Consider community input and collected data

2022/2023

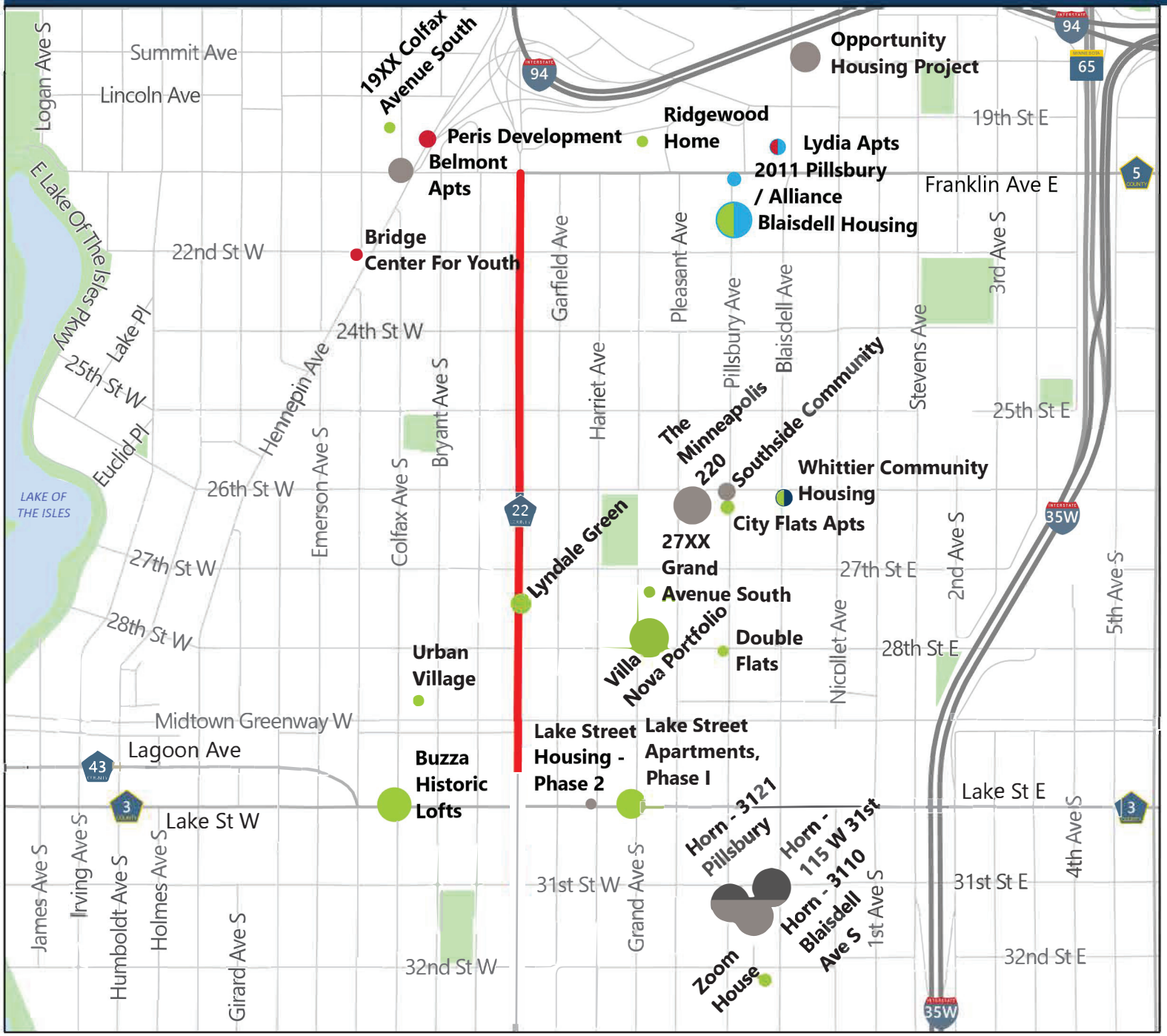
Outcome
- Continued observation and inform future corridor vision
- Potential reconstruction project in 5-7 years

2023 & beyond

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 09 | Affordable Housing Access Map and Detail Summary

HENNEPIN COUNTY
MINNESOTA



Key

- Project Location

Population Served

- Family
- Elderly
- People with Disabilities
- Multiple
- Homeless
- No Information

Affordable Units

- 1-4
- 5-57
- 58-111
- 112- 165

Construction Status

- Existing Affordable Housing
- Under Construction

0 0.1 0.2 Miles

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Published date: 2/16/2022

N

Hennepin

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 9: Affordable Housing Access Map and Detail Summary

Location Name	Total Units	Affordable Units	30% AMI	50% AMI	60% AMI	0 BR	1 BR	2 BR	3 BR	4+ BR
Lyndale Green	63	63	0	14	0	0	33	30	0	0
Bridge Center For Youth	19	18	18	0	0	18	0	0	0	0
City Flats Apts aka: B Flats & Calypso Flats	27	27	27	0	0	0	0	0	27	0
Zoom House	22	22	16	6	0	6	16	0	0	0
Opportunity Housing Project Aka: Lamoreaux	117	116	59	57	0	115	1	0	0	0
Double Flats	11	11	0	11	0	0	1	1	9	0
Blaisdell Housing	151	150	0	68	0	8	113	29	0	0

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 9: Affordable Housing Access Map and Detail Summary

Location Name	Total Units	Affordable Units	30% AMI	50% AMI	60% AMI	0 BR	1 BR	2 BR	3 BR	4+ BR
Urban Village (phase I - Midtown Lofts)	72	12	0	0	8	0	12	0	0	0
Whittier Community Housing	45	45	0	45	0	2	7	26	10	0
2011 Pillsbury / Alliance	27	27	20	7	0	27	0	0	0	0
Horn - 115 W 31st	163	163	163	0	0	0	162	1	0	0
Southside Community	48	48	4	44	0	2	1	33	12	0
Buzza Historic Lofts	137	136	0	0	0	1	100	35	0	0
Ridgewood Home	12	12	0	2	0	12	0	0	0	0

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 9: Affordable Housing Access Map and Detail Summary

Location Name	Total Units	Affordable Units	30% AMI	50% AMI	60% AMI	0 BR	1 BR	2 BR	3 BR	4+ BR
Belmont Apts	87	87	0	0	0	50	26	11	0	0
Lydia Apts	78	40	0	40	0	40	0	0	0	0
Horn - 3110 Blaisdell Ave S	165	165	165	0	0	0	164	1	0	0
Horn - 3121 Pillsbury	163	163	163	0	0	0	162	1	0	0
19XX Colfax Avenue South	12	12	0	0	0		12			
27XX Grand Avenue South	12	12	0	0	0	4	8			
Lake Street Apartments, Phase I	111	111	9	36	0	16	66	29		

CSAH 22 (Lyndale Ave) Reconstruction Project

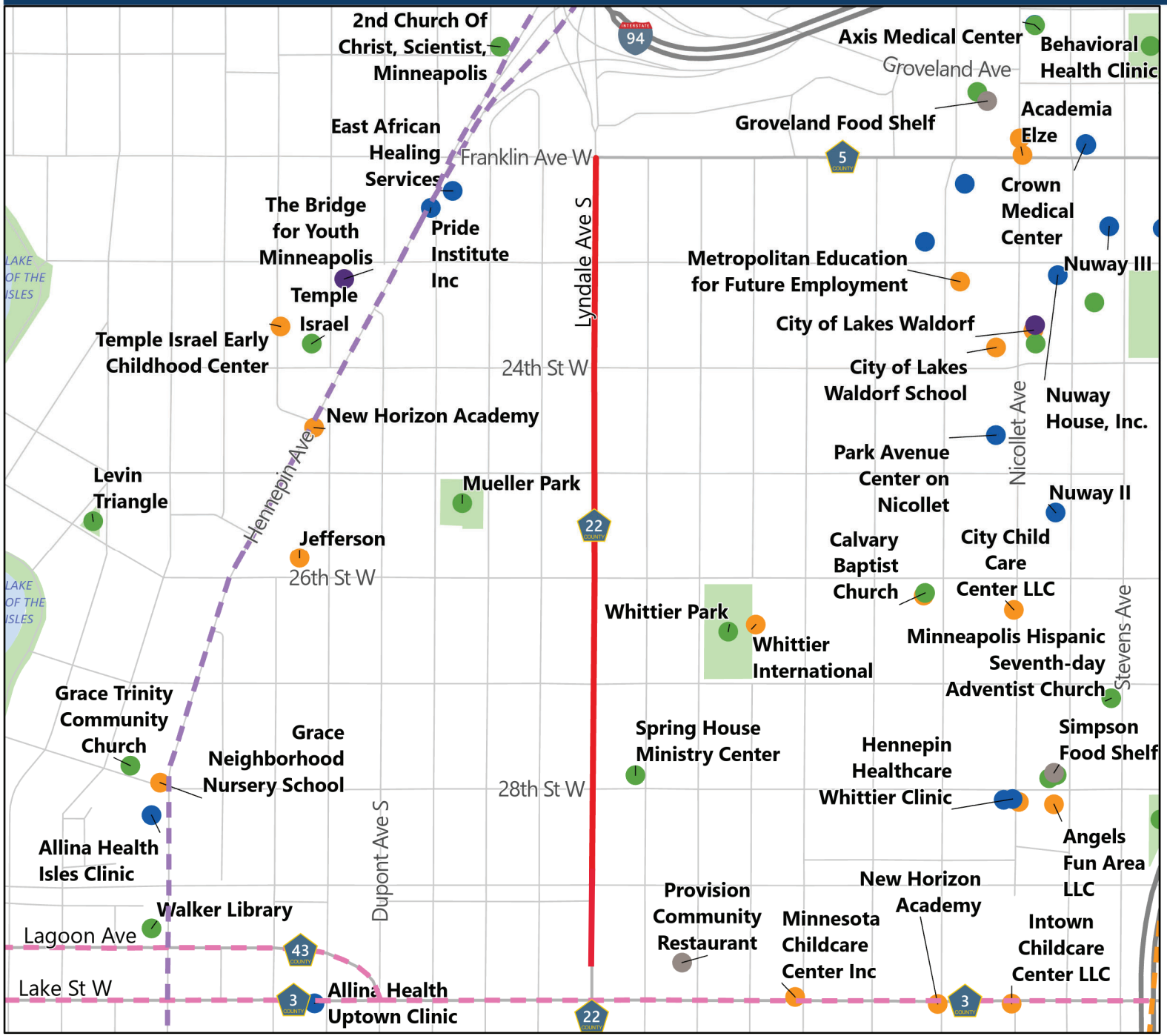
Attachment 9: Affordable Housing Access Map and Detail Summary

Location Name	Total Units	Affordable Units	30% AMI	50% AMI	60% AMI	0 BR	1 BR	2 BR	3 BR	4+ BR
The Minneapolis 220	209	157	0	0	42	80	124	5	0	0
907 Winter Street Ne	20	4	0	0	0	0	1	8	11	0
Villa Nova Portfolio	220	165	0	0	165					
Lake Street Housing - Phase 2	132	10	0	0	0					
Peris Development	45	45	15	9	0	34	15	0	0	0

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 10 | Socio-Economic Equity Map

HENNEPIN COUNTY
MINNESOTA



Key

- Project Location

Resource Category

- Healthcare Facilities
- Schools & Childcare
- Community Facilities
- Homeless Shelters
- Food Shelves

Arterial BRT Services

- Future B Line
- Future E Line

0 0.13 0.25 Miles

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Published date: 3/16/2022

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Hennepin

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 11 | Whittier Elementary School SRTS Plan

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 11 | Whittier Elementary School SRTS Plan

Infrastructure Recommendations

	LOCATION	PROBLEM/ISSUE	POTENTIAL SOLUTION/RECOMMENDATION	ANTICIPATED OUTCOME	LEAD	PRIORITY
A	26th St & Grand Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; unpredictable motor vehicle movements through offset intersection; crossing 26th St not permitted on east side of intersection; crossings do not meet accessibility standards	Install curb extension into Grand Ave to discourage driving southbound into drop off loop; install curb extensions on south side of 26th St; install high visibility crosswalks, install leading pedestrian interval (LPI); install ADA compliant curb ramps where missing; install School Crossing Sign (S1-1) with supplemental sign "Ahead" 400 feet east of Grand Ave. Long term recommendations: reduce the number of vehicle travel lanes on 26th to one; adjust driveway location/width to recreate legal crossing of the east leg of intersection.	Better visibility, more comfortable experience for people walking. Less encroachment on pedestrian space by stopped vehicles, shorter crossing distances. Drivers in the area identify the intersection as a gateway to the school. Long term: fewer number of street crossings if walking from the northeast.	City of Minneapolis and MPRB (owns driveway property)	High
B	27th St & Grand Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; primary gateway intersection to the school not designed to prioritize students walking	Install extension of the sidewalk space on the north side of 27th St from 20 feet west of the ramp exiting the path on campus to the first driveway apron to the east of Grand Ave; install curb extensions on the south side of 27th St; install raised crosswalk on the east crossing of 27th St; install high visibility crosswalks	More space to walk and gather for students, staff, and families at arrival and dismissal. Reduce the number of cars and buses stopping at Grand Ave. Greater separation between vehicles and people; lower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking. Drivers in the area identify the intersection as a gateway to the school.	City of Minneapolis	High
C	28th St & Pleasant Ave	Drivers not anticipating people crossing through this intersection; crossings do not meet accessibility standards; long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; primary gateway intersection to higher density housing to the south	Install activated flashing beacon; install high visibility crosswalks; install advance stop bar; install ADA compliant curb ramps where missing. Long term recommendations: reduce the number of vehicle travel lanes on 28th to one and install curb extensions on the north side of 28th St	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking.	City of Minneapolis	High
D	27th St & Pleasant Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; uncomfortable motor vehicle speeds on 27th St; crossings do not meet accessibility standards; confusion from road users whether it's all-way stop; coordinate with Pleasant Ave improvements planned by the City (see Item V)	Install curb extensions on all four corners; install/maintain high visibility crosswalks; install ADA compliant curb ramps where missing; review warrant for installing all-way stop	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	High
E	27th St & Blaisdell Ave	Drivers not anticipating people crossing through this intersection; crossings do not meet accessibility standards; long crossing distances; coordinate with Blaisdell bike lane updates (anticipated 2019-2022)	Install curb extensions on the east side of Blaisdell Ave; install ADA compliant curb ramps where missing; install activated flashing beacon; install high visibility crosswalks	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	High
F	26th St & Blaisdell Ave	Long crossing distances; uncomfortable motor vehicle volumes and speeds; drivers not anticipating people crossing	Install curb extensions on south side of 26th St and east side of Blaisdell Ave; install high visibility crosswalks; install advance stop bars; install ADA compliant curb ramps where missing. Long term recommendation: reduce the number of vehicle travel lanes on 26th to one.	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking.	City of Minneapolis	High
G	27th St & Nicollet Ave	Drivers not anticipating people crossing through this intersection; long crossing distances; crossings do not meet accessibility standards	Install curb extensions on all four corners; install high visibility crosswalks; install ADA compliant curb ramps where missing	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	Medium
H	27th St & 1st Ave	Drivers not anticipating people crossing through this intersection; crossings do not meet accessibility standards; long crossing distances; coordinate with 1st Ave bike lane updates (anticipated 2019-2022)	Install curb extensions on all four corners; install activated flashing beacon; install high visibility crosswalks; install ADA compliant curb ramps where missing	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	Medium
I	26th St & Lyndale Ave	Long crossing distances; uncomfortable motor vehicle volumes and speeds; multiple turning movements during arrival and dismissal; vehicles parked close to the intersection, decreasing visibility	Install curb extensions; install leading pedestrian interval (LPI); install ADA compliant curb ramps where missing	Better visibility, shorter crossing distance, more comfortable experience for people walking. Less encroachment on pedestrian space by stopped vehicles.	City of Minneapolis & Hennepin County	Medium
J	26th St & Harriet Ave	Drivers not anticipating people crossing through this intersection; crossings do not meet accessibility standards; long crossing distances; vehicles parked close to the crosswalks, decreasing visibility	Install curb extensions on south side of 26th St; install high visibility crosswalk on east crossing of 26th St; install ADA compliant curb ramps where missing. Long term recommendation: reduce the number of vehicle travel lanes on 26th to one.	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking. Drivers in the area identify the intersection as a gateway to the school.	City of Minneapolis	Medium

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 11 | Whittier Elementary School SRTS Plan

Infrastructure Recommendations (continued)

	LOCATION	PROBLEM/ISSUE	POTENTIAL SOLUTION/RECOMMENDATION	ANTICIPATED OUTCOME	LEAD	PRIORITY
K	26th St & Pleasant Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility	Install curb extensions on south side of 26th St; install high visibility crosswalk on west crossing of 26th St. Long term recommendation: reduce the number of vehicle travel lanes on 26th to one.	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking.	City of Minneapolis	Medium
L	26th St & Pillsbury Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; crossings do not meet accessibility standards	Install curb extensions on south side of 26th St; install high visibility crosswalk on west crossing of 26th St; install ADA compliant curb ramps where missing. Long term recommendation: reduce the number of vehicle travel lanes on 26th to one.	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking.	City of Minneapolis	Medium
M	27th St & Lyndale Ave	Long crossing distances; uncomfortable motor vehicle volumes and speeds; multiple turning movements during arrival and dismissal; vehicles parked close to the intersection, decreasing visibility; drivers not anticipating people crossing	Install curb extensions on all four corners; install activated flashing beacon; install high visibility crosswalk on north crossing of Lyndale Ave; install ADA compliant curb ramps where missing	Better visibility, more comfortable experience for people walking.	City of Minneapolis & Hennepin County	Medium
N	27th St & Pillsbury Ave	Inconsistent accessibility compliance; long crossing distances; vehicles parked close to the crosswalks, decreasing visibility	Install curb extensions on all four corners; install high visibility crosswalks; install ADA compliant curb ramps where missing	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	Medium
O	27th St & Stevens Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; crossings do not meet accessibility standards	Install curb extensions on all four corners; install high visibility crosswalks; install ADA compliant curb ramps where missing	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking.	City of Minneapolis	Medium
P	28th St & Pillsbury Ave	Drivers not anticipating people crossing through this intersection; crossings do not meet accessibility standards; long crossing distances; vehicles parked close to the crosswalks, decreasing visibility	Install high visibility crosswalks; install ADA compliant curb ramps where missing. Long term recommendations: reduce the number of vehicle travel lanes on 28th to one and install curb extensions on the north side of 28th St	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, shorter crossing distance, more comfortable experience for people walking.	City of Minneapolis	Medium
Q	27th St & Harriet Ave	Long crossing distances; vehicles parked close to the crosswalks, decreasing visibility; crossings do not meet accessibility standards	Install curb extensions on all four corners; install/maintain high visibility crosswalks; install ADA compliant curb ramps where missing	Slower vehicle speeds, higher yielding compliance by drivers, better visibility, more comfortable experience for people walking. Drivers in the area identify the intersection as a gateway to the school.	City of Minneapolis	Low
R	28th St & Grand Ave	Long crossing distances; long traffic signal cycle / wait time for people desiring to cross	Install/maintain high visibility crosswalks; install advance stop bars; install leading pedestrian interval (LPI). Long term recommendations: reduce the number of vehicle travel lanes on 28th to one and install curb extensions on the north side of 28th St	Better visibility, shorter crossing distance, more comfortable experience for people walking. Less encroachment on pedestrian space by stopped vehicles,	City of Minneapolis	Low
S	Harriet Ave between 26th St and 27th St	Existing No Parking Sign not aligned with designated bus parking area	Relocate sign to the appropriate location to line up with bus stall signage.	Create additional visibility at intersection of Harriet Ave and 27th St.	City of Minneapolis	Low
T	Lyndale Ave Corridor	Primary barrier to comfortable walking and biking to/from school from the west. Coordinate with Items I and M; coordinate with Hennepin County pedestrian crossing study / spot improvement opportunities.	Consider traffic calming improvements along corridor including median safety islands, lane width reductions, curb extensions at intersections. Consider adding leading pedestrian interval (LPI) at signals along corridor.	Slower speeds and increased comfort for people walking and biking in the corridor.	Hennepin County & City of Minneapolis	Coordinate with Hennepin County
U	26th St Corridor	Primary barrier to comfortable walking and biking to/from school from the north. Coordinate with Items J, C,A, K, L and B; coordinate with 26th St resurfacing / evaluation of bike lanes (anticipated 2022).	Consider traffic calming improvements along corridor including median safety islands, lane number and width reductions, curb extensions at intersections. Consider adding leading pedestrian interval (LPI) at signals along corridor.	Slower speeds, shorter crossing distance, and increased comfort for people walking and biking in the corridor.	City of Minneapolis	Coordinate with City of Minneapolis
V	Pleasant Ave Corridor	Opportunity to enhance comfortable walking and biking to/from school from the . Coordinate with Items K, D and H; coordinate with Pleasant Ave Bike/Walk Boulevard Implementation (within next four years).	Consider traffic calming improvements along corridor including median safety islands, midblock neckdowns, curb extensions at intersections, bicycle boulevard/neighborhood greenway.	Slower speeds and increased comfort for people walking and biking in the corridor.	City of Minneapolis	Coordinate with City of Minneapolis
W	28th St Corridor	Primary barrier to comfortable walking and biking to/from school from the south. Coordinate with Items R, H and P; coordinate with 28th St resurfacing / evaluation of bike lanes (anticipated 2022).	Consider traffic calming improvements along corridor including median safety islands, lane number and width reductions, curb extensions at intersections. Consider adding leading pedestrian interval (LPI) at signals along corridor.	Slower speeds, shorter crossing distance, and increased comfort for people walking and biking in the corridor.	City of Minneapolis	Coordinate with City of Minneapolis

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 12 | StreetLight HCAADT Report

Type of Travel	Zone Name	Average Daily Zone Traffic (Stl Index)	HCAADT to Index Ratio	**Estimated HCAADT**
Commercial	CSAH 012 & N of S Diamond Lake Rd	4447	0.3165	**1400**
Commercial	CSAH 032 & S of 68th St	1061	0.3165	**335**
Commercial	CSAH 152 S of 27th St E	6552	0.3165	**2050**
Commercial	CSAH 22 S of 25th St W	7719	0.3165	**2450**
Commercial	CSAH 5 W of Grand Ave	3102	0.3165	**980**

Example calculation: 4447*0.3165 = 1407

Type of Travel	Zone Name	Average Daily Zone Traffic (Stl Index)	2021 HCAADT	HCAADT to Index Ratio
Commercial	H019	1383	270	0.1952
Commercial	H045	14065	2950	0.2097
Commercial	H052	6362	2750	0.4323
Commercial	H118	1182	330	0.2792
Commercial	H120	9342	750	0.0803
Commercial	H146	3241	770	0.2376
Commercial	H250	6117	500	0.0817
Commercial	H251	4374	2050	0.4687
Commercial	H302	28750	3250	0.1130
Commercial	H313	4877	1300	0.2666
Commercial	H315	3686	920	0.2496
Commercial	H404	1756	890	0.5068
Commercial	H443	5276	2850	0.5402
Commercial	H488	1173	225	0.1918
Commercial	H543	2906	960	0.3304
Commercial	H570	5203	2700	0.5189
Commercial	H571	11760	1450	0.1233
Commercial	H573	6757	6100	0.9028
Commercial	H610	10808	4100	0.3793
Commercial	H637	6878	1600	0.2326
Commercial	H649	2398	600	0.2502
Commercial	H745	8291	3350	0.4041
Commercial	H766	3945	1800	0.4563
Commercial	H807	13018	1900	0.1460

Average ratio **0.3165**

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 13 | Minneapolis Street Lighting Plan

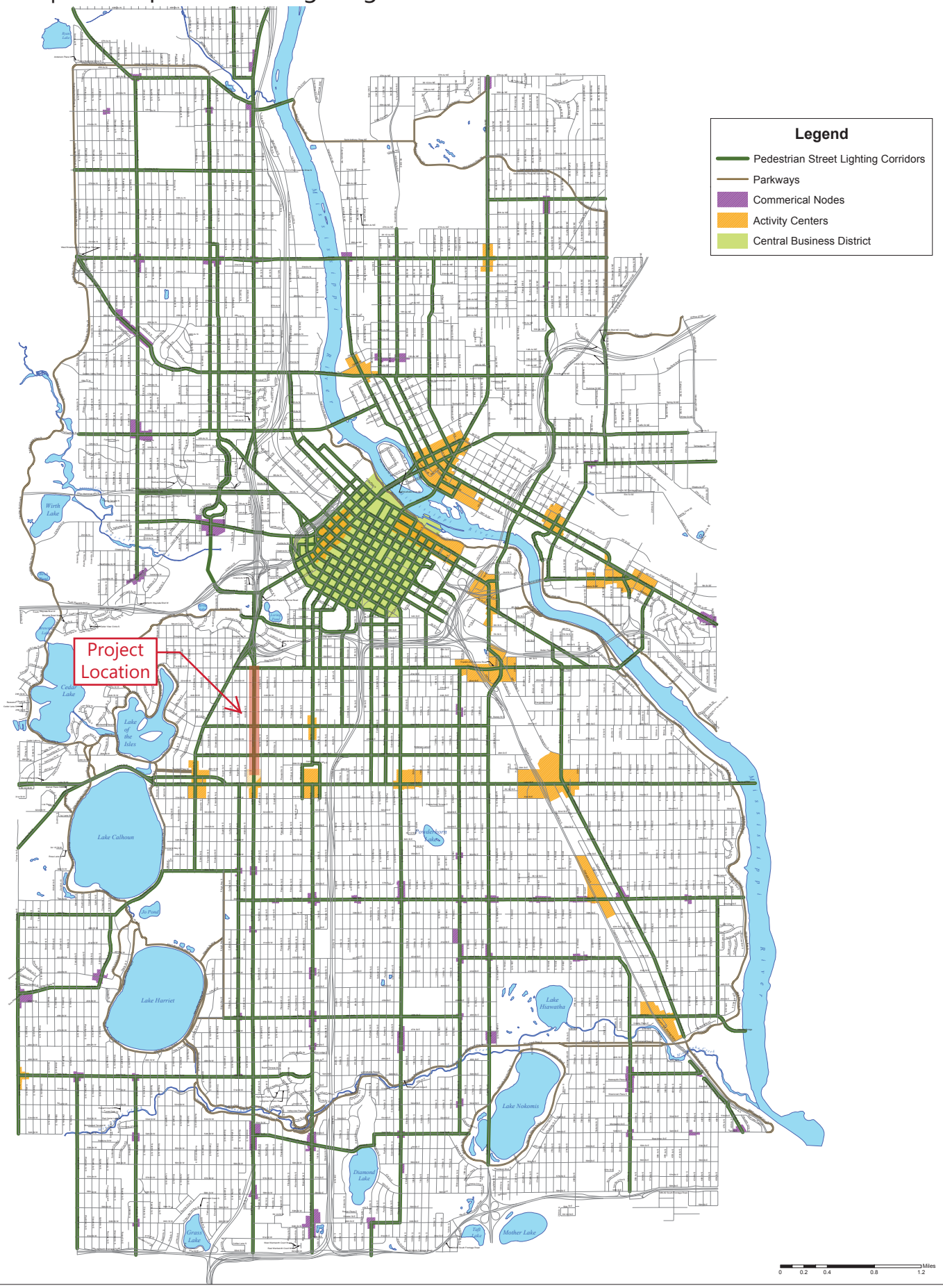


Figure 2: Minneapolis Street Lighting Plan

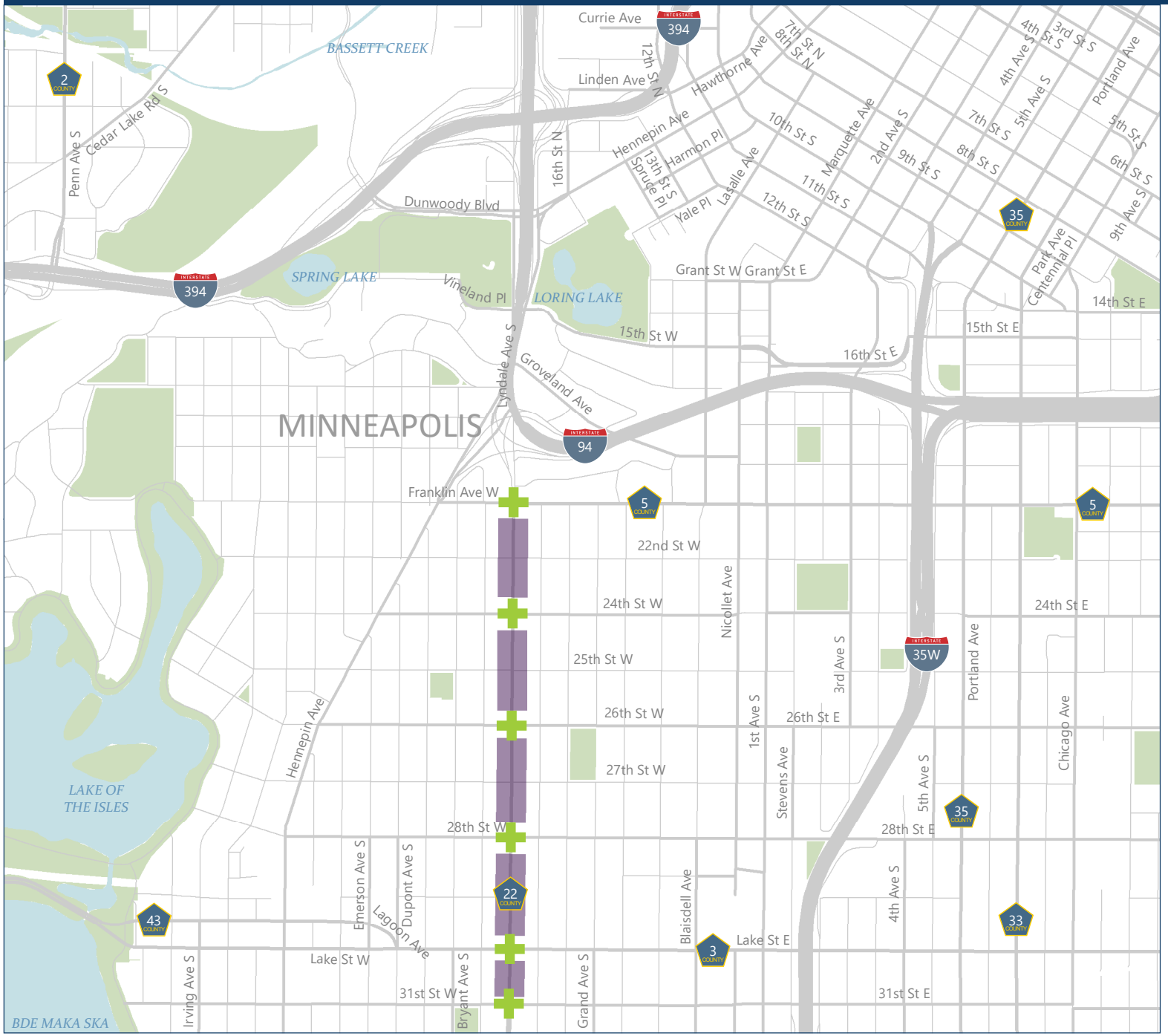
4/3/2015

Traffic & Parking Services Division
Department of Public Works
300 Border Avenue North
Minneapolis, MN 55405
612.673.5750
Minneapolis City of Lakes

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

HENNEPIN COUNTY
MINNESOTA



Key

- Crash Analysis Intersection
- Crash Analysis Segement

0 0.225 0.45 Miles

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Published date: 2/2/2022

N

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Segment A l From North of CSAH 3 (Lake Street) to South of 28th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00693042	LYNDALE AVE S	2	28	2019	13	5	0	2		44.94852	-93.2881042
00698384	LYNDALE AVE S	3	16	2019	11	5	0	2	1	44.94852	-93.2881042
00845291	LYNDALE AVE S	10	8	2020	20	5	0	2	1	44.94863	-93.2881036
00758921	LYNDALE AVE S	11	1	2019	22	5	0	2	1	44.94874	-93.2881029
00774087	LYNDALE AVE S	12	21	2019	0	4	0	1		44.94876	-93.2881027
00773329	LYNDALE AVE S	12	20	2019	23	3	0	1	99	44.94881	-93.2881024
00673930	LYNDALE AVE S	1	4	2019	13	5	0	2	1	44.94889	-93.2881019
00691364	LYNDALE AVE S	2	24	2019	15	5	0	2	1	44.94899	-93.2881013
00731258	LYNDALE AVE S	7	3	2019	15	5	0	2		44.94921	-93.2880999
00822802	LYNDALE AVE S	7	31	2020	14	5	0	2	11	44.94928	-93.2880995
00758908	LYNDALE AVE S	11	1	2019	19	5	0	3	99	44.94934	-93.2880991
00682358	LYNDALE AVE S	2	1	2019	18	5	0	2	99	44.94936	-93.2880989
00941285	LYNDALE AVE S	9	17	2021	20	4	0	3		44.94898	-93.2881013
00906883	LYNDALE AVE S	5	21	2021	0	5	0	1	71	44.94982	-93.288096
00908787	LYNDALE AVE S	5	30	2021	15	5	0	2	72	44.94987	-93.2880957
00980039	LYNDALE AVE S	12	13	2021	1	0	0	1		44.95007	-93.2880944
00979293	LYNDALE AVE S	12	10	2021	10	2	0	3	75	44.95044	-93.2880921
00941307	LYNDALE AVE S	9	18	2021	2	0	0	2		44.95098	-93.2880886
00873870	LYNDALE AVE S	1	11	2021	12	5	0	2	1	44.95155	-93.2880851
00934291	LYNDALE AVE S	8	15	2021	0	0	0	2		44.95174	-93.2880838
00774655	LYNDALE AVE S	12	28	2019	2	5	0	3	90	44.94938	-93.2880988
00696069	LYNDALE AVE S	3	8	2019	11	5	0	2		44.94975	-93.2880965
00862675	LYNDALE AVE S	11	11	2020	13	5	0	2		44.94996	-93.2880951
00678980	LYNDALE AVE S	1	25	2019	12	5	0	2	68	44.95071	-93.2880904
00730834	LYNDALE AVE S	7	1	2019	23	4	0	2	90	44.95099	-93.2880886
00744944	LYNDALE AVE S	9	4	2019	13	5	0	2	1	44.95099	-93.2880886
00772810	LYNDALE AVE S	12	19	2019	9	5	0	2	2	44.95114	-93.2880876
00785654	LYNDALE AVE S	2	5	2020	14	5	0	2		44.95121	-93.2880872
00696454	LYNDALE AVE S	3	9	2019	19	5	0	2	99	44.95124	-93.288087
00701220	LYNDALE AVE S	4	1	2019	21	5	0	2		44.95125	-93.288087
00803875	LYNDALE AVE S	3	13	2020	16	5	0	2	90	44.95132	-93.2880865
00768740	LYNDALE AVE S	12	6	2019	21	5	0	2		44.95134	-93.2880864
00752023	LYNDALE AVE S	10	4	2019	2	5	0	2	72	44.95142	-93.2880859
00761074	LYNDALE AVE S	11	9	2019	14	5	0	2	1	44.9515	-93.2880854
00765174	LYNDALE AVE S	11	25	2019	21	5	0	2		44.95165	-93.2880844
00732327	LYNDALE AVE S	7	9	2019	12	5	0	2	1	44.95186	-93.2880831
00913036	W 29TH ST	6	18	2021	2	3	0	1	99	44.95001	-93.2881495
00728519	W 29TH ST	6	21	2019	16	5	0	2		44.95001	-93.2882101
00860596	W 29TH ST	11	1	2020	12	5	0	2	10	44.95001	-93.2881278
00862828	W 29TH ST	11	11	2020	22	5	0	2	1	44.95001	-93.2881199
	Subtotal:	**37**									

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Intersection B I At 28th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00935873	LYNDALE AVE S	8	22	2021	21		0	2	99	44.95211	-93.2880815
00888506	LYNDALE AVE S	2	6	2021	0	5	0	2	66	44.95189	-93.2880829
00697911	LYNDALE AVE S	3	14	2019	21	4	0	2	1	44.95151	-93.2880853
00809578	LYNDALE AVE S	5	8	2020	18	4	0	2		44.95183	-93.2880833
00732327	LYNDALE AVE S	7	9	2019	12	5	0	2	1	44.95186	-93.2880831
00871536	LYNDALE AVE S	12	29	2020	16	4	0	1	99	44.95186	-93.2880249
00734551	LYNDALE AVE S	7	19	2019	8	5	0	3	74	44.95194	-93.2880826
00861980	LYNDALE AVE S	11	8	2020	22	5	0	2	90	44.95196	-93.2880825
00862264	LYNDALE AVE S	11	10	2020	9	5	0	2	70	44.95195	-93.2880825
00863334	LYNDALE AVE S	11	13	2020	16	5	0	3		44.95195	-93.2880825
00936351	W 28TH ST	8	24	2021	23	5	0	1	99	44.95193	-93.2879401
00967318	W 28TH ST	10	16	2021	5	5	0	3		44.95193	-93.2879064
00738669	W 28TH ST	8	6	2019	22	5	0	1		44.95193	-93.2882116
00805981	W 28TH ST	4	3	2020	12	5	0	3		44.95193	-93.2882049
00768045	W 28TH ST	12	4	2019	13	5	0	3	90	44.95193	-93.288111
00693906	W 28TH ST	3	2	2019	10	4	0	1	2	44.95193	-93.2880858
00677813	W 28TH ST	1	22	2019	4	5	0	2	1	44.95193	-93.288047
00707508	W 28TH ST	5	3	2019	9	5	0	2		44.95193	-93.2879936
00746945	W 28TH ST	9	12	2019	18	5	0	2	70	44.95193	-93.2879271
00777104	LYNDALE AVE S	1	4	2020	17	4	0	2	99	44.95208	-93.2880817
	Subtotal:	**16**									

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Segment C I From South of 28th Street to South of 26th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00813856	LYNDALE AVE S	6	10	2020	18	4	0	2	2	44.95209	-93.2880816
00735991	LYNDALE AVE S	7	25	2019	9	5	0	2	2	44.95223	-93.2880807
00838469	LYNDALE AVE S	9	2	2020	0	5	0	3		44.95224	-93.2880806
00785187	LYNDALE AVE S	2	3	2020	8	3	0	3		44.95227	-93.2880804
00834183	LYNDALE AVE S	8	8	2020	3	5	0	2		44.95243	-93.2880794
00734275	LYNDALE AVE S	7	16	2019	18	5	0	2		44.95256	-93.2880786
00696216	LYNDALE AVE S	3	8	2019	23	5	0	2		44.95258	-93.2880785
00808993	LYNDALE AVE S	5	3	2020	15	5	0	2		44.95258	-93.2880785
00743064	LYNDALE AVE S	8	25	2019	18	4	0	2	1	44.95277	-93.2880773
00696509	LYNDALE AVE S	3	10	2019	3	5	0	2		44.9528	-93.288077
00968199	LYNDALE AVE S	10	20	2021	23	5	0	2	70	44.95244	-93.2880793
00915811	LYNDALE AVE S	7	2	2021	11	5	0	2		44.95305	-93.2880754
00907855	LYNDALE AVE S	5	22	2021	23	5	0	2	99	44.95311	-93.2880751
00899006	LYNDALE AVE S	4	3	2021	21	5	0	2		44.9537	-93.2880712
00899439	LYNDALE AVE S	4	6	2021	14	5	0	2	2	44.95372	-93.2880711
00983461	LYNDALE AVE S	12	26	2021	13	5	0	4	1	44.95374	-93.288071
00908591	LYNDALE AVE S	5	29	2021	9	4	0	3		44.95377	-93.2880708
00912768	LYNDALE AVE S	6	17	2021	19	4	0	3	74	44.9548	-93.2881033
00900118	LYNDALE AVE S	4	10	2021	19	5	0	3	99	44.95519	-93.2880617
00895431	LYNDALE AVE S	3	12	2021	14	5	0	2	99	44.95532	-93.2880609
00691138	LYNDALE AVE S	2	23	2019	13	5	0	2		44.95351	-93.2880725
00739665	LYNDALE AVE S	8	11	2019	18	5	0	3	99	44.95351	-93.2880724
00720772	LYNDALE AVE S	5	18	2019	18	5	0	2		44.95369	-93.2880713
00784747	LYNDALE AVE S	1	31	2020	18	5	0	2		44.95372	-93.2880711
00764576	LYNDALE AVE S	11	20	2019	16	5	0	3		44.95375	-93.2880709
00748813	LYNDALE AVE S	9	20	2019	13	5	0	2		44.95376	-93.2880708
00766367	LYNDALE AVE S	11	29	2019	14	4	0	3		44.95378	-93.2880707
00806126	LYNDALE AVE S	4	4	2020	17	5	0	2	1	44.95378	-93.2880707
00838036	LYNDALE AVE S	8	30	2020	16	4	0	3	99	44.95382	-93.2879391
00765677	LYNDALE AVE S	11	27	2019	11	5	0	2	1	44.95391	-93.2880699
00755320	LYNDALE AVE S	10	18	2019	0	2	0	2	90	44.95428	-93.2880675
00696459	LYNDALE AVE S	3	9	2019	19	5	0	2		44.95436	-93.288067
00751514	LYNDALE AVE S	10	2	2019	5	5	0	2	1	44.95461	-93.2880654
00726996	LYNDALE AVE S	6	15	2019	2	3	0	1	99	44.95463	-93.2880653
00807664	LYNDALE AVE S	4	21	2020	1	5	0	3		44.95467	-93.288065
00766409	LYNDALE AVE S	11	30	2019	2	5	0	2		44.95493	-93.2880634
00773532	LYNDALE AVE S	12	21	2019	20	5	0	4		44.95506	-93.2880626
00935340	W 27TH ST	8	20	2021	0	5	0	2	1	44.95373	-93.2880097
00797809	W 27TH ST	2	14	2020	12	4	0	2	1	44.95373	-93.288105
00756591	W 27TH ST	10	23	2019	10	5	0	2	10	44.95373	-93.2880171
00809352	W 27TH ST	5	6	2020	18	5	0	2	1	44.95373	-93.2879555
00747618	LYNDALE AVE S	9	15	2019	18	5	0	3	1	44.95551	-93.2880597
00781018	LYNDALE AVE S	1	19	2020	9	5	0	2		44.95553	-93.2880596
00767087	W 26TH ST	12	1	2019	18	5	0	6	99	44.95554	-93.288003
00935831	W 26TH ST	8	22	2021	18	5	0	2	99	44.95554	-93.2881097
	Subtotal:	**42**									

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Intersection D I At 26th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00861306	LYNDALE AVE S	11	5	2020	6	5	0	2	1	44.9555	-93.2880597
00767065	LYNDALE AVE S	12	1	2019	16	5	0	4	1	44.95551	-93.2880597
00748029	LYNDALE AVE S	9	17	2019	13	5	0	2	99	44.95553	-93.2880596
00801616	LYNDALE AVE S	3	1	2020	12	5	0	2	90	44.95556	-93.2880594
00754209	LYNDALE AVE S	10	13	2019	3	5	0	2	74	44.95557	-93.2880593
00786607	LYNDALE AVE S	2	9	2020	18	5	0	2		44.95559	-93.2880592
00812918	W 26TH ST	6	5	2020	10	5	0	2	63	44.95554	-93.2881737
00722493	W 26TH ST	5	27	2019	2	5	0	2		44.95554	-93.2881402
00931361	W 26TH ST	7	31	2021	1	3	0	5	99	44.95554	-93.288157
00915546	W 26TH ST	7	1	2021	9	5	0	2	99	44.95554	-93.2880851
00702350	W 26TH ST	4	7	2019	16	4	0	2		44.95554	-93.2881248
00707771	W 26TH ST	5	4	2019	13	5	0	2		44.95554	-93.2881174
00844710	W 26TH ST	10	6	2020	8	4	0	2	1	44.95554	-93.2880547
00730007	W 26TH ST	6	28	2019	10	5	0	3	63	44.95554	-93.2880497
00736544	W 26TH ST	7	28	2019	2	3	0	1	1	44.95554	-93.2880051
00888586	LYNDALE AVE S	2	6	2021	13	5	0	2		44.95538	-93.2880605
00931588	LYNDALE AVE S	7	31	2021	15	5	0	2		44.95545	-93.2880601
00720891	LYNDALE AVE S	5	19	2019	11	5	0	2	99	44.95514	-93.288062
00693819	LYNDALE AVE S	3	2	2019	9	5	0	2		44.9553	-93.2880611
00755084	LYNDALE AVE S	10	16	2019	22	4	0	2	90	44.95537	-93.2880606
00840980	LYNDALE AVE S	9	15	2020	23	5	0	2		44.95546	-93.28806
00754218	LYNDALE AVE S	10	13	2019	1	1	1	1	99	44.95587	-93.2880574
	Subtotal:	**20**									

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Segment E l From North of 26th Street to South of 24th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00781713	LYNDALE AVE S	1	21	2020	2	4	0	2	1	44.95561	-93.2880591
00838083	LYNDALE AVE S	8	31	2020	2	5	0	2	68	44.95573	-93.2880627
00817075	LYNDALE AVE S	6	29	2020	19	5	0	2	99	44.95581	-93.2880578
00750312	LYNDALE AVE S	9	26	2019	22	5	0	3	2	44.95618	-93.2880555
00782131	LYNDALE AVE S	1	21	2020	22	5	0	2		44.95635	-93.2880545
00802866	LYNDALE AVE S	3	7	2020	15	5	0	2		44.95639	-93.2880542
00759451	LYNDALE AVE S	11	3	2019	22	5	0	2	99	44.95647	-93.2880537
00707441	LYNDALE AVE S	5	2	2019	23	3	0	4	1	44.95648	-93.2880537
00836861	LYNDALE AVE S	8	23	2020	19	5	0	2	1	44.95656	-93.2880532
00773523	LYNDALE AVE S	12	21	2019	22	5	0	5	70	44.95663	-93.2880527
00698325	LYNDALE AVE S	3	17	2019	2	5	0	3	74	44.9571	-93.2880498
00767289	LYNDALE AVE S	12	2	2019	8	5	0	2		44.95713	-93.2880497
00741306	LYNDALE AVE S	8	19	2019	2	5	0	1	99	44.95718	-93.2880493
00802816	LYNDALE AVE S	3	7	2020	10	4	0	2	2	44.95729	-93.2880486
00695336	LYNDALE AVE S	3	5	2019	22	5	0	2	1	44.95731	-93.2880485
00754350	LYNDALE AVE S	10	13	2019	17	5	0	2	99	44.95731	-93.2880485
00785736	LYNDALE AVE S	2	5	2020	22	3	0	2	70	44.95731	-93.2880486
00863203	LYNDALE AVE S	11	13	2020	2	5	0	2	75	44.95731	-93.2880485
00823188	LYNDALE AVE S	8	2	2020	19	5	0	2	10	44.95734	-93.2880484
00979190	LYNDALE AVE S	12	10	2021	3	0	0	3		44.95606	-93.2880563
00930878	LYNDALE AVE S	7	28	2021	8	5	0	4	71	44.95647	-93.2880538
00930206	LYNDALE AVE S	7	25	2021	3	5	0	4		44.95679	-93.2880518
00914271	LYNDALE AVE S	6	24	2021	17	3	0	2	99	44.95723	-93.2880491
00894604	LYNDALE AVE S	3	7	2021	13	4	0	2	99	44.95733	-93.2880484
00913565	LYNDALE AVE S	6	21	2021	22	5	0	2	99	44.95734	-93.2880484
00972373	LYNDALE AVE S	11	9	2021	17	2	0	2	99	44.95738	-93.2880481
00887516	LYNDALE AVE S	1	29	2021	15	5	0	4	1	44.9574	-93.288048
00913042	LYNDALE AVE S	6	18	2021	22	5	0	4	74	44.95752	-93.2880472
00916977	LYNDALE AVE S	7	8	2021	18	3	0	2	1	44.95799	-93.2880441
00982568	LYNDALE AVE S	12	22	2021	0	4	0	4		44.95809	-93.2880435
00945337	LYNDALE AVE S	10	7	2021	8	4	0	2	70	44.95826	-93.2880423
00917797	LYNDALE AVE S	7	13	2021	0	0	0	3		44.95828	-93.2880422
00930202	LYNDALE AVE S	7	24	2021	1	5	0	3		44.95837	-93.2880417
00874714	LYNDALE AVE S	1	15	2021	22	5	0	2		44.9586	-93.2880402
00929777	LYNDALE AVE S	7	22	2021	19	4	0	3		44.9587	-93.2880395
00909247	LYNDALE AVE S	6	2	2021	0	5	0	2		44.95887	-93.2880383
00743562	LYNDALE AVE S	8	29	2019	0	4	0	3	99	44.95736	-93.2880482
00809364	LYNDALE AVE S	5	6	2020	22	5	0	4	90	44.95745	-93.2880476
00848652	LYNDALE AVE S	10	22	2020	21	5	0	2		44.95747	-93.2880475
00734284	LYNDALE AVE S	7	18	2019	2	5	0	2	74	44.95774	-93.2880458
00764034	LYNDALE AVE S	11	21	2019	4	4	0	1	90	44.95775	-93.2880457
00805426	LYNDALE AVE S	3	27	2020	12	5	0	3	71	44.95783	-93.2880451
00784866	LYNDALE AVE S	2	1	2020	1	5	0	2		44.95795	-93.2880444
00690621	LYNDALE AVE S	2	21	2019	16	5	0	2		44.95816	-93.288043
00720154	LYNDALE AVE S	5	12	2019	12	5	0	2		44.95823	-93.2880426
00764048	LYNDALE AVE S	11	21	2019	4	5	0	3		44.95822	-93.2880426
00742976	LYNDALE AVE S	8	26	2019	11	5	0	2	1	44.95826	-93.2880423
00745792	LYNDALE AVE S	9	8	2019	0	5	0	2		44.95832	-93.288042
00761708	LYNDALE AVE S	11	11	2019	22	5	0	3	74	44.95835	-93.2880418
00865680	LYNDALE AVE S	11	28	2020	11	5	0	2		44.95836	-93.2880417
00719152	LYNDALE AVE S	5	10	2019	22	5	0	2	74	44.9584	-93.2880414
00743574	LYNDALE AVE S	8	29	2019	3	5	0	2	99	44.95893	-93.288038
00807080	LYNDALE AVE S	4	14	2020	19	5	0	2	65	44.95898	-93.2880377
00900138	W 25TH ST	4	11	2021	3	5	0	1	75	44.95735	-93.2881622
00908016	W 25TH ST	5	26	2021	16	4	0	2	99	44.95735	-93.2881356
00913788	W 25TH ST	6	22	2021	18	5	0	2	99	44.95735	-93.2880928

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00872655	W 25TH ST	1	3	2021	21	5	0	2	99	44.95735	-93.2880016
00945695	W 25TH ST	10	8	2021	21	4	0	2	99	44.95735	-93.2879687
00721240	W 25TH ST	5	20	2019	21	3	0	3	70	44.95735	-93.2881155
00676053	W 25TH ST	1	14	2019	17	3	0	2	1	44.95735	-93.2880909
00698243	W 25TH ST	3	16	2019	15	5	0	2		44.95735	-93.2880792
00707645	W 25TH ST	5	3	2019	19	4	0	2	99	44.95735	-93.2880658
00845969	W 25TH ST	10	12	2020	14	4	0	3	1	44.95735	-93.2880592
00821276	W 25TH ST	7	23	2020	14	5	0	2		44.95735	-93.2880323
00776358	W 24TH ST	1	1	2020	0	5	0	4		44.95913	-93.2880578
00943020	LYNDALE AVE S	9	26	2021	14	5	0	3	90	44.95911	-93.2880368
	Subtotal:	**64**									

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Intersection F I At 24th Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00905678	LYNDALE AVE S	5	14	2021	19	5	0	2	99	44.95911	-93.2880368
00937516	LYNDALE AVE S	8	30	2021	18	5	0	2	2	44.95912	-93.2880367
00934333	LYNDALE AVE S	8	15	2021	10	5	0	2	1	44.95918	-93.2880364
00887386	LYNDALE AVE S	1	30	2021	21	3	0	2	1	44.95921	-93.2880361
00696510	LYNDALE AVE S	3	10	2019	4	5	0	1	71	44.95906	-93.2880371
00721000	LYNDALE AVE S	5	19	2019	15	3	0	2	99	44.95908	-93.288037
00679989	LYNDALE AVE S	1	27	2019	22	5	0	2		44.95913	-93.2880367
00701765	LYNDALE AVE S	4	4	2019	22	5	0	2	1	44.95912	-93.2880367
00774860	LYNDALE AVE S	12	28	2019	11	5	0	2	1	44.95913	-93.2880366
00784784	LYNDALE AVE S	2	1	2020	1	4	0	2	99	44.95914	-93.2880366
00840888	LYNDALE AVE S	9	15	2020	13	5	0	2	1	44.95913	-93.2880366
00860155	LYNDALE AVE S	10	29	2020	19	5	0	2	11	44.95914	-93.2880366
00764749	LYNDALE AVE S	11	23	2019	18	5	0	2		44.9592	-93.2880362
00696167	LYNDALE AVE S	3	8	2019	15	5	0	2	1	44.95921	-93.2880362
00736149	LYNDALE AVE S	7	26	2019	8	5	0	2	4	44.95921	-93.2880362
00971734	W 24TH ST	11	6	2021	11	4	0	2	1	44.95913	-93.2880707
00985233	W 24TH ST	12	31	2021	16	5	0	3	1	44.95913	-93.288068
00945883	W 24TH ST	10	10	2021	0	2	0	1	75	44.95913	-93.2879431
00675291	W 24TH ST	1	10	2019	17	5	0	2		44.95913	-93.2881348
00835333	W 24TH ST	8	14	2020	18	4	0	4	69	44.95913	-93.2881381
00682161	W 24TH ST	2	1	2019	19	5	0	2		44.95913	-93.2880708
00818271	W 24TH ST	7	7	2020	9	4	0	2	2	44.95913	-93.2880674
00701654	W 24TH ST	4	4	2019	11	4	0	2	71	44.95913	-93.2880631
00803970	W 24TH ST	3	14	2020	16	4	0	2	2	44.95913	-93.2880604
00834440	W 24TH ST	8	9	2020	21	5	0	2		44.95913	-93.2880539
00815470	W 24TH ST	6	20	2020	0	5	0	3		44.95913	-93.2879935
00782083	W 24TH ST	1	21	2020	18	5	0	2		44.95913	-93.287928
00804263	LYNDALE AVE S	3	16	2020	23	5	0	1	90	44.95941	-93.2880349
00886119	LYNDALE AVE S	1	23	2021	18	5	0	2	99	44.96038	-93.2880287
	Subtotal:	**27**				4					

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Intersection G I - At 22nd Street

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00822505	LYNDALE AVE S	7	30	2020	8	4	0	2	1	44.95979	-93.2880324
00739066	LYNDALE AVE S	8	8	2019	14	5	0	2		44.96006	-93.2880307
00689527	LYNDALE AVE S	2	18	2019	20	5	0	3	70	44.96015	-93.2880302
00678485	LYNDALE AVE S	1	23	2019	21	5	0	3	74	44.96027	-93.2880294
00808370	LYNDALE AVE S	4	27	2020	23	5	0	3	68	44.96032	-93.2880291
00720741	LYNDALE AVE S	5	18	2019	14	5	0	2		44.96078	-93.2880261
00699548	LYNDALE AVE S	3	22	2019	12	5	0	2	2	44.96078	-93.2880261
00763317	LYNDALE AVE S	11	17	2019	18	5	0	2		44.96079	-93.2880261
00692701	LYNDALE AVE S	2	27	2019	16	5	0	2		44.9608	-93.288026
00931557	LYNDALE AVE S	8	1	2021	3	5	0	2	99	44.95953	-93.2880341
00983410	LYNDALE AVE S	12	26	2021	2	5	0	2	99	44.95996	-93.2880314
00886880	LYNDALE AVE S	1	17	2021	1	5	0	2		44.96048	-93.288028
00970150	LYNDALE AVE S	10	29	2021	23	3	0	3	99	44.9606	-93.2880395
00892485	LYNDALE AVE S	2	22	2021	22	5	0	2	69	44.96063	-93.2880271
00897875	LYNDALE AVE S	3	27	2021	11	5	0	2	1	44.96073	-93.2880265
00976135	LYNDALE AVE S	11	28	2021	12	3	0	2	99	44.96078	-93.2880008
00979811	LYNDALE AVE S	12	11	2021	21	5	0	2		44.96079	-93.288026
00917796	LYNDALE AVE S	7	13	2021	3	5	0	2	1	44.96081	-93.2880259
00936473	LYNDALE AVE S	8	25	2021	16	4	0	2	1	44.96091	-93.2880253
00940568	LYNDALE AVE S	9	14	2021	18	5	0	3		44.9609	-93.2880253
00942738	LYNDALE AVE S	9	18	2021	2	5	0	2		44.96092	-93.2880253
00902808	LYNDALE AVE S	4	28	2021	15	3	0	1	1	44.96095	-93.2880251
00930001	LYNDALE AVE S	7	23	2021	22	5	0	6	99	44.96149	-93.2880309
00915902	LYNDALE AVE S	7	2	2021	23	2	0	1	99	44.96152	-93.2880311
00908559	LYNDALE AVE S	5	29	2021	1	5	0	2	71	44.96171	-93.2880332
00840144	LYNDALE AVE S	9	10	2020	22	5	0	2	1	44.9608	-93.288026
00861781	LYNDALE AVE S	11	7	2020	20	5	0	2	1	44.9608	-93.288026
00865635	LYNDALE AVE S	11	27	2020	23	5	0	3		44.96084	-93.2880258
00767267	LYNDALE AVE S	12	2	2019	6	5	0	2	99	44.96084	-93.2880257
00862573	LYNDALE AVE S	11	11	2020	0	5	0	2	99	44.96085	-93.2880257
00679073	LYNDALE AVE S	1	25	2019	15	3	0	1		44.96087	-93.2880255
00688596	LYNDALE AVE S	2	15	2019	10	5	0	2		44.96092	-93.2880253
00785866	LYNDALE AVE S	2	6	2020	14	5	0	2		44.96095	-93.2880251
00725806	LYNDALE AVE S	6	10	2019	11	5	0	1	1	44.96096	-93.2880253
00772102	LYNDALE AVE S	12	17	2019	2	5	0	2		44.96096	-93.2880253
00797421	LYNDALE AVE S	2	13	2020	7	4	0	1		44.96097	-93.2880254
00756651	LYNDALE AVE S	10	23	2019	12	5	0	3	1	44.9611	-93.2880268
00845629	LYNDALE AVE S	10	10	2020	17	4	0	2		44.96113	-93.2880271
00677797	LYNDALE AVE S	1	21	2019	17	5	0	3	99	44.96158	-93.2880318
00771228	LYNDALE AVE S	12	13	2019	20	5	0	2		44.96158	-93.2880318
00765531	LYNDALE AVE S	11	26	2019	11	5	0	2		44.96166	-93.2880326
00800751	LYNDALE AVE S	2	25	2020	18	5	0	2		44.96165	-93.2880326
00815297	LYNDALE AVE S	6	19	2020	1	5	0	1	99	44.96182	-93.2880343
00804603	LYNDALE AVE S	3	19	2020	14	5	0	2	11	44.96184	-93.2880345
00739169	LYNDALE AVE S	8	8	2019	21	5	0	2		44.96189	-93.2880351
00815032	LYNDALE AVE S	6	17	2020	19	5	0	2		44.96189	-93.2880351
00686064	LYNDALE AVE S	2	9	2019	18	5	0	2		44.96194	-93.2880356
00846747	LYNDALE AVE S	10	16	2020	11	5	0	2	74	44.9621	-93.2880373
00680476	LYNDALE AVE S	1	28	2019	21	5	0	1	99	44.96234	-93.2880398
00697653	LYNDALE AVE S	3	14	2019	1	5	0	2		44.96247	-93.2880412
00940359	W 22ND ST	9	13	2021	20	5	0	3	99	44.96094	-93.2880622
00931144	W 22ND ST	7	29	2021	20	0	0	2		44.96094	-93.2880178
00900031	W 22ND ST	4	10	2021	1	5	0	2		44.96094	-93.288002
00931449	W 22ND ST	7	31	2021	13	3	0	1	2	44.96094	-93.2879717
00695960	W 22ND ST	3	7	2019	23	5	0	4		44.96094	-93.2882197
00707100	W 22ND ST	5	1	2019	9	4	0	2	1	44.96094	-93.2880713
00677848	W 22ND ST	1	22	2019	8	5	0	2		44.96094	-93.2877568

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 14 | Crash Map and Detail Listing

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
00797671	W 22ND ST	2	14	2020	6	4	0	1	90	44.96094	-93.2880893
00673758	W 22ND ST	1	3	2019	18	3	0	2	75	44.96094	-93.2880491
00811045	W 22ND ST	5	20	2020	23	5	0	2		44.96094	-93.2880532
00802270	W 22ND ST	3	4	2020	10	5	0	2	70	44.96094	-93.2878992
00733531	-- NOT ON ROADW	7	15	2019	3	5	0	1	99	44.96085	-93.2881454
Subtotal:		**49**				0					

Intersection H I At CSAH 5 (Franklin Avenue)

Incident ID	Roadway	Month	Day	Year	Hour	Sev	Number K's	Number of Veh	Contributing Factor	Latitude	Longitude
939907	W FRANKLIN AVE	9	11	2021	12	4	0	1	1	44.96271	-93.2880126
975816	W FRANKLIN AVE	11	25	2021	3	5	0	2	99	44.96268	-93.2880035
928434	LYNDALE AVE S	7	15	2021	21	5	0	2		44.96264	-93.2880429
911327	LYNDALE AVE S	6	10	2021	21	5	0	2		44.96267	-93.2880432
931542	LYNDALE AVE S	7	31	2021	19	5	0	2		44.96268	-93.2880433
929478	LYNDALE AVE S	7	20	2021	14	4	0	2	4	44.9627	-93.2880436
887460	W FRANKLIN AVE	1	31	2021	17	5	0	2		44.96271	-93.2881767
909982	W FRANKLIN AVE	6	5	2021	9	5	0	2		44.96271	-93.2881688
967962	W FRANKLIN AVE	10	19	2021	20	4	0	2	1	44.96271	-93.288112
939704	W FRANKLIN AVE	9	10	2021	11	3	0	3	99	44.96271	-93.2880874
932546	LYNDALE AVE S	8	6	2021	2	5	0	2		44.96271	-93.2880454
941860	LYNDALE AVE S	9	21	2021	0	2	0	2	63	44.96275	-93.2880602
966748	LYNDALE AVE S	10	13	2021	9	5	0	2	70	44.96275	-93.2880618
872895	LYNDALE AVE S	1	5	2021	7	5	0	2		44.96281	-93.2879975
843569	W FRANKLIN AVE	9	24	2020	15	4	0	2	99	44.96271	-93.2879701
764653	W FRANKLIN AVE	11	23	2019	10	4	0	2	1	44.96271	-93.2879496
775964	W FRANKLIN AVE	12	31	2019	9	5	0	1	71	44.96271	-93.2879578
818192	W FRANKLIN AVE	7	4	2020	22	3	0	2		44.96271	-93.2879411
733342	LYNDALE AVE S	7	14	2019	2	5	0	2		44.9626	-93.2880426
775690	LYNDALE AVE S	12	30	2019	17	5	0	2		44.96262	-93.2880427
841304	LYNDALE AVE S	9	17	2020	18	5	0	3	99	44.96262	-93.2880428
734257	LYNDALE AVE S	7	17	2019	17	5	0	2	1	44.96266	-93.2880431
786370	LYNDALE AVE S	2	9	2020	0	5	0	2	70	44.96267	-93.2880433
733553	LYNDALE AVE S	7	15	2019	9	5	0	2		44.96269	-93.2880434
806631	LYNDALE AVE S	4	10	2020	19	5	0	2		44.96269	-93.2880435
807945	LYNDALE AVE S	4	23	2020	18	3	0	2	1	44.9627	-93.2880436
817446	LYNDALE AVE S	7	1	2020	17	5	0	2		44.9627	-93.2880436
835588	LYNDALE AVE S	8	10	2020	18	5	0	2		44.9627	-93.2880436
866212	LYNDALE AVE S	12	2	2020	14	5	0	2		44.9627	-93.2880436
729985	W FRANKLIN AVE	6	28	2019	5	5	0	2		44.96271	-93.288145
848917	W FRANKLIN AVE	10	23	2020	19	4	0	2	99	44.96271	-93.2881453
809940	W FRANKLIN AVE	5	12	2020	13	5	0	2	10	44.96271	-93.2881131
676077	LYNDALE AVE S	1	15	2019	0	5	0	2		44.96273	-93.2880531
817803	LYNDALE AVE S	7	4	2020	0	4	0	2	99	44.96275	-93.2880603
759353	LYNDALE AVE S	11	3	2019	15	5	0	2	90	44.96272	-93.2880354
688622	LYNDALE AVE S	2	15	2019	11	3	0	2	74	44.96273	-93.2880311
690934	LYNDALE AVE S	2	22	2019	23	5	0	2	74	44.96275	-93.2880144
719052	LYNDALE AVE S	5	10	2019	10	5	0	2		44.96277	-93.2879978
732133	LYNDALE AVE S	7	8	2019	16	5	0	2		44.96089	-93.2880254
674353	LYNDALE AVE S	1	6	2019	18	5	0	2		44.96095	-93.2880252
803485	LYNDALE AVE S	3	11	2020	14	4	0	2		44.96221	-93.2880385
701897	LYNDALE AVE S	4	5	2019	18	5	0	2		44.96242	-93.2880406
	Subtotal:	**35**				0					

Note #1: **Orange** crashes were evaluated as part of the county's CSAH 5 app

Note #2: **Red** crashes were outside the project

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

CMF ID: 1414

ADD SIGNAL (ADDITIONAL PRIMARY HEAD)

DESCRIPTION:

PRIOR CONDITION: INTERSECTION HAS ONE PRIMARY SIGNAL HEAD PER APPROACH

CATEGORY: INTERSECTION TRAFFIC CONTROL

STUDY: *SAFETY BENEFITS OF ADDITIONAL PRIMARY SIGNAL HEADS*, FELIPE ET AL., 1998

Star Quality Rating:	CANNOT BE RATED (INSUFFICIENT INFORMATION)
Rating Points Total:	

Crash Modification Factor (CMF)

Value:	0.72
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	28 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Average Traffic Volume:	
Time of Day:	

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	
Municipality:	Richmond, British Columbia
State:	
Country:	Canada
Type of Methodology Used:	2
Sample Size (sites):	8 sites after

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	The authors state that "three year of data were used for this analysis" (p. 7). This statement does not indicate if the b was 3 years, the after period was 3 years, both were 3 years, or the total time period was 3 years (i.e. 1.5 years for bef and 1.5 years for after period).

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

CMF ID: 1420

CONVERT SIGNAL FROM PEDESTAL-MOUNTED TO MAST ARM

DESCRIPTION:

PRIOR CONDITION: EXISTING PEDESTALS WERE REMOVED AND REPLACED WITH MAST ARM SIGNALS

CATEGORY: INTERSECTION TRAFFIC CONTROL

STUDY: *SIGNALIZED INTERSECTIONS: INFORMATIONAL GUIDE*, RODEGERDTS ET AL., 2004

Star Quality Rating:	★☆☆☆☆ [VIEW SCORE DETAILS]
Rating Points Total:	30

Crash Modification Factor (CMF)

Value:	0.51
Adjusted Standard Error:	
Unadjusted Standard Error:	0.031

Crash Reduction Factor (CRF)

Value:	49 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	3.1

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	
Traffic Volume:	
Average Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	
Municipality:	
State:	KS
Country:	usa
Type of Methodology Used:	3
Sample Size (crashes):	809 crashes before, 412 crashes after

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

CMF ID: 3034

INSTALL RAISED MEDIAN

DESCRIPTION:

PRIOR CONDITION: NO RAISED MEDIAN

CATEGORY: ACCESS MANAGEMENT

STUDY: *ANALYZING RAISED MEDIAN SAFETY IMPACTS USING BAYESIAN METHODS*, SCHULTZ ET AL., 2011

Star Quality Rating:	★★☆☆☆ [VIEW SCORE DETAILS]
Rating Points Total:	35

Crash Modification Factor (CMF)

Value:	0.61
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	39 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	Divided by Median
Speed Limit:	
Area Type:	
Traffic Volume:	Minimum of 10000 to Maximum of 55000 Average Daily Traffic (ADT)
Average Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	1998 to 2008
Municipality:	
State:	UT
Country:	USA
Type of Methodology Used:	2
Sample Size (site-years):	32 site-years before, 28 site-years after

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jul-15-2011
Comments:	The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 points as a beneift of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment gr number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the dataset used for CMF development.

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

F / CRF DETAILS

CMF ID: 4140

CHANGE PERMISSIVE LEFT-TURN PHASING TO PROTECTED ONLY OR PROTECTED/PERMISSIVE

DESCRIPTION: TREATMENT GROUP INCLUDES INTERSECTIONS WHERE SIGNAL PHASES WERE CHANGED FROM PERMISSIVE TO PROTECTED-ONLY OR PROTECTED/PERMISSIVE.

PRIOR CONDITION: TREATMENT GROUP INCLUDES INTERSECTIONS WHERE SIGNAL PHASES WERE CHANGED FROM PERMISSIVE TO PROTECTED-ONLY OR PROTECTED/PERMISSIVE.

CATEGORY: INTERSECTION TRAFFIC CONTROL

STUDY: *LEFT-TURN PHASE: PERMISSIVE, PROTECTED, OR BOTH?*, LI CHEN, CYNTHIA CHEN, AND REID EWING, 2012

Star Quality Rating:	★★☆☆☆ [VIEW SCORE DETAILS]
Rating Points Total:	65

Crash Modification Factor (CMF)

Value:	0.58
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	42 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not Specified
Number of Lanes:	1 to 5
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Average Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	3-leg,4-leg,More than 4 legs
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	1995 to 2009
Municipality:	New York City
State:	NY
Country:	USA
Type of Methodology Used:	3
Sample Size (crashes):	2447 crashes before, 564 crashes after

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-01-2012
Comments:	The corresponding change in crashes in the comparison group was a 35 percent reduction in total crashes. This coulc adjust the treatment effect to account for other factors not related to the treatment.

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CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

CMF / CRF D

CMF ID: 8477

INCREASE INTERSECTION ILLUMINANCE FROM LOW (< 0.2 FC) TO MEDIUM (≥ 0.2 FC AND < 1.1 FC)

DESCRIPTION: INCREASE INTERSECTION ILLUMINANCE 13 FROM LOW (< 0.2 FC) TO MEDIUM (≥ 0.2 FC AND < 1.1 FC)

PRIOR CONDITION: SIGNALIZED INTERSECTIONS WITH LOWER ILLUMINANCE (< 0.2 FC)

CATEGORY: HIGHWAY LIGHTING

STUDY: *SAFETY EFFECTS OF STREET ILLUMINANCE AT URBAN SIGNALIZED INTERSECTIONS IN FLORIDA*, WEI ET AL., 2016

Star Quality Rating:	★★★☆☆ [VIEW SCORE DETAILS]
Rating Points Total:	75

Crash Modification Factor (CMF)

Value:	0.519
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	48.1 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	Other
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Average Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	3-leg,4-leg
Traffic Control:	Signalized
Major Road Traffic Volume:	Minimum of 5167 to Maximum of 67508 Annual Average Daily Traffic (AADT)
Minor Road Traffic Volume:	Minimum of 1300 to Maximum of 56387 Annual Average Daily Traffic (AADT)
Average Major Road Volume :	29733 Annual Average Daily Traffic (AADT)
Average Minor Road Volume :	12457 Annual Average Daily Traffic (AADT)

Development Details

Date Range of Data Used:	2010 to 2013
Municipality:	Tampa
State:	FL
Country:	
Type of Methodology Used:	7
Sample Size (crashes):	1234 crashes
Sample Size (sites):	91 sites
Sample Size (site-years):	364 site-years

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jan-17-2017
Comments:	CMF is for percent difference in the expected night-to-day crash ratio for increasing illuminance from low range to m range.

VIEW THE FULL STUDY DETA

EXPORT DETAIL PAGE AS A F

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For more information, contact Karen Scurry at **karen.scurry@dot.gov**

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 15 | Crash Modification Factors

CMF ID: 9298

RESURFACE PAVEMENT

DESCRIPTION:

PRIOR CONDITION: *NO PRIOR CONDITION(S)*

CATEGORY: ROADWAY

STUDY: *TIME SERIES TRENDS OF THE SAFETY EFFECTS OF PAVEMENT RESURFACING*, PARK ET AL., 2017

Star Quality Rating:	★★★☆☆ [VIEW SCORE DETAILS]
Rating Points Total:	105

Crash Modification Factor (CMF)

Value:	0.901
Adjusted Standard Error:	
Unadjusted Standard Error:	0.05

Crash Reduction Factor (CRF)

Value:	9.9 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	5

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Principal Arterial Other
Number of Lanes:	1-4
Road Division Type:	
Speed Limit:	25mph to 65mph
Area Type:	Urban
Traffic Volume:	Minimum of 2100 to Maximum of 40500 Annual Average Daily Traffic (AADT)
Average Traffic Volume:	8659 Annual Average Daily Traffic (AADT)
Time of Day:	Not specified

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	2004 to 2013
Municipality:	
State:	FL
Country:	USA
Type of Methodology Used:	1

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jun-17-2018
Comments:	Heavy vehicle volume rate > 3.3% The number of crashes in the after period were not reported in this study, howeve been recorded as 300 to give 10 points as a beneift of doubt for one or more of the following: (1) number of miles/sit reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the ag dataset but not for the disaggragate dataset used for CMF development.

VIEW THE FULL STUDY DETA

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Intersection Crashes

Countermeasure(s)	Crash Type	Crash Severity	Area Type	Config	Control	Major Daily Traffic Volume (veh/day)	Minor Daily Traffic Volume (veh/day)	Ref	Obs	Effectiveness: Crash Reduction Factor / Function	Effectiveness: Std Error	Effectiveness: Range Low	Effectiveness: Range High	Study Type
Install raised median (unmarked crosswalk)	Ped	All						60		39				
Install refuge islands	Ped	All						28		56				
Install splitter islands on minor road approaches	All	Fatal/Injury	All	3-Leg	All			58		45				
	All	Fatal/Injury	All	4-Leg	All			58		40				
	All	Fatal/Injury	All	All	All			58		40				
	All	Fatal/Injury	Rural	All	All			58		35				
	All	Fatal/Injury	Urban	All	All			58		40				
Install turn and bypass lanes	All	All	Rural		Stop			48		5	10			Simple Before-After
	Head-on	PDO		3-Leg				15		13				Simple Before-After
	Left-turn	Injury		3-Leg				15		36				Simple Before-After
	Left-turn	PDO		3-Leg				15		28				Simple Before-After
	ROR	PDO		3-Leg				15		40				Simple Before-After
	Rear-end	Injury		3-Leg				15		18				Simple Before-After
	Rear-end	PDO		3-Leg				15		21				Simple Before-After
	Right-angle	Injury		3-Leg				15		24				Simple Before-After
	Right-angle	PDO		3-Leg				15		53				Simple Before-After
	Sideswipe	PDO		3-Leg				15		30				Simple Before-After
Vary median width	All	All	Rural		Stop			6		100(1-EXP(-0.012(Wm-16))); Wm=median width (ft)				
	All	All	Urban	3-Leg	Stop			6		100(1-EXP(0.0082(Wm-16))) for Wm>16 1.0 for Wm<=16; Wm=median width (ft)				

Curb Extensions and Curb Radii

What are the advantages?

- May be temporarily implemented and evaluated using low-cost, interim materials such as gravel, planters, paint and striping, flexible posts, or bollards until a permanent improvement can be funded through a reconstruction project or other programming.
- Increase visibility of pedestrians and bicyclists crossing the street.
- Encourage slower turning speeds.
- Reduce crossing distance at mid-block crosswalks.
- Serve as a gateway or visual cue for drivers entering a slower, more residential area.
- May dedicate width for bus stops (bus bulbs).
- May dedicate width for on-street parking.
- Increase space for street furniture, landscaping, and stormwater treatment.
- Improve intersection sight distance (by prohibiting parking near the intersection)
- Provide additional space to construct ADA-compliant curb ramps.
- Studies show a reduction in crashes up to 45%.

What are the challenges?

- Design can be restricted by the turning radius of the larger design vehicles (trucks and buses).
- Stormwater management needs associated with the new curb alignment (e.g., catch basin locations) can bring additional design and construction costs.
- Require additional winter maintenance considerations.
- Curb extension retrofits may reduce the amount of available on-street parking

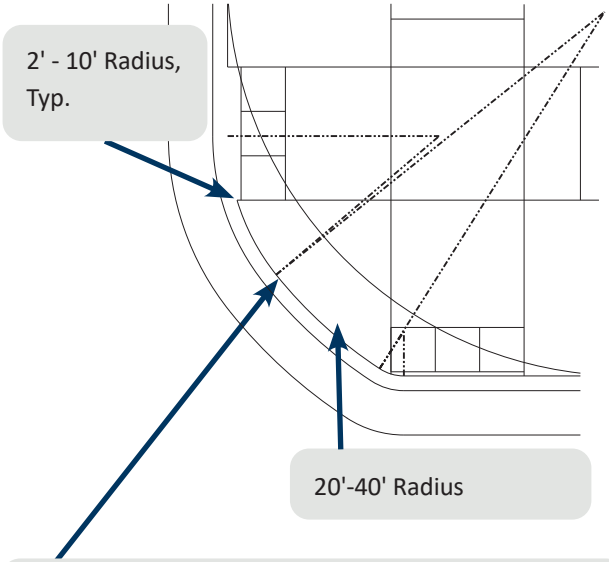
Supplemental treatments

Curb extensions and curb radii can be combined with the following treatments:

- High-visibility crosswalk markings
- Advanced warning signs
- Right turn on red restrictions at signalized intersections
- Landscaping or other aesthetic improvements

Best practices

Curb extensions can often be lengthened to provide additional space for landscaping, stormwater treatment, transit waiting areas, and bus shelters. In addition, curb extensions can create additional space to fit ADA-compliant curb ramps, improving accessibility in constrained locations where it may otherwise be difficult to do so.



A compound radius can increase available curb extension space while still allowing large vehicles to turn, especially on multi-lane roadways.

Compound radius detail, Source: MnDOT Curb Ramp Standard Plan

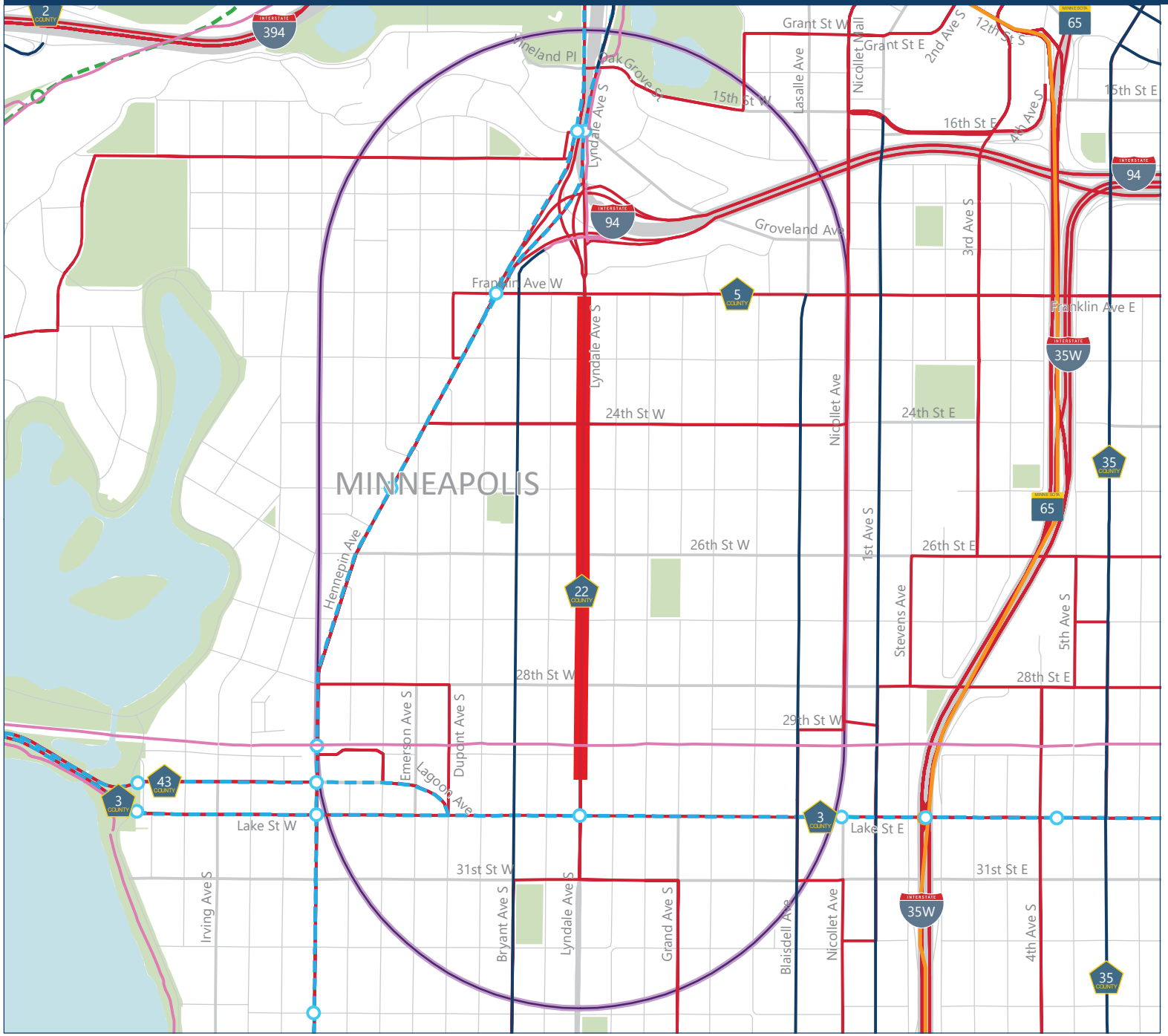
How much do they cost?

Costs depend on site conditions, drainage impacts, pavement design, and ADA accommodations. Curb extension installation can range between $2,000-$3,500 per corner if it does not cause storm sewer impacts and between $10,000-$20,000 per corner if it does cause storm sewer impacts.

CSAH 22 (Lyndale Ave) Reconstruction Project

Attachment 16 | Multimodal Connections Map

HENNEPIN COUNTY
MINNESOTA



Key

- Project Location
- 1/2 Mi Buffer

Bikeways

- Off-Street
- On-Street

Transitway Stations

- Arterial BRT
- Green Line / Ext
- Orange Line

Transitway Alignments

- Orange Line BRT
- Planned Arterial BRT
- Planned Green Line LRT
- Transit Routes

0 0.25 0.5 Miles

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Published date: 3/23/2022

N

Hennepin

Minneapolis
City of Lakes

Public Works
350 S. Fifth St. - Room 203
Minneapolis, MN 55415
TEL 612.673.3000
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Support for Hennepin County
Regional Solicitation Applications

Dear Ms. Stueve:

Hennepin County has requested letters of support for a series of grant applications as part of the Regional Solicitation process, by which the Metropolitan Council competitively allocates federal transportation funds. As a part of this request, Minneapolis conducted a review of completed plans, studies, and community engagement, as well as documented priorities and adopted policies to identify which projects to support. Improvements along Hennepin County streets offer significant opportunities to address some of the greatest safety and mobility needs within Minneapolis and are a critical part of the city's goal to address climate change, support mode shifts, and eliminate deaths and severe injuries resulting from traffic crashes.

Minneapolis hereby supports the following applications:

Roadway Reconstruction / Modernization

- Franklin Ave (CSAH 5) Reconstruction: Lyndale Ave (CSAH 22) to approx. 250' West of Blaisdell Ave
- Lyndale Ave (CSAH 22) Reconstruction: HCRRA to Franklin Ave (CSAH 5)
- Cedar Ave (CSAH 152) Reconstruction: 150' North of Lake St (CSAH 3) TO 24TH St

Multiuse Trail and Bicycle Facilities

- *Marshall St NE (CSAH 23) Bikeway: 3rd Ave NE to (CSAH 153) Lowry Ave NE
- Park Ave (CSAH 33) and Portland Ave (CSAH 35) Bikeway: Lake St (CSAH 3) to the I-35W/I-94 Bridges

Pedestrian Facilities

- *Marshall St NE (CSAH 23) Pedestrian Improvements: 3rd Ave NE to (CSAH 153) Lowry Ave NE
- Lake St (CSAH 3) Pedestrian Improvements: Dupont to the Mississippi River

*Whereas the County is pursuing grant funding in the Multiuse Trail and Bicycle Facilities and Pedestrian Facilities categories, the city supports the County applications with the understanding that this funding is applied to fully reconstruct Marshall St NE.

At this time, Minneapolis has no funding programmed in its adopted 2023-2028 Transportation Capital Improvement Program (CIP) for these projects. Therefore, Minneapolis is currently unable to commit cost participation in these projects. However, we request that Hennepin County includes city staff as part of the design process to ensure project success. Furthermore, Minneapolis agrees to provide maintenance, such as sweeping and plowing, for protected bikeways until such time Hennepin County has the resources to do so.

Thank you for making us aware of this application effort and the opportunity to provide support. Minneapolis Public Works looks forward to working with you on these projects.

Sincerely,

Margaret Anderson Kelliher

Margaret Anderson Kelliher
Director of Public Works
City of Minneapolis