Application

19838 - 2024 Roadway Modernization
20236 - University Ave NE Reconstruction
Regional Solicitation - Roadways Including Multimodal Elements

Status: Submitted
Submitted Date: 12/15/2023 11:38 AM

Primary Contact

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* Minneapolis (City) Minnesota (State/Province) 55415 (Postal Code/Zip)

Phone:* 612-673-2460 (Phone) (Ext.)

Fax:

What Grant Programs are you most interested in? Regional Solicitation - Bicycle and Pedestrian Facilities

Organization Information

Name: MINNEAPOLIS,CITY OF

Jurisdictional Agency (if different):

Organization Type: City

Organization Website: http://www.ci.minneapolis.mn.us/

Address: DEPT OF PUBLIC WORKS
309 2ND AVE S #300

* MINNEAPOLIS (City) Minnesota (State/Province) 55401 (Postal Code/Zip)

County: Hennepin

Phone:* 612-673-3884 (Ext.)

Fax:

PeopleSoft Vendor Number 0000020971A2

Project Information

Project Name University Avenue NE (TH 47) Complete Streets Project (Central Avenue NE to 9th Avenue NE)

Primary County where the Project is Located Hennepin

Cities or Townships where the Project is Located: City of Minneapolis

Jurisdictional Agency (If Different than the Applicant): MnDOT

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

The project will reconstruct a 0.9-mile section of TH 47 (University Avenue NE) between TH 65 (Central Avenue NE) and 9th Avenue NE. This section is currently a four-lane undivided urban roadway and is functionally classified as an A-Minor Reliever Arterial. The roadway carries over 13,000 vehicles per day currently and is projected to experience nominal traffic growth in the next 20 years. Parking is allowed on both sides of the street between Central Avenue and 1st Avenue. Sidewalk facilities exist along the entire corridor on both sides of TH 47; however, the sidewalks are in poor conditions in many areas making it challenging for users walking, biking, and rolling along the corridor. There are currently no bicycle facilities along the corridor.

There are six signals on the corridor. Many of the signals, including those at 3rd Ave NE, 5th Ave NE, and 8th Ave NE, were recently updated and already include enhanced features (APS, countdown timers, etc.). Older signals will be updated or replaced to provide enhanced and accessible features, including adequate crossing timings for pedestrians and bicyclists.

This project will reconstruct the roadway to provide new pavement structure, improve motor vehicle safety and efficiency, and improve the deficiencies in pedestrian, bicycle, and transit infrastructure. Currently, the corridor is not very accessible or comfortable for non-motorized users traveling along or across TH 47. The project will redesign the corridor to improve safety and mobility for all modes of transportation. The street will be reduced to a three-lane section including a center turn lane, enhanced signal timings, accessible pedestrian signals (APS), high visibility crosswalk markings and countdown timers, and curb bump outs and pedestrian refuge islands at key locations. Between Central Ave and 1st Ave NE, bikeway facilities will be included on both sides of the corridor to connect to key destinations and existing and planned bicycle networks. These improvements together support the goals in MnDOT's Complete Streets Policy, MnDOT's Statewide Multimodal Transportation Plan, Minneapolis' Transportation Action Plan, and Minneapolis' Vision Zero Policy, and Minneapolis' ADA Transition Plan.

(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.

TH 47 (UNIVERSITY AVENUE NE) FROM TH 65 (CENTRAL AVENUE NE) TO 9TH AVENUE NE IN MINNEAPOLIS (0.9-MILES); ROADWAY RECONSTRUCTION, SIGNALS, CURB AND GUTTER, DRAINAGE, STORMWATER MANAGEMENT, SIDEWALK, SEPARATED BIKEWAY, LIGHTING, ADA IMPROVEMENTS AND ADA PED

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)

0.9

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

$2,232,520.00

Minimum of 20% of project total

Project Total

$9,232,520.00

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

Match Percentage

24.18%

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

Source of Match Funds

MnDOT sources as identified in the STIP and Minneapolis net debt bonds and assessments

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:

2028, 2029

Select 2026 or 2027 for TDM and Unique projects only. For all other applications, select 2028 or 2029.

Additional Program Years:

2026, 2027

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

Project Information-Roadways

NOTE: If your project has already been assigned a State Aid Project # (SAP or SP), please Indicate SAP# here

SAP#:	
County, City, or Lead Agency	MnDOT
Functional Class of Road	Minor Arterial
Road System	TH
TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET	
Road/Route No.	47
i.e., 53 for CSAH 53	
Name of Road	University Avenue NE
Example; 1st ST., MAIN AVE	
TERMINI:(Termini listed must be within 0.3 miles of any work)	
From: **Road System**	TH
Road/Route No.	65
i.e., 53 for CSAH 53	
Name of Road	Central Avenue NE
Example; 1st ST., MAIN AVE	
To: **Road System**	City Street
DO NOT INCLUDE LEGAL DESCRIPTION	
Road/Route No.	
i.e., 53 for CSAH 53	
Name of Road	9th Avenue NE
Example; 1st ST., MAIN AVE	
In the City/Cities of:	Minneapolis
(List all cities within project limits)	
OR:	
At: **Road System**	
(TH, CSAH, MSAS, CO. RD., TWP. RD., City Street)	
Road/Route No.	
i.e., 53 for CSAH 53	
Name of Road	
Example; 1st ST., MAIN AVE	
In the City/Cities of:	
(List all cities within project limits)	
PROJECT LENGTH	
Miles	0.9
(nearest 0.1 miles)	
Primary Types of Work (check all the apply)	
New Construction	
Reconstruction	Yes
Resurfacing	
Bituminous Pavement	Yes
Concrete Pavement	
Roundabout	
New Bridge	
Bridge Replacement	
Bridge Rehab	
New Signal	Yes
Signal Replacement/Revision	Yes
Bike Trail	Yes
Other (do not include incidental items)	
BRIDGE/CULVERT PROJECTS (IF APPLICABLE)	
Old Bridge/Culvert No.:	
New Bridge/Culvert No.:	
Structure is Over/Under **(Bridge or culvert name):**	
OTHER INFORMATION:	
Zip Code where Majority of Work is Being Performed	55413
Approximate Begin Construction Date	03/01/2028
Approximate End Construction Date	11/30/2028
Miles of Trail (nearest 0.1 miles)	0.2
Miles of Sidewalk (nearest 0.1 miles)	0.9
Miles of trail on the Regional Bicycle Transportation Network (nearest 0.1 miles):	0.2
Is this a new trail?	Yes

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:

Goal A: Transportation System Stewardship (p. 2.2), Objective A & B, Strategies A1 & A2

Goal B: Safety and Security (p. 2.5), Objective A & B, Strategies B1, B4, & B6

Goal C: Access to Destinations (p. 2.10), Objectives A, B, D & E, Strategies C1, C2, C4, C9, C11, C15, C16, & C17

Goal D: Competitive Economy (p. 2.26), Objectives A, B, & C, Strategies D1, D3, & D4

Goal E: Healthy and Equitable Communities (p. 30), Objectives A, B, C, & D, Strategies E1, E2, E3, E4, E5, E6, & E7

Goal F: Leveraging Transportation Investments to Guide Land Use (p. 2.35), Objectives A & B, Strategies F1, F2, F3, F4, F5, F6, & F7

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.

Hennepin County Mobility 2040 Plan (2019) - p. 4, 5, 6, 12 to 18, 20, 23, & 34 (See Attachment)

Hennepin County Pedestrian Plan (2013) - p. 3, 4, 8, 15, 16, 20, 21, & 52 (See Attachment)

Hennepin County 2040 Bicycle Transportation Plan (2015) - p. xi, xv, xvi, 8, 23, 35, 36, 38, 39, & 40 (See Attachment)

Hennepin County ADA Transition Plan (2015) - p. vi, 1, 4, 9, 10, & 12 (See Attachment)

City of Minneapolis Comprehensive Plan (2020) - p. 7, 137, 140, 142, 144, 145, & 153 (See Attachment)

City of Minneapolis Transportation Action Plan - p. 7, 137, 140, 142, 145, & 153 (See Attachment)

City of Minneapolis Complete Streets Policy - p. 1 to 4 (See Attachment)

City of Minneapolis St Anthony West Small Area Plan (2015) - p. iii, 2, 5, 6, 8, 9, 12, 21, 22, 33, 38, & 39 (See Attachment)

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 2024 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 future Regional Solicitation funding cycles, this requirement may include that the plan has undergone a recent update, e.g., within five years prior to application.

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: 03/01/2022

Link to plan: https://www2.minneapolismn.gov/media/content-assets/www2-documents/departments/2022-ADA-Transition-Plan-Update-V2.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. This includes assurance of year-round use of bicycle, pedestrian, and transit facilities, per FHWA direction established 8/27/2008 and updated 4/15/2019. 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 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. Bridge Rehabilitation/Replacement projects must be located on a minor collector and above functionally classified roadway in the urban areas or a major collector and above in the rural areas.

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 MnDOT?s ?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 in-place structure is 20 feet or longer.

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

6. The bridge must have a Local Planning Index (LPI) of less than 60 OR a National Bridge Inventory (NBI) Rating of 3 or less for either Deck Geometry, Approach Roadway, or Waterway Adequacy as reported on the most recent Minnesota Structure Inventory Report.

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 David Elvin at MnDOT (David.Elvin@state.mn.us or 651-234-7795) 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.

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$0.00
Removals (approx. 5% of total cost)	$0.00
Roadway (grading, borrow, etc.)	$0.00
Roadway (aggregates and paving)	$8,114,374.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$0.00
Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$0.00
Traffic Control	$0.00
Striping	$0.00
Signing	$0.00

Lighting	$0.00
Turf - Erosion & Landscaping	$0.00
Bridge	$0.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$1,015,960.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$0.00
Other Roadway Elements	$0.00
Totals	**$9,130,334.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$0.00
Sidewalk Construction	$201,156.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$201,156.00**

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

PROTECT Funds Eligibility

One of the new federal funding sources is Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT). Please describe which specific elements of your project and associated costs out of the Total TAB-Eligible Costs are eligible to receive PROTECT funds. Examples of potential eligible items may include: storm sewer, ponding, erosion control/landscaping, retaining walls, new bridges over floodplains, and road realignments out of floodplains.

INFORMATION: Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program Implementation Guidance (dot.gov).

Response:

Totals

Total Cost	$9,331,490.00
Construction Cost Total	$9,331,490.00
Transit Operating Cost Total	$0.00

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

Existing Employment within 1 Mile:	67216
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	9199
Existing Post-Secondary Students within 1 Mile:	687
Upload Map	1702586372315_MplsTH47CompStreets_Regional Economy_Dec2023.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:	Yes
Miles:	0.9

(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:

None of the tiers:

Measure A: Current Daily Person Throughput

Location TH 47 (University Ave NE), south of 9th Ave

Current AADT Volume 13091

Existing Transit Routes on the Project 4, 6, 10, 11, 17, 25, 61, 250, 264, 270, 824, 888-Northstar Commuter Rail

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

Upload Transit Connections Map 1702586425064_MplsTH47CompStreets_TransitConnections_Dec2023.pdf

Please upload attachment in PDF form

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 0

Current Daily Person Throughput 17018.0

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:

1. *What engagement methods and tools were used?*
2. *How did you engage specific communities and populations likely to be directly impacted by the project?*
3. *What techniques did you use to reach populations traditionally not involved in community engagement related to transportation projects?*
4. *How were the project?s purpose and need identified?*
5. *How was the community engaged as the project was developed and designed?*
6. *How did you provide multiple opportunities for of Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing to engage at different points of project development?*
7. *How did engagement influence the project plans or recommendations? How did you share back findings with community and re-engage to assess responsiveness of these changes?*
8. *If applicable, how will NEPA or Title VI regulations will guide engagement activities?*

Response:

The population, within census tracts adjacent to the project limits (within 0.5 miles), that identifies as a person of color is 26%. Within the same area, 27% of the population are low-income, 12% are persons with a disability, and 15% of households speak a language other than English (Reference EJ Screen Summary Report Attachment).

During 2018 the City engaged residents as part of its ADA transition planning. The City's Public Works conducted community engagement to identify accessibility barriers and develop priorities for improving city-owned infrastructure in the ROW. In 2019, Public Works continued engagement in collaboration with the Transportation Action Plan and Vision Zero Action Plan.

Engagement for this project was also part of MnDOT's PEL Studies (2020 and ongoing), which evaluated multimodal needs on Central Ave (TH 65) and University Ave (TH 47) from Minneapolis to Fridley. Community engagement has been an essential component to understanding existing conditions and community needs, as well as ensuring that proposed improvements reflect those needs. Engagement activities were designed to actively reach BIPOC groups, low-income residents, people with disabilities, youth and older adults, transit dependent households, and other groups who may have been underrepresented or historically-excluded from the decision-making process. Thousands of residents provided their input to improve the transportation in their community.

From 2020 to 2023, engagement included multilingual materials (including Spanish, Arabic, and Hmong), multiple direct meetings with BIPOC-owned or servicing businesses, partnerships with local community organizations, outreach to apartment complexes with racially diverse and lower income residents, email campaigns, online surveys, in-person and virtual public events, and pop-up workshops at locations where community members were already gathering.

The engagement activities described above were fundamental to the project's purpose and need, evaluation criteria process, and development of concepts. Public input highlighted the need to improve corridor safety and access for pedestrians, bicyclists, and transit users. Comments emphasized the need for safer crossings across TH 47, concerns with reckless drivers weaving and speeding, lack of transit shelters, and the lack of designated bicycle facilities.

Community input confirmed that reducing the travel lanes and designating additional space for pedestrian and bicycle facilities addresses existing concerns and issues. As the project design progresses into construction, the City's Communications Team will continue to inform and engage community members.

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

Measure B: Disadvantaged Communities Benefits and Impacts

Describe the project?s benefits to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Benefits could relate to:

? pedestrian and bicycle safety improvements;
? public health benefits;
? direct access improvements for residents or improved access to destinations such as jobs, school, health care, or other;
? travel time improvements;
? gap closures;
? new transportation services or modal options;
? leveraging of other beneficial projects and investments;
? and/or community connection and cohesion improvements.

This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Disadvantaged communities residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Disadvantaged communities 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.

? Decreased pedestrian access through sidewalk removal / narrowing, placement of barriers along the walking path, increase in auto-oriented curb cuts, etc.
? Increased speed and/or ?cut-through? traffic.
? Removed or diminished safe bicycle access.
? Inclusion of some other barrier to access to jobs and other destinations.

Response:

The TH 47 Complete Streets project will benefit equity groups by improving safety and access to key destinations, such as employment, transit stops, places of worship, healthcare facilities, education, entertainment, and groceries. Currently, pedestrians and bicyclists must cross four travel lanes of fast and weaving traffic on TH 47. Unsafe and uncomfortable crossing conditions were highlighted as a top concern by public input.

The 4- to 3-lane conversion will eliminate weaving traffic, reduce traffic speeds, and shorten the distance that pedestrianss and bicyclists must cross at TH 47. The conversion will also provide additional space to accommodate enhanced ped and bike facilities, as well as furnishings that improve the public realm, such as lighting, stormwater infrastructure, benches, and trees. Medians with refuge islands can be installed at specific locations to further facilitate safe and comfortable crossing activity.

Many of the existing traffic signals, including those at 3rd Ave NE, 5th Ave NE, and 8th Ave NE, were recently updated and already include enhanced features (APS, countdown timers, etc.). Older signals will be updated or replaced to provide enhanced and accessible features, including adequate crossing timings for pedestrians and bicyclists. Lights will be assessed and upgraded as necessary to provide appropriate lighting for all travelers. Curb ramps and sidewalks will follow ADA accessibility design guidelines to provide access for travelers of all abilities.

These improvements will promote comfort and security for people walking along and across the project area during all times of day. Enhanced ped and bike facilities encourage more residents to use non-motorized travel modes, which reduces carbon emissions and air pollution. Improvements will provide a range of accessibility and health benefits for all residents, especially for equity groups.

The project does not impose adverse human health or environmental effects on equity groups. Project construction will incorporate proper noise, dust, and traffic mitigation. During construction, the City and partner agencies will work with businesses along the corridor to understand temporary impacts to people rolling, walking, biking, and taking transit, and driving. The City's communications team will be responsible for addressing questions and concerns from residents, business owners, and employees who live and work in the area. The City will work with Metro Transit to ensure that any changes to the transit system will be conveyed to transit riders in a timely manner. The project team will develop safe detour routes and will share maps and related information with residents.

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

Measure C: Affordable Housing Access

Describe any affordable housing developments?existing, under construction, or planned?within 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 project?s benefits to current and future affordable housing residents within ½ mile of the project. Benefits must relate to affordable housing residents. Examples may include:

? specific direct access improvements for residents
? improved access to destinations such as jobs, school, health care or other;
? new transportation services or modal options;
? and/or community connection and cohesion improvements.

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.

Response:

The project will improve access for the 1,788 affordable housing units located within .5 mile of the project (reference the list and map PDFs). Of which 666 are deeply affordable at 30% AMI. The project area is located in a census tract that is above the regional average for population in poverty. Affordable housing development locations include: East Bank Village Apartments (30 units), Grain Belt Terrace (150 units), Holmes Greenway (54 units), Holmes Park (107 units), Labor Retreat (77 units), Nicollet Island Coop (5 units), Northeast Apartments (57 units), Stonehouse Square (60 units), and Teamster Manor (24 units).

TH 47 connects residents to important destinations, including schools, childcare, healthcare, grocery stores, libraries, and religious institutions. Many residents of affordable housing depend on walking/biking/rolling to reach destinations and transit. The project will provide safer and more comfortable multimodal facilities for residents in affordable housing, who are more likely to not own a private vehicle.

The Complete Streets project will apply a "road diet" to TH 47, which will calm traffic speeds and reduce the crossing distance for peds and bikes. The 4- to 3-lane reduction, including a center turn lane, will provide additional space to accommodate enhanced ped and bike facilities. Separated bicycle facilities will be added on both sides of the roadway from Central Ave to 1st Ave.

TH 47 directly serves Metro Transit route 824; however, the project area is served by many Metro Transit local bus routes and includes several stops and future transit alignments, including the METRO E and F Line BRT routes (reference Transit Connections map). This route provides access to and from neighborhoods in Minneapolis, as well as commute, school, and leisure destinations in the northern suburbs and greater Twin Cities area.

Additionally, users who rely on transit will be provided with significantly better ADA accommodations to ensure that transit riders with limited mobility can access the stops from all directions. These improvements are key to maintaining consistent transit ridership in an area that offers retail and leisure destinations.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Project?s census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	Yes
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.	1702572888364_MplsTH47CompStreets_Socio-EconomicConditions_Dec2023.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1957	0.9	1761.3	1957.0
	1	**1761**	**1957**

Total Project Length

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

Average Construction Year

Weighted Year	1957

Total Segment Length (Miles)

Total Segment Length	0.9

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements:	Yes

Response:

The pavement will be designed to meet a 10-ton load limit standard to improve long-term structural integrity with heavy vehicles. Deteriorating driveway aprons will be replaced to better serve the heavier truck movements. Reducing from 4-lane to 3-lane (including a center turn lane) will improve the mobility, travel speeds, and safety for trucks accessing local businesses. The design will include dedicated left-turn lanes, improved signal phasing, and proper turning radii at intersections to improve intersection safety and efficiency. The project includes dedicated ped and bike facilities that will improve mobility and safety.

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines: Yes

Response:

Sight line and crossing improvements will be achieved by reducing the roadway from a 4- to 3-lane section. Narrowed street width calms driver speeds along the corridor. The road diet will eliminate the "dual-threat" where a stopped vehicle blocks the view of peds or bicyclists from vehicles in the other lane. The project will construct separated ped and bike facilities to meet clear zone standards. Enhanced lighting and high-visibility crosswalk markings will increase visibility of non-motorized users. Utilities and permanent obstacles will be removed or relocated outside of the clear zone. The proposed locations of all features (e.g., lighting and signing) will not obstruct sight lines.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics: Yes

Response:

The reconstruction will upgrade the existing section from a 4-lane to 3-lane roadway, including a center turn lane, with ped and bike facilities. Other geometric improvements will include boulevard width, appropriate turning radii, ADA-compliant curb ramps, bike lanes between Central Ave and 1st Ave, and improved pedestrian crossings. The conversion will eliminate lane changing activity, provide additional spacing for ped and bike facilities, and provide more space for snow storage. User experience, accessibility, and roadway safety will be positively impacted through these design strategies.

(Limit 700 characters; approximately 100 words)

Access management enhancements: Yes

Response:

The project will include a center turn lane to access properties along TH 47. Driveways along the corridor will be reviewed during final design process to ensure they meet width and geometry standards and identify opportunities to consolidate accesses and reduce conflict points (e.g., West Photo and Surdyk's driveways). Access will be improved for non-motorized users through enhanced ped and bike facilities, obstruction removal in the clear zone, snow-storage space, and clear walking areas throughout the year. The 4- to 3-lane conversion will improve turning movements, minimize dual-threat crashes, and reduce exposure for non-motorized users and people with limited mobility.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements: Yes

Response:

This segment of TH 47 is developed with mostly flat vertical alignments and one horizontal curve at the intersection of Hennepin Ave. Therefore, sight distance will remain generally adequate throughout the project area. The project may adjust the vertical alignment for other sight line improvement and stormwater management.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation: Yes

Response:

There are no known areas along the project area that are high risk for flooding as identified by Met Council's Localized Flood Map Screening Tool. The project will apply mitigation strategies and sustainable landscaping practices to address stormwater concerns. The project will replace storm sewer and curb and gutter to properly manage stormwater runoff and drainage with the proposed design. All required stormwater standards will be met. The contractor will be required to follow the Stormwater Pollution Prevention Plan to ensure proper sediment & erosion control.

(Limit 700 characters; approximately 100 words)

Signals/lighting upgrades: Yes

Response:

Many of the existing traffic signals, including those at 3rd Ave NE, 5th Ave NE, and 8th Ave NE, were recently updated and already include enhanced features (APS, countdown timers, etc.). Older signals will be updated or replaced to provide enhanced and accessible features. Existing streetlights will be assessed and upgraded as necessary to provide appropriate lighting for all travelers and comply with the City's Street Lighting Policy (since TH 47 is a designated Pedestrian Street Lighting Corridor, see Attachment 14). These improvements will promote comfort and security for people walking along and across the project area during all times of day.

(Limit 700 characters; approximately 100 words)

Other Improvements Yes

Response:

The project aligns with the City's Comp Plan, Transportation Action Plan, and Vision Zero, and County's Mobility Plan. The new design prioritizes walking, rolling, and biking by encouraging multimodal travel with a narrower cross-section, while eliminating severe and fatal traffic crashes. Intersection designs will use best practices for pedestrian ramp orientation and landing placement. Placement of signs, lighting poles, and utilities will not obstruct maintenance to ensure year-round access. The road diet provides additional space for larger enhanced transit stops and offers a consistent experience for peds, especially those with limited mobility.

(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 without the Project:	Total Peak Hour Delay by the Project:	Total Peak hour Delay Reduced by project	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
89.0	118.0	-29	10494	10494	933966.0	1238292.0	-304326	NA	1702579472534_MplsTH47CompStreets_SynchroReports_Dec2023.pdf
						1238292			

Vehicle Delay Reduced

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

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):
13.51	15.05	-1.54
14	**15**	**-2**

Total

Total Emissions Reduced: -1.54

Upload Synchro Report 1702586671164_MplsTH47CompStreets_SynchroReports_Dec2023.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:	CMF 5554 - Converting Four-Lane Roadways to Three-Lane Roadways with Center Turn Lane (Road Diet) (all crashes and severities) CMF 154 - Remove On Street Parking (all crashes, property damage only) CMF 7684 - Change from Permissive Only to FYA Protected/Permissive LT (left-turn, signalized intersections and all severities)
(Limit 700 Characters; approximately 100 words)	
Rationale for Crash Modification Selected:	All of the CMFs directly relate to the proposed changes for the TH 47 reconstruction project. We utilized the most applicable CMF for the roadway type and for the specific crash types when available to estimate a reasonable crash reduction calculation. A road diet (4 to 3-lane conversion) is proposed for the TH 47 corridor, so the CMF 5554 was applied to all crash types and severities for the entire length of the corridor. Additionally, the proposed improvements will likely require parking to be removed from the entire corridor; therefore, CMF 154 was applied to all segment crashes. CMF 7684 was applied only to left-turn crashes at signalized intersections due to the proposed changes to install FYA protected/permissive phasing when feasible at the existing six signalized intersections.
(Limit 1400 Characters; approximately 200 words)	
Project Benefit ($) from B/C Ratio	$7,312,431.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	2
Total Non-Motorized Fatal and Serious Injury Crashes:	4
Total Crashes:	61
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	1
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	19
Worksheet Attachment	1702586190327_MplsTH47CompStreets_BCworksheet_Dec2023.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 B: 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 doesn?t 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 roadway?s 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:

Public input emphasized the need to improve safety and comfort at crossings along TH 47. In the past three years, a total of 3 vehicle/pedestrian related crashes and 1 vehicle/bicyclist related crash occurred within the study area. Based on public feedback, many near-miss incidents occur daily between motorized and non-motorized users. Addressing unsafe crossings is a top priority for this project. The existing wide four-lane road creates challenging and unsafe crossing experiences for peds and bicyclists, especially at unsignalized or unmarked intersections. High speeds, vehicles weaving between lanes, and vehicles running red lights on TH 47 increased risk of collisions and crash severity. Public input revealed that signal timings also do not accommodate ped crossings because they have to wait long periods to cross and then have insufficient time to do so.

The Complete Streets project will apply a road diet to improve safety and access for peds crossing along TH 47. A 4- to 3-lane conversion will make crossings safer and more comfortable for peds and bicyclists. The conversion will calm traffic speeds, reduce risk of collisions and severity of crashes with motorized vehicles, eliminate weaving traffic, and shorten the distance that peds and bikes must cross. Separated left turns eliminate the "dual-lane threat" where a pedestrian is hidden by a yielding vehicle in the near lane and is hit by a moving vehicle in the far lane. Refuge islands and center medians will be installed at specific locations to allow individuals to cross one lane of traffic at a time across TH 47. High visibility marked crosswalks installed at specific unsignalized intersections will further increase visibility of peds and bicyclists.

Many of the existing traffic signals, including those at 3rd Ave NE, 5th Ave NE, and 8th Ave NE, were recently updated and already include enhanced features (APS modifications, countdown timers, curb extensions, etc.). Older signals will be updated or replaced to provide enhanced and accessible features, including adequate crossing timings for pedestrians and bicyclists. TH 47 lights will be assessed and upgraded as necessary to provide appropriate lighting for all travelers crossing the road. Pedestrian scale lighting can be added throughout the corridor to provide visibility throughout the entire day.

New curb ramps and sidewalks will follow ADA accessibility design guidelines, as identified in the City and County's ADA Transition Plans, to provide access for travelers of all abilities.

These improvements to the multi-modal network will allow users to better access the designated crossing locations, transit stops, businesses, and other local destinations.

(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:

(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:

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

Response:

(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 doesn?t require much elevation change instead of pedestrian bridge with numerous switchbacks).

Response:

(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:

(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 project will introduce several geometric elements that will manage speeds in the project area. Traffic calming elements will include lane reductions, lane narrowing, the presence of bike facilities for portions of the corridor, and enhanced signing and striping. These elements, including one through lane in each direction, will physically and visually narrow the roadway as drivers will tend to drive at more appropriate speed through the area. Motorists are expected to travel at more consistent and less variable speeds, resulting in a safer, more comfortable, and more efficient roadway. Curb extensions and pedestrian refuge islands will be reviewed and implemented where feasible, which will also introduce a traffic calming measure.

The project will also provide additional space for enhanced transit stops along the corridor. Pedestrian safety will be enhanced by reducing the roadway width and crossing exposure. The TH 47 crossings will include high-visibility crosswalks, ADA-compliant curb ramps, and accessible signal features.

(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 existing and proposed design, operation, and posted speed limit will remain unchanged at 30 mph.

(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 Yes

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

List the AADT

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.) 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.) Yes

Existing road is within 500? of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant) Yes

If checked, please describe:

TH 47 provides access to dozens of shopping, dining, and entertainment destinations in the St. Anthony West and Nicollet Island/East Bank neighborhoods, including key pedestrian destinations within 500' of the project area: Lunds & Byerly's (Grocery), Surdyk's (Shopping/dining), Bruegger's Bagels (dining), Northeast Tea (dining), Noodles & Comp (dining), Macs Industrial Bar (entertainment/dining), Fletcher's Ice Cream (dining), Chuck & Don (Shopping), Punch Pizza (dining), Jimmy Johns (dining), Kramarczuk's (dining), Chipotle (dining), Stepchld (dining), West Photo (shopping), Flamin' Thai (dining), Masu Sushi (dining), Arlo Boutique (shopping), Whitney's Old Town (entertainment/dining), Stray Dog (dining), Ground Zero (entertainment), Gorkha Palace (dining), Pa Tea & Poke (dining), Curry Corner (dining), Sonder Shaker (entertainment/dining), Emily's Lebanese Deli, and NE Minneapolis Farmers Market (grocery). Reference Pedestrian Generator and Equity Destinations Map Attachment.

(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:

TH 47 connects to a wide range of pedestrian generators located within 500' of project limits (Reference Pedestrian Generator and Equity Destinations Map Attachment). The area along the TH 47 project limits is under a variety of zoning codes that allow multifamily housing (Reference Minneapolis Zoning District Plate 14 Zoning: https://www2.minneapolismn.gov/media/content-assets/www2-documents/business/p14s.pdf). Multifamily housing types along TH 47 include duplexes, triplexes, quadplexes, and apartment buildings. Apartment buildings range in size, between 6 and 280 units. Subsidized housing complexes within 500' include East Bank Village Apartments (30 subsidized units) and Holmes Park (107 units).

There are two schools located within 500' of the project area's northern segment: Sheridan School and Las Estrellas Dual Language School.

Other pedestrian generators include 6 places of worship along TH 47, including Church of St. Boniface, St. Maron's Catholic Church, St. Michale's Ukrainian Orthodox, Church of All Saints, St. Constantine Ukrainian Catholic Church, and Our Lady of Lourdes Catholic Church.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The segment of TH 47, from Central Ave to 9th Ave, connects to a wide range of key destinations, such as employment centers, places of worship, healthcare facilities, education, entertainment, groceries, and transit stops. TH 47 is currently on the Pedestrian Priority Network as identified through the City's Transportation Action Plan and as a "High Injury Street" by the Vision Zero Action Plan. High speeds and vehicles weaving between lanes on TH 47 cause safety, mobility, and access issues for pedestrians, bicyclists, and transit users accessing these destinations. The wide four-lane road also creates a challenging and unsafe crossing experience for pedestrians, especially at unsignalized or unmarked intersections. Public input highlighted that signal timings do not accommodate pedestrian crossings across TH 47. Pedestrians wait long periods to cross at signals and then have insufficient time to cross at the signal.

TH 47 will receive a 4- to 3-lane conversion to eliminate weaving traffic, improve mobility, reduce traffic speeds and crashes, and shorten the distance that pedestrians and bicyclists must cross at TH 47. Pedestrian refuge islands where feasible will allow pedestrians and bicyclists to cross one lane of traffic at a time. The conversion will also provide additional space to accommodate enhanced pedestrian and bicycle facilities and furnishings. Curb ramps and sidewalks will follow ADA accessibility design guidelines to provide access for travelers of all abilities. Enhanced pedestrian and bicycle facilities, including the separated bikeways, will encourage more residents to use non-motorized travel modes, which can reduce carbon emissions and air pollution.

TH 47 is classified as a Tier 2 alignment under Met Council's RBTN since it connects to multiple transit routes and provides north-south access to important destinations throughout the regional bicycle network. This route will intersect future bicycle facilities along Broadway St and Central Ave. TH 47 is also identified as a low-stress bikeway by the City's All Ages and Abilities Network. Separated bicycle facilities will be added from TH 65 (Central Ave NE) to 1st Ave NE to provide a safer and more comfortable environment for biking.

(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.

Response:

This project is being developed in response to public input and findings from the Minneapolis Transportation Action Plan (TAP), Vision Zero Action Plan (VZAP), Minneapolis Safe Routes to School plan, and MnDOT's TH 47 and TH 65 PEL Study. Actively engaging underrepresented and historically-excluded groups was an important component to better understanding community needs and ensuring design recommendations reflect those needs.

For the TAP and VZAP, engagement included separate multilingual conversations with members from diverse communities. It also included 30 direct engagement activities done in partnership with contracted community-based organizations that are already serving and engaging underrepresented groups. Key themes heard from the community were to "improve traffic safety, especially for pedestrians" and "improve transportation options," and "make travel easy."

Engagement efforts completed as part of MnDOT's TH 47 and TH 65 PEL Study included multilingual materials (including Spanish, Arabic, and Hmong), 29 direct meetings with BIPOC-owned or servicing businesses, 256 calls with local stakeholders, 478 comments on the online interactive map, partnerships with local community organizations, outreach to apartment complexes with racially diverse and lower income residents, email campaigns, online surveys, and 3 in-person and virtual public events. Public input highlighted the need to improve corridor safety and access for pedestrians, bicyclists, and transit users. Comments emphasized the need for safer crossings across University Ave (TH 47), concerns with reckless drivers weaving and speeding, lack of transit shelters, and the lack of designated bicycle facilities.

The engagement activities described above were fundamental to this project's purpose and need, evaluation criteria process, and development of concepts. Community input confirmed that reducing the travel lanes and designating additional space for pedestrian and bicycle facilities addresses existing concerns and issues. As the project design progresses into construction, the City's Communications Team will continue to inform and engage community members.

(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 project?s 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.

50%

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

Yes

25%

Layout has not been started

0%

Attach Layout

1702655351964_PEL Concepts.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

100%

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

Yes

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	
25%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified	Yes
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):	$9,331,490.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$9,331,490.00
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
2024_RegionalSolicitation_AffordableHousing_UnivNE.pdf	List of affordable housing near the project.	149 KB
AffordableHousing_UniversityAveNE.pdf	Map of affordable housing near the project.	2.2 MB
Historic_UniversityAveNE.pdf	Historic resources near the project.	1002 KB
MplsTH47CompStreets_EJ Screen Summary Report 2023.pdf	MplsTH47CompStreets_EJ Screen Summary Report 2023	1.7 MB
MplsTH47CompStreets_ExistingPhotos_Dec2023.pdf	MplsTH47CompStreets_ExistingPhotos_Dec2023	1.5 MB
MplsTH47CompStreets_HennCounty 2040 Bicycle Transportation Plan.pdf	MplsTH47CompStreets_HennCounty 2040 Bicycle Transportation Plan	2.3 MB
MplsTH47CompStreets_HennCounty 2040 Mobility Plan.pdf	MplsTH47CompStreets_HennCounty 2040 Mobility Plan	711 KB
MplsTH47CompStreets_HennCounty ADA-sidewalk-transition-plan.pdf	MplsTH47CompStreets_HennCounty ADA-sidewalk-transition-plan	56 KB
MplsTH47CompStreets_HennCounty Pedestrian-Plan.pdf	MplsTH47CompStreets_HennCounty Pedestrian-Plan	2.6 MB
MplsTH47CompStreets_Letter_of_Support_Hennepin_Co.pdf	MplsTH47CompStreets_Letter_of_Support_Hennepin_Co	112 KB
MplsTH47CompStreets_Letter_of_Support_Minneapolis.pdf	MplsTH47CompStreets_Letter_of_Support_Minneapolis	2.4 MB
MplsTH47CompStreets_Letter_of_Support_MnDOT.pdf	MplsTH47CompStreets_Letter_of_Support_MnDOT	209 KB
MplsTH47CompStreets_LevelofCongestion_Dec2023.pdf	MplsTH47CompStreets_LevelofCongestion_Dec2023	3.1 MB
MplsTH47CompStreets_LevelofCongestion_Dec2023.pdf	MplsTH47CompStreets_LevelofCongestion_Dec2023	3.1 MB
MplsTH47CompStreets_Minneapolis 2040 Comp Plan.pdf	MplsTH47CompStreets_Minneapolis 2040 Comp Plan	443 KB
MplsTH47CompStreets_Mpls Complete Streets Policy 2019 Final.pdf	MplsTH47CompStreets_Mpls Complete Streets Policy 2019 Final	143 KB
MplsTH47CompStreets_Mpls Transp Action Plan.pdf	MplsTH47CompStreets_Mpls Transp Action Plan	5.1 MB
MplsTH47CompStreets_Pedestrian Generators and Equity Destinations_Dec2023.pdf	MplsTH47CompStreets_Pedestrian Generators and Equity Destinations_Dec2023	890 KB
MplsTH47CompStreets_Project Description Page_Dec2023.pdf	MplsTH47CompStreets_Project Description Page_Dec2023	1.3 MB
MplsTH47CompStreets_St-anthony-west-neighborhood-small-area-plan.pdf	MplsTH47CompStreets_St-anthony-west-neighborhood-small-area-plan	3.1 MB

Regional Economy

Roadway Reconstruction/Modernization Project: University Avenue Complete Streets | Map ID: 1700498108991

Results

WITHIN ONE MI of project:
Postsecondary Students: 687

Totals by City:
Minneapolis
Population: 43783
Employment: 67216
Mfg and Dist Employment: 9199

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

0 0.15 0.3 0.6 0.9 1.2 Miles

Created: 11/20/2023
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: University Avenue Complete Streets | Map ID: 1700498108991

Results

Transit with a Direct Connection to project:
10 11 17 25 250 264 270 30 4 6 61
824 888
*F Line
*Johnson/Lyndale
*E Line
*Nicollet-Central

**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 0.15 0.3 0.6 0.9 1.2 Miles

Created: 11/20/2023
LandscapeRSA3

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https://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL

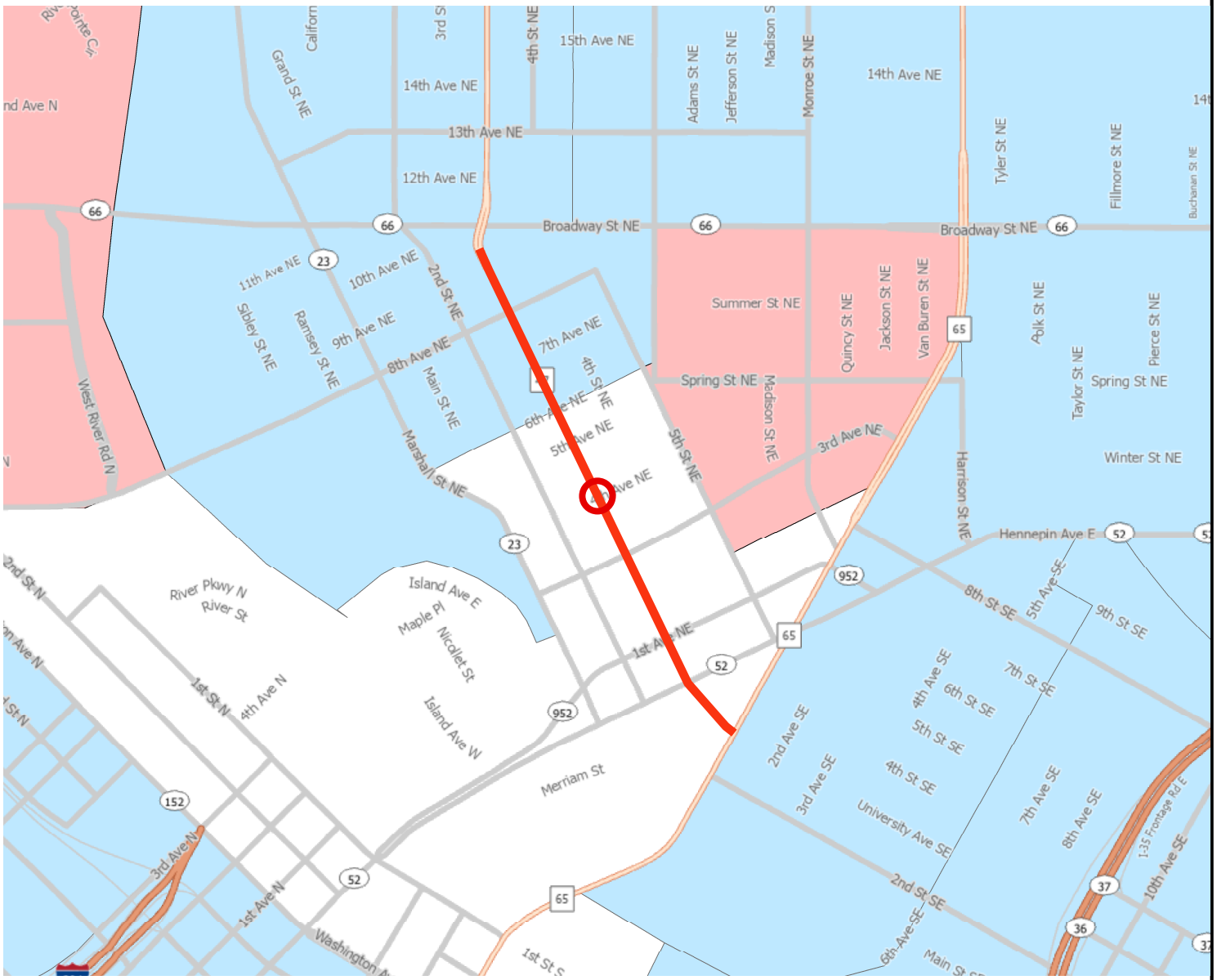
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: University Avenue Complete Streets | Map ID: 1700498108991

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 3350

Project located in census tract(s) that are ABOVE the regional average for population in poverty or population of color.



Points

Lines

Area of Concentrated Poverty

Regional Environmental Justice Area

0 0.15 0.3 0.6 0.9 1.2 Miles

Created: 11/20/2023
LandscapeRSA2

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METROPOLITAN COUNCIL

Dec-23
TH 47 (University Ave NE)
Complete Streets

ID #	Intersection
397	TH 47 (University Ave NE) at TH 65 (Central Ave NE)
370	TH 47 (University Ave NE) at E Hennepin Ave
937	TH 47 (University Ave NE) at 1st Ave NE
102	TH 47 (University Ave NE) at 3rd Ave NE
877	TH 47 (University Ave NE) at 5th Ave NE
900	TH 47 (University Ave NE) at 8th Ave NE

Existing Conditions

Intersection ID #	397	370	937	102	877	900	Total
Volumes (vph)	2041	2081	2531	1259	1194	1388	10494
Delay (sec/veh)	26	19	17	9	2	16	89
Total Delay (seconds)	53066	39539	43027	11331	2388	22208	171559

Emissions	397	370	937	102	877	900	
CO (kg)	1.93	1.74	2.84	0.86	0.79	1.32	9.48
NOx (kg)	0.37	0.34	0.55	0.17	0.15	0.26	1.84
VOC (kg)	0.45	0.4	0.66	0.20	0.18	0.30	2.19
				Emissions Network Total			13.51

Proposed Build Conditions

Intersection ID #	397	370	937	102	877	900	Total
Volumes (vph)	2041	2081	2531	1259	1194	1388	10494
Delay (sec/veh)	38	20	23	16	5	16	118
Total Delay (seconds)	77558	41620	58213	20144	5970	22208	225713

Emissions	397	370	937	102	877	900	
CO (kg)	2.32	1.77	3.13	1.14	0.93	1.27	10.56
NOx (kg)	0.45	0.34	0.61	0.22	0.18	0.25	2.05
VOC (kg)	0.54	0.41	0.72	0.26	0.22	0.29	2.44
				Emissions Network Total			15.05

Total Delay Reduction (seconds)	-54154
Total Emissions Reduction (kg)	-1.54

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Future Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1783	0	0	1827	0	0	3339	0	0	3517	0
Flt Permitted		0.983			0.864			0.914			0.944	
Satd. Flow (perm)	0	1758	0	0	1612	0	0	3058	0	0	3324	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			7			8			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	64	0	0	92	0	0	279	0	0	884	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	35.0	35.0		35.0	35.0		75.0	75.0		75.0	75.0	
Total Lost Time (s)		5.5			5.5			5.5			5.5	
Act Effct Green (s)		12.7			12.7			90.5			90.5	
Actuated g/C Ratio		0.12			0.12			0.82			0.82	
v/c Ratio		0.28			0.48			0.11			0.32	
Control Delay		30.3			50.0			2.5			0.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.3			50.0			2.5			0.9	
LOS		C			D			A			A	
Approach Delay		30.3			50.0			2.5			0.9	
Approach LOS		C			D			A			A	

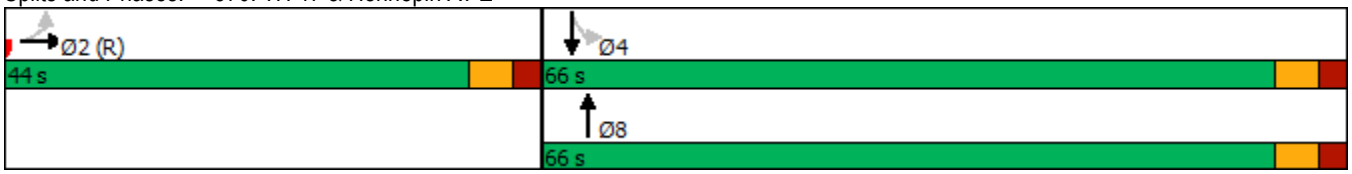
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 68 (62%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Future Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4636	0	0	0	0	0	3446	0	0	3550	0
Flt Permitted		0.998									0.903	
Satd. Flow (perm)	0	4636	0	0	0	0	0	3446	0	0	3221	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		142						16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	754	0	0	0	0	0	112	0	0	876	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Total Split (s)	44.0	44.0						66.0		66.0	66.0	
Total Lost Time (s)		6.0						6.0			6.0	
Act Effct Green (s)		38.0						60.0			60.0	
Actuated g/C Ratio		0.35						0.55			0.55	
v/c Ratio		0.45						0.06			0.50	
Control Delay		23.2						18.6			6.2	
Queue Delay		0.0						0.0			0.1	
Total Delay		23.2						18.6			6.2	
LOS		C						B			A	
Approach Delay		23.2						18.6			6.2	
Approach LOS		C						B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 36 (33%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

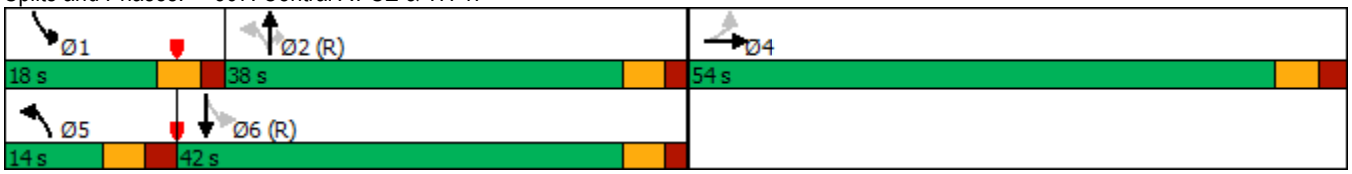
Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Future Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	3423	0	0	0	0	0	3231	1482	1805	1784	0
Flt Permitted		0.998						0.541		0.578		
Satd. Flow (perm)	0	3423	0	0	0	0	0	1766	1482	1098	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32							89		3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	0	1208	0	0	0	0	0	284	64	132	820	0
Turn Type	Perm	NA					pm+pt	NA	Perm	custom	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	1 6		
Total Split (s)	54.0	54.0					14.0	38.0	38.0	18.0	42.0	
Total Lost Time (s)		6.0						5.5	5.5	5.5	5.5	
Act Effct Green (s)		48.0						41.0	32.5	49.0	36.5	
Actuated g/C Ratio		0.44						0.37	0.30	0.45	0.33	
v/c Ratio		0.80						0.37	0.13	0.23	1.38	
Control Delay		39.9						19.7	3.5	18.6	213.7	
Queue Delay		0.1						0.0	0.0	0.0	0.0	
Total Delay		40.0						19.7	3.5	18.6	213.7	
LOS		D						B	A	B	F	
Approach Delay		40.0						16.7			186.7	
Approach LOS		D						B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 12 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 92.4		Intersection LOS: F	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Future Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1597	0	0	1800	0	0	3395	0	0	3536	0
Flt Permitted		0.952			0.952			0.920				
Satd. Flow (perm)	0	1533	0	0	1727	0	0	3129	0	0	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			8			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	24	0	0	24	0	0	188	0	0	961	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	28.0	28.0		28.0	28.0		82.0	82.0		82.0	82.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Act Effct Green (s)		10.0			10.0			89.5			89.5	
Actuated g/C Ratio		0.09			0.09			0.81			0.81	
v/c Ratio		0.16			0.15			0.07			0.33	
Control Delay		32.9			37.1			3.4			0.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		32.9			37.1			3.4			0.8	
LOS		C			D			A			A	
Approach Delay		32.9			37.1			3.4			0.8	
Approach LOS		C			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 2.6		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Future Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1612	1625	0	0	1858	0	0	3311	0	0	3472	0
Flt Permitted	0.704				0.968			0.798			0.954	
Satd. Flow (perm)	1194	1625	0	0	1810	0	0	2661	0	0	3313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			6			3			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			344	
Travel Time (s)		17.3			18.5			28.2			7.8	
Lane Group Flow (vph)	112	100	0	0	100	0	0	228	0	0	853	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	39.0	39.0		39.0	39.0		71.0	71.0		71.0	71.0	
Total Lost Time (s)	5.5	5.5			5.5			5.5			5.5	
Act Effct Green (s)	33.5	33.5			33.5			65.5			65.5	
Actuated g/C Ratio	0.30	0.30			0.30			0.60			0.60	
v/c Ratio	0.31	0.19			0.18			0.14			0.43	
Control Delay	32.3	13.9			27.5			7.9			12.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	32.3	13.9			27.5			7.9			12.5	
LOS	C	B			C			A			B	
Approach Delay		23.6			27.5			7.9			12.5	
Approach LOS		C			C			A			B	

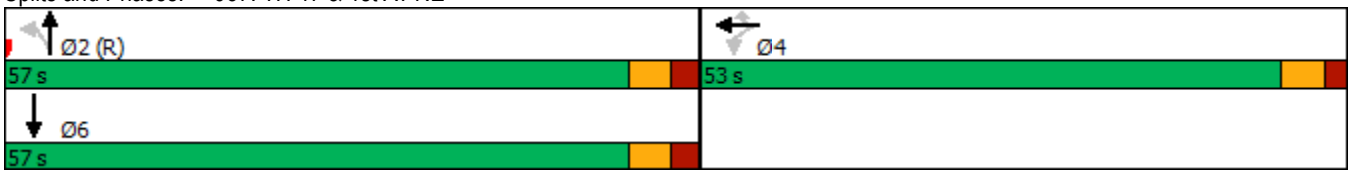
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 11 (10%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 900: TH 47 & 8th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Future Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4640	1298	0	3355	0	0	3426	0
Flt Permitted					0.996			0.795				
Satd. Flow (perm)	0	0	0	0	4640	1298	0	2692	0	0	3426	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2	123					21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1266	123	0	108	0	0	927	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2					
Total Split (s)				53.0	53.0	53.0	57.0	57.0			57.0	
Total Lost Time (s)					5.5	5.5		6.0			6.0	
Act Effct Green (s)					47.5	47.5		51.0			51.0	
Actuated g/C Ratio					0.43	0.43		0.46			0.46	
v/c Ratio					0.63	0.20		0.09			0.58	
Control Delay					26.1	4.2		12.9			16.2	
Queue Delay					0.0	0.0		0.0			0.0	
Total Delay					26.1	4.2		12.9			16.2	
LOS					C	A		B			B	
Approach Delay					24.2			12.9			16.2	
Approach LOS					C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 87 (79%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	57	218	820	1133
Control Delay / Veh (s/v)	30	50	2	1	5
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	50	2	1	5
Total Delay (hr)	0	1	0	0	1
Stops / Veh	0.55	0.84	0.20	0.03	0.12
Stops (#)	21	48	43	25	137
Average Speed (mph)	11	9	26	29	25
Total Travel Time (hr)	1	1	1	6	9
Distance Traveled (mi)	6	10	33	166	214
Fuel Consumed (gal)	1	1	2	7	11
Fuel Economy (mpg)	NA	7.7	19.4	23.3	20.1
CO Emissions (kg)	0.04	0.09	0.12	0.50	0.74
NOx Emissions (kg)	0.01	0.02	0.02	0.10	0.14
VOC Emissions (kg)	0.01	0.02	0.03	0.12	0.17
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	667	86	799	1552
Control Delay / Veh (s/v)	23	19	6	14
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	19	6	14
Total Delay (hr)	4	0	1	6
Stops / Veh	0.61	0.50	0.17	0.37
Stops (#)	406	43	132	581
Average Speed (mph)	12	13	18	14
Total Travel Time (hr)	7	1	3	11
Distance Traveled (mi)	86	10	62	158
Fuel Consumed (gal)	9	1	4	14
Fuel Economy (mpg)	9.6	NA	14.5	11.1
CO Emissions (kg)	0.63	0.07	0.30	0.99
NOx Emissions (kg)	0.12	0.01	0.06	0.19
VOC Emissions (kg)	0.14	0.02	0.07	0.23
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	986	240	800	2026
Control Delay / Veh (s/v)	40	17	188	96
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	40	17	188	96
Total Delay (hr)	11	1	42	54
Stops / Veh	0.84	0.54	0.74	0.77
Stops (#)	832	129	594	1555
Average Speed (mph)	8	14	1	3
Total Travel Time (hr)	15	2	43	60
Distance Traveled (mi)	111	31	31	173
Fuel Consumed (gal)	17	3	35	55
Fuel Economy (mpg)	6.4	11.0	0.9	3.1
CO Emissions (kg)	1.20	0.20	2.46	3.86
NOx Emissions (kg)	0.23	0.04	0.48	0.75
VOC Emissions (kg)	0.28	0.05	0.57	0.89
Unserved Vehicles (#)	0	0	192	192
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	11	9	172	808	1000
Control Delay / Veh (s/v)	33	37	3	1	2
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	37	3	1	2
Total Delay (hr)	0	0	0	0	1
Stops / Veh	0.64	0.78	0.31	0.04	0.10
Stops (#)	7	7	53	34	101
Average Speed (mph)	10	10	26	29	28
Total Travel Time (hr)	0	0	1	7	8
Distance Traveled (mi)	2	1	35	190	228
Fuel Consumed (gal)	0	0	2	8	10
Fuel Economy (mpg)	NA	NA	18.9	23.3	22.1
CO Emissions (kg)	0.01	0.01	0.13	0.57	0.72
NOx Emissions (kg)	0.00	0.00	0.03	0.11	0.14
VOC Emissions (kg)	0.00	0.00	0.03	0.13	0.17
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	166	68	194	818	1246
Control Delay / Veh (s/v)	24	28	8	13	14
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	24	28	8	13	14
Total Delay (hr)	1	1	0	3	5
Stops / Veh	0.57	0.68	0.38	0.50	0.50
Stops (#)	95	46	74	408	623
Average Speed (mph)	13	12	23	12	14
Total Travel Time (hr)	2	1	2	5	9
Distance Traveled (mi)	24	11	46	53	133
Fuel Consumed (gal)	2	1	3	7	13
Fuel Economy (mpg)	10.3	9.8	17.6	8.2	10.7
CO Emissions (kg)	0.16	0.07	0.18	0.46	0.88
NOx Emissions (kg)	0.03	0.01	0.04	0.09	0.17
VOC Emissions (kg)	0.04	0.02	0.04	0.11	0.20
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1185	97	837	2119
Control Delay / Veh (s/v)	24	13	16	21
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	24	13	16	21
Total Delay (hr)	8	0	4	12
Stops / Veh	0.70	0.38	0.73	0.70
Stops (#)	832	37	609	1478
Average Speed (mph)	18	13	16	17
Total Travel Time (hr)	19	1	8	28
Distance Traveled (mi)	341	8	127	476
Fuel Consumed (gal)	25	1	11	37
Fuel Economy (mpg)	13.9	NA	11.2	13.0
CO Emissions (kg)	1.72	0.05	0.79	2.56
NOx Emissions (kg)	0.33	0.01	0.15	0.50
VOC Emissions (kg)	0.40	0.01	0.18	0.59
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	31
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	31
Total Delay (hr)	79
Stops / Veh	0.49
Stops (#)	4475
Average Speed (mph)	11
Total Travel Time (hr)	125
Distance Traveled (mi)	1382
Fuel Consumed (gal)	140
Fuel Economy (mpg)	9.9
CO Emissions (kg)	9.76
NOx Emissions (kg)	1.90
VOC Emissions (kg)	2.26
Unserved Vehicles (#)	192
Vehicles in dilemma zone (#)	0
Performance Index	91.5

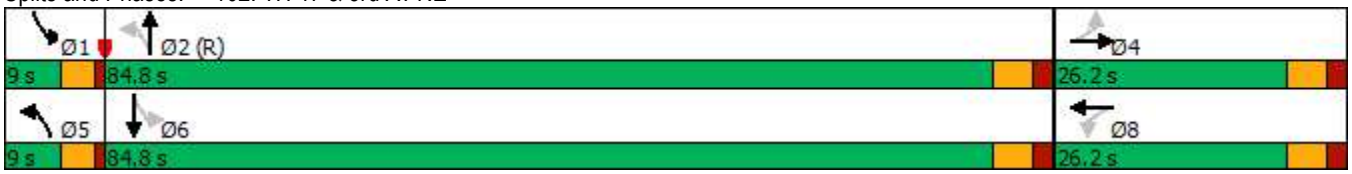
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑			↑
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Satd. Flow (prot)	0	0	1905	0	0	1905
Flt Permitted						
Satd. Flow (perm)	0	0	1905	0	0	1905
Link Speed (mph)	30		30			30
Link Distance (ft)	73		657			585
Travel Time (s)	1.7		14.9			13.3
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 0.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Future Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1783	0	0	1827	0	1504	1768	0	1641	1856	0
Flt Permitted		0.980			0.849		0.255			0.594		
Satd. Flow (perm)	0	1752	0	0	1584	0	404	1768	0	1026	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			5			4			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	64	0	0	92	0	12	267	0	20	864	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	26.2	26.2		26.2	26.2		9.0	84.8		9.0	84.8	
Total Lost Time (s)		5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)		13.3			13.3		95.5	91.6		95.7	91.7	
Actuated g/C Ratio		0.11			0.11		0.80	0.76		0.80	0.76	
v/c Ratio		0.29			0.51		0.03	0.20		0.02	0.61	
Control Delay		32.8			56.9		3.0	4.9		0.4	4.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		32.8			56.9		3.0	4.9		0.4	4.8	
LOS		C			E		A	A		A	A	
Approach Delay		32.8			56.9			4.9			4.7	
Approach LOS		C			E			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

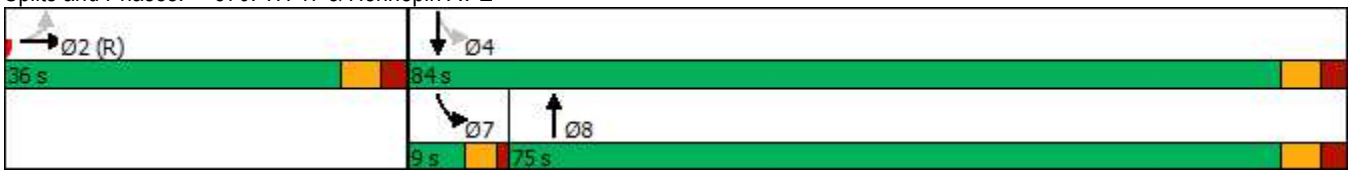
Splits and Phases: 102: TH 47 & 3rd Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Future Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	250		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4636	0	0	0	0	0	1817	0	1752	1881	0
Flt Permitted		0.998								0.641		
Satd. Flow (perm)	0	4636	0	0	0	0	0	1817	0	1182	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113						12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	754	0	0	0	0	0	112	0	85	791	0
Turn Type	Perm	NA						NA		pm+pt	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2									4		
Total Split (s)	36.0	36.0						75.0		9.0	84.0	
Total Lost Time (s)		6.0						6.0		4.0	6.0	
Act Effct Green (s)		42.3						58.5		67.7	65.7	
Actuated g/C Ratio		0.35						0.49		0.56	0.55	
v/c Ratio		0.44						0.13		0.12	0.77	
Control Delay		27.8						27.8		4.1	10.9	
Queue Delay		0.0						0.0		0.0	2.8	
Total Delay		27.9						27.8		4.1	13.7	
LOS		C						C		A	B	
Approach Delay		27.9						27.8			12.8	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Future Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	0		0	0		80	0		0
Storage Lanes	1		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1805	1801	0	0	0	0	1719	1696	1482	1805	1784	0
Flt Permitted	0.950						0.094			0.509		
Satd. Flow (perm)	1805	1801	0	0	0	0	170	1696	1482	967	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14							64		3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	56	1152	0	0	0	0	56	228	64	132	820	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	62.0	62.0					9.0	48.0	48.0	10.0	49.0	
Total Lost Time (s)	6.0	6.0					4.0	5.5	5.5	4.0	5.5	
Act Effct Green (s)	56.0	56.0					49.0	42.5	42.5	51.6	45.3	
Actuated g/C Ratio	0.47	0.47					0.41	0.35	0.35	0.43	0.38	
v/c Ratio	0.07	1.36					0.42	0.38	0.11	0.29	1.21	
Control Delay	17.4	192.8					28.7	31.3	6.8	21.9	144.2	
Queue Delay	0.0	0.0					0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	192.8					28.7	31.3	6.8	21.9	144.2	
LOS	B	F					C	C	A	C	F	
Approach Delay		184.7						26.4			127.2	
Approach LOS		F						C			F	

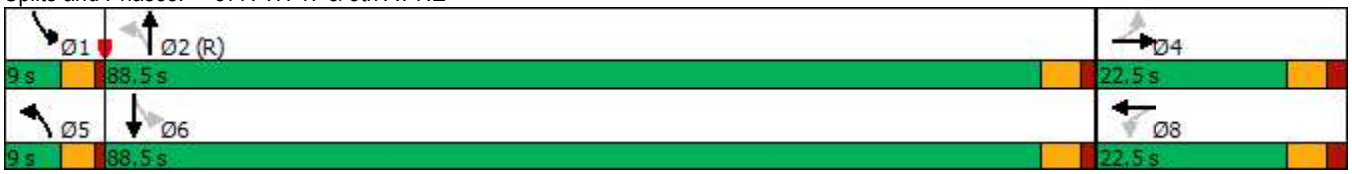
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 88 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay: 140.9		Intersection LOS: F	
Intersection Capacity Utilization 105.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Future Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1597	0	0	1800	0	1805	1784	0	1900	1861	0
Flt Permitted		0.951			0.951		0.222					
Satd. Flow (perm)	0	1531	0	0	1726	0	422	1784	0	1900	1861	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			657	
Travel Time (s)		17.3			18.1			24.3			14.9	
Lane Group Flow (vph)	0	24	0	0	24	0	8	180	0	0	961	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	22.5	22.5		22.5	22.5		9.0	88.5		9.0	88.5	
Total Lost Time (s)		5.5			5.5		4.0	5.0		4.0	5.0	
Act Effct Green (s)		10.0			10.0		100.5	99.5			97.5	
Actuated g/C Ratio		0.08			0.08		0.84	0.83			0.81	
v/c Ratio		0.17			0.16		0.02	0.12			0.64	
Control Delay		36.1			41.1		1.5	2.5			7.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		36.1			41.1		1.5	2.5			7.3	
LOS		D			D		A	A			A	
Approach Delay		36.1			41.1			2.4			7.3	
Approach LOS		D			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 59.6%		ICU Level of Service B	
Analysis Period (min) 15			

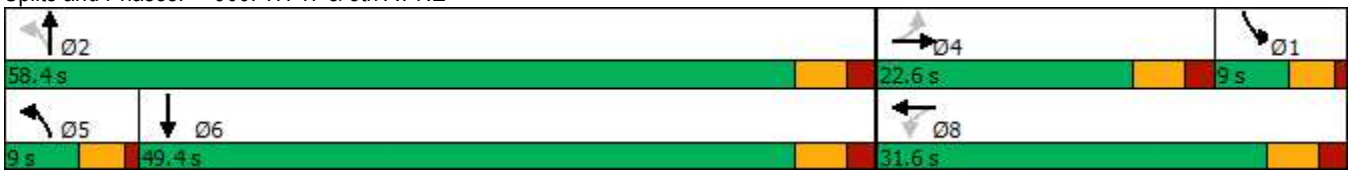
Splits and Phases: 877: TH 47 & 5th Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Future Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	250		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1612	1625	0	0	1858	0	1805	1734	0	1805	1827	0
Flt Permitted	0.736				0.961		0.171			0.950		
Satd. Flow (perm)	1249	1625	0	0	1797	0	325	1734	0	1805	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			8			2			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			585			344	
Travel Time (s)		17.3			18.5			13.3			7.8	
Lane Group Flow (vph)	112	100	0	0	100	0	32	196	0	4	849	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		custom	NA	
Protected Phases		4			8!		5	2		1!	6	
Permitted Phases	4			8!			2			1!		
Total Split (s)	22.6	22.6		31.6	31.6		9.0	58.4		9.0	49.4	
Total Lost Time (s)	5.5	5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)	12.0	12.0			13.6		57.5	56.0		5.0	52.6	
Actuated g/C Ratio	0.15	0.15			0.17		0.71	0.69		0.06	0.65	
v/c Ratio	0.61	0.34			0.32		0.10	0.16		0.04	0.71	
Control Delay	45.7	17.6			27.9		5.8	5.8		38.5	17.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	45.7	17.6			27.9		5.8	5.8		38.5	17.1	
LOS	D	B			C		A	A		D	B	
Approach Delay		32.4			27.9			5.8			17.2	
Approach LOS		C			C			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 80.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			
! Phase conflict between lane groups.			

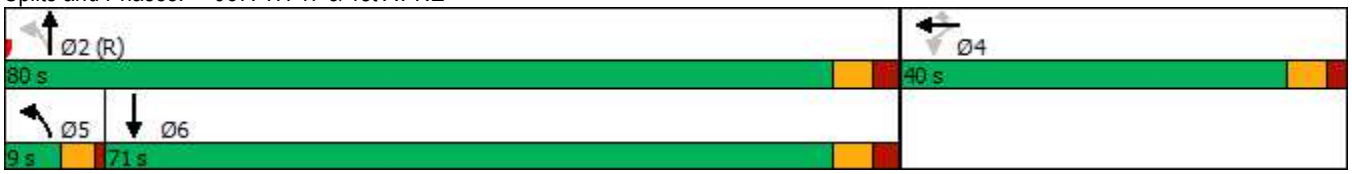
Splits and Phases: 900: TH 47 & 8th Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Future Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	250		0	250		0
Storage Lanes	0		0	0		1	1		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4640	1298	1719	1776	0	0	1807	0
Flt Permitted					0.996		0.085					
Satd. Flow (perm)	0	0	0	0	4640	1298	154	1776	0	0	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1	123					10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1266	123	20	88	0	0	927	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		5	2			6	
Permitted Phases				4		4	2					
Total Split (s)				40.0	40.0	40.0	9.0	80.0			71.0	
Total Lost Time (s)					5.5	5.5	4.0	6.0			6.0	
Act Effct Green (s)					34.4	34.4	76.1	74.1			70.5	
Actuated g/C Ratio					0.29	0.29	0.63	0.62			0.59	
v/c Ratio					0.95	0.27	0.12	0.08			0.87	
Control Delay					58.0	7.2	9.1	6.0			25.3	
Queue Delay					0.0	0.0	0.0	0.0			1.4	
Total Delay					58.0	7.2	9.1	6.0			26.7	
LOS					E	A	A	A			C	
Approach Delay					53.5			6.6			26.7	
Approach LOS					D			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 41.1		Intersection LOS: D	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



1: TH 47

Direction	All
Future Volume (vph)	0
Control Delay / Veh (s/v)	
Queue Delay / Veh (s/v)	
Total Delay / Veh (s/v)	
Total Delay (hr)	0
Stops / Veh	
Stops (#)	0
Average Speed (mph)	0
Total Travel Time (hr)	0
Distance Traveled (mi)	0
Fuel Consumed (gal)	0
Fuel Economy (mpg)	NA
CO Emissions (kg)	0.00
NOx Emissions (kg)	0.00
VOC Emissions (kg)	0.00
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	57	218	820	1133
Control Delay / Veh (s/v)	33	57	5	5	8
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	57	5	5	8
Total Delay (hr)	0	1	0	1	3
Stops / Veh	0.53	0.88	0.25	0.33	0.35
Stops (#)	20	50	54	268	392
Average Speed (mph)	11	8	24	25	22
Total Travel Time (hr)	1	1	1	7	10
Distance Traveled (mi)	6	10	33	166	214
Fuel Consumed (gal)	1	1	2	9	13
Fuel Economy (mpg)	NA	7.2	17.6	18.2	16.6
CO Emissions (kg)	0.04	0.09	0.13	0.64	0.90
NOx Emissions (kg)	0.01	0.02	0.03	0.12	0.18
VOC Emissions (kg)	0.01	0.02	0.03	0.15	0.21
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	667	86	799	1552
Control Delay / Veh (s/v)	28	28	10	19
Queue Delay / Veh (s/v)	0	0	3	1
Total Delay / Veh (s/v)	28	28	13	20
Total Delay (hr)	5	1	3	9
Stops / Veh	0.65	0.83	0.42	0.54
Stops (#)	435	71	338	844
Average Speed (mph)	11	10	13	11
Total Travel Time (hr)	8	1	5	14
Distance Traveled (mi)	86	10	62	158
Fuel Consumed (gal)	10	1	7	18
Fuel Economy (mpg)	8.9	7.6	9.5	9.0
CO Emissions (kg)	0.68	0.09	0.46	1.23
NOx Emissions (kg)	0.13	0.02	0.09	0.24
VOC Emissions (kg)	0.16	0.02	0.11	0.28
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	986	240	800	2026
Control Delay / Veh (s/v)	187	27	128	145
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	187	27	128	145
Total Delay (hr)	51	2	29	81
Stops / Veh	0.66	0.61	0.75	0.69
Stops (#)	654	146	600	1400
Average Speed (mph)	2	11	1	2
Total Travel Time (hr)	55	3	30	87
Distance Traveled (mi)	111	31	31	173
Fuel Consumed (gal)	46	3	25	74
Fuel Economy (mpg)	2.4	9.1	1.2	2.3
CO Emissions (kg)	3.19	0.24	1.78	5.21
NOx Emissions (kg)	0.62	0.05	0.35	1.01
VOC Emissions (kg)	0.74	0.05	0.41	1.21
Unserved Vehicles (#)	251	0	123	374
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	11	9	172	808	1000
Control Delay / Veh (s/v)	36	41	2	7	7
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	36	41	2	7	7
Total Delay (hr)	0	0	0	2	2
Stops / Veh	0.64	0.67	0.25	0.38	0.36
Stops (#)	7	6	43	304	360
Average Speed (mph)	10	9	27	20	21
Total Travel Time (hr)	0	0	1	5	7
Distance Traveled (mi)	2	1	35	101	138
Fuel Consumed (gal)	0	0	2	7	9
Fuel Economy (mpg)	NA	NA	19.8	14.3	15.2
CO Emissions (kg)	0.01	0.01	0.12	0.49	0.64
NOx Emissions (kg)	0.00	0.00	0.02	0.10	0.12
VOC Emissions (kg)	0.00	0.00	0.03	0.11	0.15
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	166	68	194	818	1246
Control Delay / Veh (s/v)	33	28	6	17	18
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	28	6	17	18
Total Delay (hr)	2	1	0	4	6
Stops / Veh	0.69	0.75	0.34	0.59	0.57
Stops (#)	115	51	66	483	715
Average Speed (mph)	10	12	21	9	11
Total Travel Time (hr)	2	1	1	6	10
Distance Traveled (mi)	24	11	21	53	109
Fuel Consumed (gal)	3	1	1	8	13
Fuel Economy (mpg)	8.7	9.6	14.5	6.9	8.4
CO Emissions (kg)	0.19	0.08	0.10	0.54	0.91
NOx Emissions (kg)	0.04	0.01	0.02	0.10	0.18
VOC Emissions (kg)	0.04	0.02	0.02	0.12	0.21
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1185	97	837	2119
Control Delay / Veh (s/v)	54	7	25	40
Queue Delay / Veh (s/v)	0	0	1	1
Total Delay / Veh (s/v)	54	7	27	41
Total Delay (hr)	18	0	6	24
Stops / Veh	0.85	0.35	0.72	0.78
Stops (#)	1009	34	602	1645
Average Speed (mph)	12	18	12	12
Total Travel Time (hr)	29	0	10	40
Distance Traveled (mi)	341	8	127	476
Fuel Consumed (gal)	33	1	13	46
Fuel Economy (mpg)	10.5	NA	9.7	10.3
CO Emissions (kg)	2.28	0.04	0.92	3.24
NOx Emissions (kg)	0.44	0.01	0.18	0.63
VOC Emissions (kg)	0.53	0.01	0.21	0.75
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	49
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	50
Total Delay (hr)	125
Stops / Veh	0.59
Stops (#)	5356
Average Speed (mph)	8
Total Travel Time (hr)	167
Distance Traveled (mi)	1268
Fuel Consumed (gal)	173
Fuel Economy (mpg)	7.3
CO Emissions (kg)	12.13
NOx Emissions (kg)	2.36
VOC Emissions (kg)	2.81
Unserved Vehicles (#)	374
Vehicles in dilemma zone (#)	0
Performance Index	140.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Future Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1834	0	0	1726	0	0	3495	0	0	3336	0
Flt Permitted		0.984			0.897			0.924			0.882	
Satd. Flow (perm)	0	1812	0	0	1573	0	0	3236	0	0	2951	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			28			17			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	52	0	0	124	0	0	940	0	0	367	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	35.0	35.0		35.0	35.0		75.0	75.0		75.0	75.0	
Total Lost Time (s)		5.5			5.5			5.5			5.5	
Act Effct Green (s)		29.5			29.5			69.5			69.5	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.11			0.28			0.46			0.20	
Control Delay		25.4			26.5			7.5			3.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.4			26.5			7.5			3.7	
LOS		C			C			A			A	
Approach Delay		25.4			26.5			7.5			3.7	
Approach LOS		C			C			A			A	

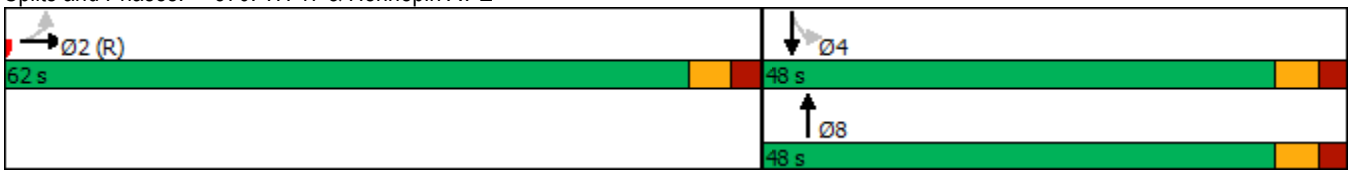
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 75 (68%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Future Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4787	0	0	0	0	0	3524	0	0	3408	0
Flt Permitted		0.995									0.768	
Satd. Flow (perm)	0	4787	0	0	0	0	0	3524	0	0	2641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83						12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	1540	0	0	0	0	0	372	0	0	530	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Total Split (s)	62.0	62.0						48.0		48.0	48.0	
Total Lost Time (s)		6.0						6.0			6.0	
Act Effct Green (s)		56.0						42.0			42.0	
Actuated g/C Ratio		0.51						0.38			0.38	
v/c Ratio		0.62						0.28			0.53	
Control Delay		19.6						10.0			22.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		19.6						10.0			22.5	
LOS		B						A			C	
Approach Delay		19.6						10.0			22.5	
Approach LOS		B						A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Future Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	3447	0	0	0	0	0	3461	1346	1805	1787	0
Flt Permitted		0.995						0.647		0.331		
Satd. Flow (perm)	0	3447	0	0	0	0	0	2266	1346	629	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14							84		16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	0	795	0	0	0	0	0	845	136	100	472	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	39.0	39.0					10.5	59.0	59.0	12.0	60.5	
Total Lost Time (s)		6.0						6.0	6.0	5.5	5.5	
Act Effct Green (s)		33.0						57.6	53.1	61.4	55.0	
Actuated g/C Ratio		0.30						0.52	0.48	0.56	0.50	
v/c Ratio		0.76						0.68	0.20	0.24	0.52	
Control Delay		38.7						20.7	7.6	11.1	20.5	
Queue Delay		0.0						0.0	0.0	0.0	0.0	
Total Delay		38.7						20.7	7.6	11.1	20.5	
LOS		D						C	A	B	C	
Approach Delay		38.7						18.9			18.9	
Approach LOS		D						B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 49 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Future Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1746	0	0	1765	0	0	3522	0	0	3469	0
Flt Permitted					0.912			0.944			0.927	
Satd. Flow (perm)	0	1746	0	0	1632	0	0	3328	0	0	3219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			12			5			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	20	0	0	28	0	0	878	0	0	421	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	28.0	28.0		28.0	28.0		82.0	82.0		82.0	82.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Act Effct Green (s)		10.0			10.0			89.5			89.5	
Actuated g/C Ratio		0.09			0.09			0.81			0.81	
v/c Ratio		0.12			0.18			0.32			0.16	
Control Delay		30.1			34.2			0.4			2.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.1			34.2			0.4			2.2	
LOS		C			C			A			A	
Approach Delay		30.1			34.2			0.4			2.2	
Approach LOS		C			C			A			A	

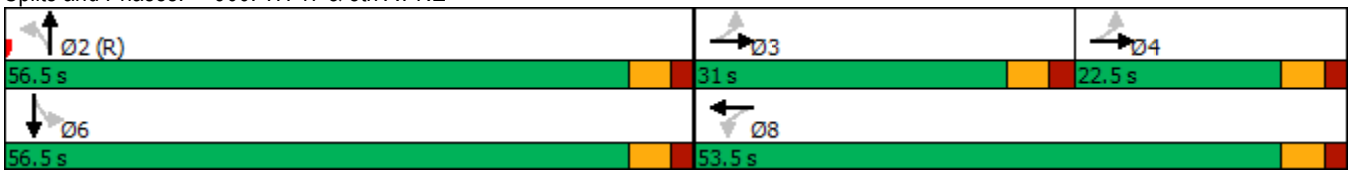
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Future Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1787	1790	0	0	1692	0	0	3524	0	0	3276	0
Flt Permitted	0.702				0.994			0.888			0.927	
Satd. Flow (perm)	1321	1790	0	0	1685	0	0	3142	0	0	3043	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			35			2			25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			390	
Travel Time (s)		17.3			18.5			28.2			8.9	
Lane Group Flow (vph)	224	144	0	0	116	0	0	734	0	0	389	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3 4			8			2			6	
Permitted Phases	3 4			8			2			6		
Total Split (s)				53.5	53.5		56.5	56.5		56.5	56.5	
Total Lost Time (s)					5.5			5.5			5.5	
Act Effct Green (s)	48.0	48.0			48.0			51.0			51.0	
Actuated g/C Ratio	0.44	0.44			0.44			0.46			0.46	
v/c Ratio	0.39	0.18			0.15			0.50			0.27	
Control Delay	23.6	16.7			13.6			12.2			17.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	23.6	16.7			13.6			12.2			17.5	
LOS	C	B			B			B			B	
Approach Delay		20.9			13.6			12.2			17.5	
Approach LOS		C			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 34 (31%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 900: TH 47 & 8th Av NE



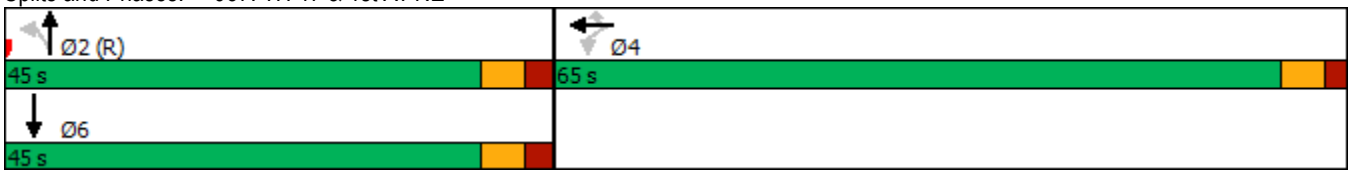
Lane Group	Ø3	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Total Split (s)	31.0	22.5
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Future Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4766	1348	0	3521	0	0	3365	0
Flt Permitted					0.995			0.729				
Satd. Flow (perm)	0	0	0	0	4766	1348	0	2590	0	0	3365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6	296					16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1559	392	0	440	0	0	445	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2					
Total Split (s)				65.0	65.0	65.0	45.0	45.0			45.0	
Total Lost Time (s)					5.5	5.5		6.0			6.0	
Act Effct Green (s)					59.5	59.5		39.0			39.0	
Actuated g/C Ratio					0.54	0.54		0.35			0.35	
v/c Ratio					0.60	0.45		0.48			0.37	
Control Delay					18.4	5.5		19.1			22.0	
Queue Delay					0.0	0.0		0.0			0.0	
Total Delay					18.4	5.5		19.1			22.0	
LOS					B	A		B			C	
Approach Delay					15.8			19.1			22.0	
Approach LOS					B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	61	791	349	1239
Control Delay / Veh (s/v)	25	26	7	4	8
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	25	26	7	4	8
Total Delay (hr)	0	0	2	0	3
Stops / Veh	0.61	0.61	0.29	0.14	0.27
Stops (#)	23	37	229	48	337
Average Speed (mph)	12	13	21	26	21
Total Travel Time (hr)	0	1	6	3	10
Distance Traveled (mi)	6	10	120	71	206
Fuel Consumed (gal)	1	1	7	3	12
Fuel Economy (mpg)	NA	NA	16.2	20.6	16.7
CO Emissions (kg)	0.04	0.07	0.52	0.24	0.86
NOx Emissions (kg)	0.01	0.01	0.10	0.05	0.17
VOC Emissions (kg)	0.01	0.02	0.12	0.06	0.20
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	1257	327	497	2081
Control Delay / Veh (s/v)	20	10	23	19
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	20	10	23	19
Total Delay (hr)	7	1	3	11
Stops / Veh	0.65	0.55	0.61	0.63
Stops (#)	822	180	301	1303
Average Speed (mph)	13	17	9	13
Total Travel Time (hr)	12	2	4	19
Distance Traveled (mi)	163	37	39	238
Fuel Consumed (gal)	16	3	6	25
Fuel Economy (mpg)	10.0	11.6	7.0	9.5
CO Emissions (kg)	1.14	0.22	0.39	1.74
NOx Emissions (kg)	0.22	0.04	0.08	0.34
VOC Emissions (kg)	0.26	0.05	0.09	0.40
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	650	882	510	2042
Control Delay / Veh (s/v)	39	19	19	25
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	39	19	19	25
Total Delay (hr)	7	5	3	14
Stops / Veh	0.92	0.74	0.60	0.76
Stops (#)	596	649	306	1551
Average Speed (mph)	8	13	6	10
Total Travel Time (hr)	9	8	3	21
Distance Traveled (mi)	73	113	20	206
Fuel Consumed (gal)	11	12	4	28
Fuel Economy (mpg)	6.4	9.7	4.5	7.5
CO Emissions (kg)	0.80	0.82	0.31	1.93
NOx Emissions (kg)	0.16	0.16	0.06	0.37
VOC Emissions (kg)	0.18	0.19	0.07	0.45
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	13	15	779	387	1194
Control Delay / Veh (s/v)	30	34	0	2	2
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	34	0	2	2
Total Delay (hr)	0	0	0	0	1
Stops / Veh	0.62	0.67	0.01	0.17	0.08
Stops (#)	8	10	10	65	93
Average Speed (mph)	11	10	29	28	28
Total Travel Time (hr)	0	0	5	3	9
Distance Traveled (mi)	2	2	158	91	253
Fuel Consumed (gal)	0	0	7	4	11
Fuel Economy (mpg)	NA	NA	23.8	21.3	22.3
CO Emissions (kg)	0.01	0.02	0.46	0.30	0.79
NOx Emissions (kg)	0.00	0.00	0.09	0.06	0.15
VOC Emissions (kg)	0.00	0.00	0.11	0.07	0.18
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	293	71	673	351	1388
Control Delay / Veh (s/v)	21	14	12	17	15
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	21	14	12	17	15
Total Delay (hr)	2	0	2	2	6
Stops / Veh	0.60	0.39	0.66	0.55	0.61
Stops (#)	177	28	446	193	844
Average Speed (mph)	14	17	21	10	17
Total Travel Time (hr)	3	1	8	3	14
Distance Traveled (mi)	42	11	158	26	237
Fuel Consumed (gal)	4	1	11	3	19
Fuel Economy (mpg)	10.6	NA	14.9	7.7	12.6
CO Emissions (kg)	0.28	0.06	0.74	0.24	1.32
NOx Emissions (kg)	0.05	0.01	0.14	0.05	0.26
VOC Emissions (kg)	0.06	0.01	0.17	0.05	0.30
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1767	405	360	2532
Control Delay / Veh (s/v)	16	19	22	17
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	16	19	22	17
Total Delay (hr)	8	2	2	12
Stops / Veh	0.55	0.44	0.50	0.52
Stops (#)	967	178	180	1325
Average Speed (mph)	21	10	14	19
Total Travel Time (hr)	25	3	4	32
Distance Traveled (mi)	509	32	55	595
Fuel Consumed (gal)	32	4	5	41
Fuel Economy (mpg)	15.9	8.2	11.2	14.6
CO Emissions (kg)	2.23	0.27	0.34	2.84
NOx Emissions (kg)	0.43	0.05	0.07	0.55
VOC Emissions (kg)	0.52	0.06	0.08	0.66
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	16
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	16
Total Delay (hr)	46
Stops / Veh	0.52
Stops (#)	5453
Average Speed (mph)	17
Total Travel Time (hr)	104
Distance Traveled (mi)	1736
Fuel Consumed (gal)	136
Fuel Economy (mpg)	12.8
CO Emissions (kg)	9.48
NOx Emissions (kg)	1.85
VOC Emissions (kg)	2.20
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	61.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Future Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1834	0	0	1726	0	1805	1842	0	1543	1770	0
Flt Permitted		0.980			0.889		0.512			0.163		
Satd. Flow (perm)	0	1804	0	0	1559	0	973	1842	0	265	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			29			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	52	0	0	124	0	36	904	0	20	347	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	25.8	25.8		25.8	25.8		9.0	65.2		9.0	65.2	
Total Lost Time (s)		5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)		20.3			20.3		68.6	65.1		67.8	63.3	
Actuated g/C Ratio		0.20			0.20		0.69	0.65		0.68	0.63	
v/c Ratio		0.14			0.37		0.05	0.75		0.08	0.31	
Control Delay		27.8			29.7		4.5	19.3		4.1	6.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		27.8			29.7		4.5	19.4		4.1	6.4	
LOS		C			C		A	B		A	A	
Approach Delay		27.8			29.7			18.8			6.3	
Approach LOS		C			C			B			A	

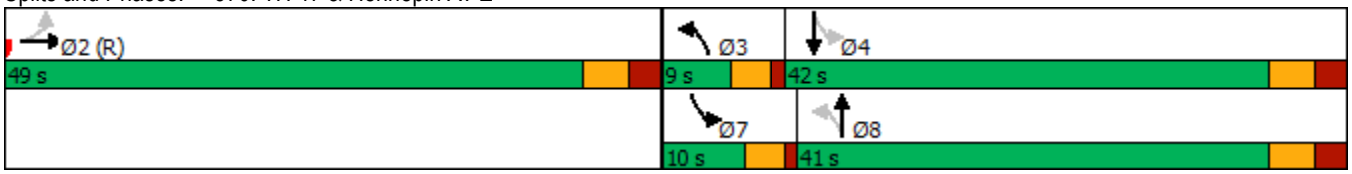
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 70 (70%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Future Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4787	0	0	0	0	1900	1855	0	1583	1845	0
Flt Permitted		0.995								0.226		
Satd. Flow (perm)	0	4787	0	0	0	0	1900	1855	0	377	1845	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79						6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	1540	0	0	0	0	0	372	0	95	435	0
Turn Type	Perm	NA					pm+pt	NA		pm+pt	NA	
Protected Phases		2					3	8		7	4	
Permitted Phases	2						8			4		
Total Split (s)	49.0	49.0					9.0	41.0		10.0	42.0	
Total Lost Time (s)		6.0					4.0	6.0		4.0	6.0	
Act Effct Green (s)		54.2						25.8		35.8	33.8	
Actuated g/C Ratio		0.54						0.26		0.36	0.34	
v/c Ratio		0.59						0.77		0.46	0.70	
Control Delay		16.9						23.5		21.2	26.3	
Queue Delay		0.0						0.0		0.0	0.7	
Total Delay		16.9						23.5		21.2	27.0	
LOS		B						C		C	C	
Approach Delay		16.9						23.5			26.0	
Approach LOS		B						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 56 (56%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

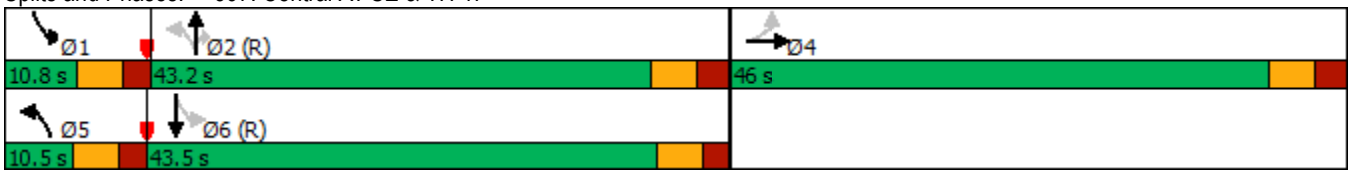
Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Future Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	0		0	0		80	0		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1805	1815	0	0	0	0	0	3461	1346	1805	1787	0
Flt Permitted	0.950							0.585		0.316		
Satd. Flow (perm)	1805	1815	0	0	0	0	0	2049	1346	600	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9							93		14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	84	711	0	0	0	0	0	845	136	100	472	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	46.0	46.0					10.5	43.2	43.2	10.8	43.5	
Total Lost Time (s)	6.0	6.0						6.0	6.0	5.5	5.5	
Act Effct Green (s)	40.0	40.0						43.0	39.4	43.3	38.0	
Actuated g/C Ratio	0.40	0.40						0.43	0.39	0.43	0.38	
v/c Ratio	0.12	0.97						0.90	0.23	0.31	0.69	
Control Delay	15.9	51.1						38.7	9.2	17.0	31.4	
Queue Delay	0.0	0.5						0.0	0.0	0.0	0.0	
Total Delay	15.9	51.5						38.7	9.2	17.0	31.4	
LOS	B	D						D	A	B	C	
Approach Delay		47.8						34.6			28.9	
Approach LOS		D						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 96 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 90.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Future Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1746	0	0	1765	0	1641	1858	0	1805	1826	0
Flt Permitted					0.914		0.493			0.261		
Satd. Flow (perm)	0	1746	0	0	1636	0	852	1858	0	496	1826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			12			2			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	20	0	0	28	0	16	862	0	12	409	0
Turn Type		NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	22.6	22.6		22.6	22.6		9.0	68.4		9.0	68.4	
Total Lost Time (s)		5.5			5.5		4.0	5.0		4.0	5.0	
Act Effct Green (s)		10.0			10.0		79.7	77.5		78.9	75.5	
Actuated g/C Ratio		0.10			0.10		0.80	0.78		0.79	0.76	
v/c Ratio		0.11			0.16		0.02	0.60		0.03	0.30	
Control Delay		27.2			30.8		0.5	2.0		2.1	9.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		27.2			30.8		0.5	2.0		2.1	9.8	
LOS		C			C		A	A		A	A	
Approach Delay		27.2			30.8			2.0			9.6	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 5.3		Intersection LOS: A	
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

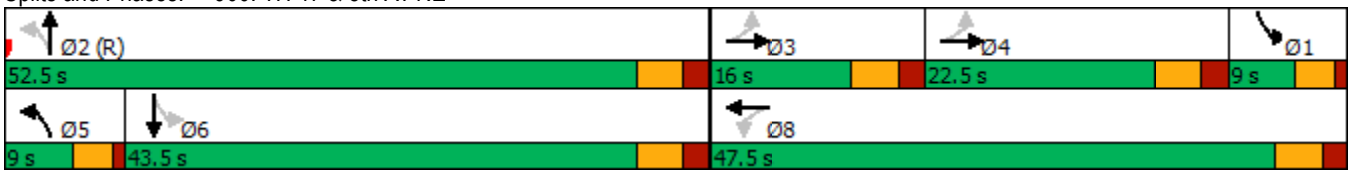
Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Future Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	250		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1787	1790	0	0	1692	0	1805	1858	0	1504	1732	0
Flt Permitted	0.695				0.993		0.409			0.302		
Satd. Flow (perm)	1307	1790	0	0	1684	0	777	1858	0	478	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			38			1			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			390	
Travel Time (s)		17.3			18.5			28.2			8.9	
Lane Group Flow (vph)	224	144	0	0	116	0	52	682	0	12	377	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		3 4			8!		5	2		1!	6	
Permitted Phases	3 4			8!			2			6		
Total Split (s)				47.5	47.5		9.0	52.5		9.0	43.5	
Total Lost Time (s)					5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)	27.5	27.5			29.3		61.2	59.7		57.5	51.5	
Actuated g/C Ratio	0.28	0.28			0.29		0.61	0.60		0.58	0.52	
v/c Ratio	0.62	0.28			0.22		0.10	0.62		0.04	0.42	
Control Delay	39.3	24.7			17.1		2.3	6.2		9.2	18.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	39.3	24.7			17.1		2.3	6.2		9.2	18.8	
LOS	D	C			B		A	A		A	B	
Approach Delay		33.6			17.1			6.0			18.5	
Approach LOS		C			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 34 (34%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

! Phase conflict between lane groups.

Splits and Phases: 900: TH 47 & 8th Av NE



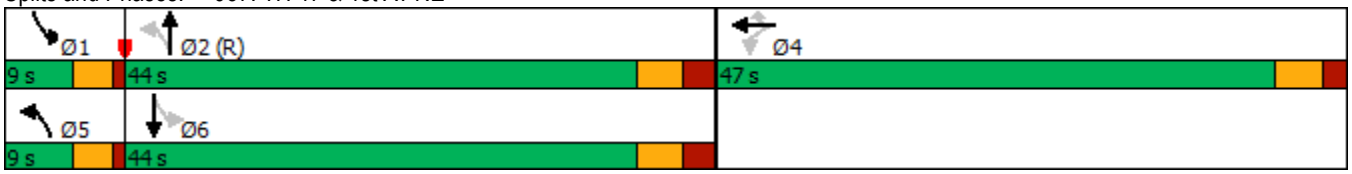
Lane Group	Ø3	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Total Split (s)	16.0	22.5
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Future Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	250		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4766	1348	1805	1863	0	1900	1771	0
Flt Permitted					0.995		0.308					
Satd. Flow (perm)	0	0	0	0	4766	1348	585	1863	0	1900	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5	392					8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1559	392	84	356	0	0	445	0
Turn Type				Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases					4		5	2		1	6	
Permitted Phases				4		4	2			6		
Total Split (s)				47.0	47.0	47.0	9.0	44.0		9.0	44.0	
Total Lost Time (s)					5.5	5.5	4.0	6.0		4.0	6.0	
Act Effct Green (s)					39.2	39.2	51.3	49.3			41.5	
Actuated g/C Ratio					0.39	0.39	0.51	0.49			0.42	
v/c Ratio					0.83	0.51	0.23	0.39			0.60	
Control Delay					31.8	4.6	11.3	12.9			17.0	
Queue Delay					0.0	0.0	0.0	0.3			0.0	
Total Delay					31.8	4.6	11.3	13.2			17.0	
LOS					C	A	B	B			B	
Approach Delay					26.3			12.8			17.0	
Approach LOS					C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	61	791	349	1239
Control Delay / Veh (s/v)	28	30	19	6	16
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	28	30	19	6	16
Total Delay (hr)	0	1	4	1	6
Stops / Veh	0.66	0.66	0.67	0.21	0.54
Stops (#)	25	40	527	73	665
Average Speed (mph)	12	12	15	24	17
Total Travel Time (hr)	0	1	8	3	12
Distance Traveled (mi)	6	10	120	71	206
Fuel Consumed (gal)	1	1	11	4	16
Fuel Economy (mpg)	NA	10.1	11.0	18.8	12.7
CO Emissions (kg)	0.04	0.07	0.76	0.26	1.14
NOx Emissions (kg)	0.01	0.01	0.15	0.05	0.22
VOC Emissions (kg)	0.01	0.02	0.18	0.06	0.26
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	1257	327	497	2081
Control Delay / Veh (s/v)	17	24	25	20
Queue Delay / Veh (s/v)	0	0	1	0
Total Delay / Veh (s/v)	17	24	26	20
Total Delay (hr)	6	2	4	12
Stops / Veh	0.63	0.69	0.53	0.61
Stops (#)	788	225	261	1274
Average Speed (mph)	14	11	8	12
Total Travel Time (hr)	11	3	5	20
Distance Traveled (mi)	163	37	39	238
Fuel Consumed (gal)	15	4	6	25
Fuel Economy (mpg)	10.6	8.5	6.8	9.4
CO Emissions (kg)	1.07	0.30	0.40	1.77
NOx Emissions (kg)	0.21	0.06	0.08	0.34
VOC Emissions (kg)	0.25	0.07	0.09	0.41
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	650	882	510	2042
Control Delay / Veh (s/v)	48	35	29	38
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	48	35	29	38
Total Delay (hr)	9	9	4	21
Stops / Veh	0.83	0.82	0.76	0.81
Stops (#)	539	721	386	1646
Average Speed (mph)	7	9	4	7
Total Travel Time (hr)	11	12	5	28
Distance Traveled (mi)	73	113	20	206
Fuel Consumed (gal)	12	15	6	33
Fuel Economy (mpg)	5.9	7.6	3.4	6.2
CO Emissions (kg)	0.86	1.04	0.42	2.32
NOx Emissions (kg)	0.17	0.20	0.08	0.45
VOC Emissions (kg)	0.20	0.24	0.10	0.54
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	13	15	779	387	1194
Control Delay / Veh (s/v)	27	31	2	10	5
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	27	31	2	10	5
Total Delay (hr)	0	0	0	1	2
Stops / Veh	0.62	0.67	0.05	0.63	0.25
Stops (#)	8	10	37	244	299
Average Speed (mph)	12	11	28	22	25
Total Travel Time (hr)	0	0	6	4	10
Distance Traveled (mi)	2	2	158	91	253
Fuel Consumed (gal)	0	0	7	6	13
Fuel Economy (mpg)	NA	NA	22.5	15.5	19.0
CO Emissions (kg)	0.01	0.02	0.49	0.41	0.93
NOx Emissions (kg)	0.00	0.00	0.10	0.08	0.18
VOC Emissions (kg)	0.00	0.00	0.11	0.09	0.22
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	293	71	673	351	1388
Control Delay / Veh (s/v)	34	17	6	19	16
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	34	17	6	19	16
Total Delay (hr)	3	0	1	2	6
Stops / Veh	0.77	0.48	0.36	0.62	0.52
Stops (#)	227	34	239	217	717
Average Speed (mph)	10	16	25	10	17
Total Travel Time (hr)	4	1	6	3	14
Distance Traveled (mi)	42	11	158	26	237
Fuel Consumed (gal)	5	1	9	4	18
Fuel Economy (mpg)	8.4	NA	18.3	7.2	13.1
CO Emissions (kg)	0.35	0.06	0.61	0.25	1.27
NOx Emissions (kg)	0.07	0.01	0.12	0.05	0.25
VOC Emissions (kg)	0.08	0.01	0.14	0.06	0.29
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1767	404	360	2531
Control Delay / Veh (s/v)	26	13	17	23
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	26	13	17	23
Total Delay (hr)	13	1	2	16
Stops / Veh	0.70	0.37	0.43	0.61
Stops (#)	1237	149	153	1539
Average Speed (mph)	17	13	15	17
Total Travel Time (hr)	30	2	4	36
Distance Traveled (mi)	509	32	55	595
Fuel Consumed (gal)	37	3	4	45
Fuel Economy (mpg)	13.7	9.9	12.6	13.3
CO Emissions (kg)	2.60	0.22	0.30	3.13
NOx Emissions (kg)	0.51	0.04	0.06	0.61
VOC Emissions (kg)	0.60	0.05	0.07	0.72
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	21
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	21
Total Delay (hr)	62
Stops / Veh	0.59
Stops (#)	6140
Average Speed (mph)	14
Total Travel Time (hr)	120
Distance Traveled (mi)	1736
Fuel Consumed (gal)	151
Fuel Economy (mpg)	11.5
CO Emissions (kg)	10.56
NOx Emissions (kg)	2.05
VOC Emissions (kg)	2.45
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	79.4

Dec-23
TH 47 (University Ave NE)
Complete Streets

ID #	Intersection
397	TH 47 (University Ave NE) at TH 65 (Central Ave NE)
370	TH 47 (University Ave NE) at E Hennepin Ave
937	TH 47 (University Ave NE) at 1st Ave NE
102	TH 47 (University Ave NE) at 3rd Ave NE
877	TH 47 (University Ave NE) at 5th Ave NE
900	TH 47 (University Ave NE) at 8th Ave NE

Existing Conditions

Intersection ID #	397	370	937	102	877	900	Total
Volumes (vph)	2041	2081	2531	1259	1194	1388	10494
Delay (sec/veh)	26	19	17	9	2	16	89
Total Delay (seconds)	53066	39539	43027	11331	2388	22208	171559

Emissions	397	370	937	102	877	900	
CO (kg)	1.93	1.74	2.84	0.86	0.79	1.32	9.48
NOx (kg)	0.37	0.34	0.55	0.17	0.15	0.26	1.84
VOC (kg)	0.45	0.4	0.66	0.20	0.18	0.30	2.19
				Emissions Network Total			13.51

Proposed Build Conditions

Intersection ID #	397	370	937	102	877	900	Total
Volumes (vph)	2041	2081	2531	1259	1194	1388	10494
Delay (sec/veh)	38	20	23	16	5	16	118
Total Delay (seconds)	77558	41620	58213	20144	5970	22208	225713

Emissions	397	370	937	102	877	900	
CO (kg)	2.32	1.77	3.13	1.14	0.93	1.27	10.56
NOx (kg)	0.45	0.34	0.61	0.22	0.18	0.25	2.05
VOC (kg)	0.54	0.41	0.72	0.26	0.22	0.29	2.44
				Emissions Network Total			15.05

Total Delay Reduction (seconds)	-54154
Total Emissions Reduction (kg)	-1.54

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Future Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1783	0	0	1827	0	0	3339	0	0	3517	0
Flt Permitted		0.983			0.864			0.914			0.944	
Satd. Flow (perm)	0	1758	0	0	1612	0	0	3058	0	0	3324	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			7			8			5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	64	0	0	92	0	0	279	0	0	884	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	35.0	35.0		35.0	35.0		75.0	75.0		75.0	75.0	
Total Lost Time (s)		5.5			5.5			5.5			5.5	
Act Effct Green (s)		12.7			12.7			90.5			90.5	
Actuated g/C Ratio		0.12			0.12			0.82			0.82	
v/c Ratio		0.28			0.48			0.11			0.32	
Control Delay		30.3			50.0			2.5			0.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.3			50.0			2.5			0.9	
LOS		C			D			A			A	
Approach Delay		30.3			50.0			2.5			0.9	
Approach LOS		C			D			A			A	

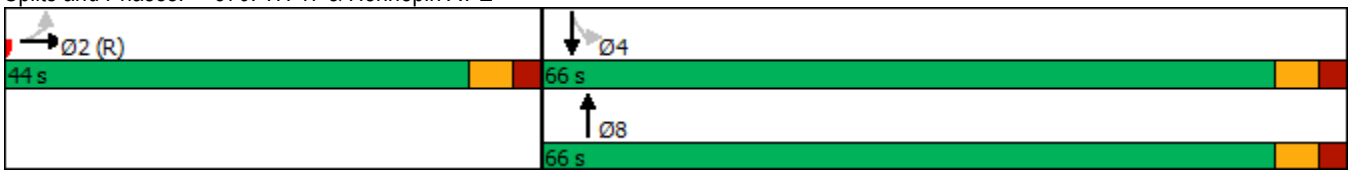
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 68 (62%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Future Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4636	0	0	0	0	0	3446	0	0	3550	0
Flt Permitted		0.998									0.903	
Satd. Flow (perm)	0	4636	0	0	0	0	0	3446	0	0	3221	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		142						16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	754	0	0	0	0	0	112	0	0	876	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Total Split (s)	44.0	44.0						66.0		66.0	66.0	
Total Lost Time (s)		6.0						6.0			6.0	
Act Effct Green (s)		38.0						60.0			60.0	
Actuated g/C Ratio		0.35						0.55			0.55	
v/c Ratio		0.45						0.06			0.50	
Control Delay		23.2						18.6			6.2	
Queue Delay		0.0						0.0			0.1	
Total Delay		23.2						18.6			6.2	
LOS		C						B			A	
Approach Delay		23.2						18.6			6.2	
Approach LOS		C						B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 36 (33%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

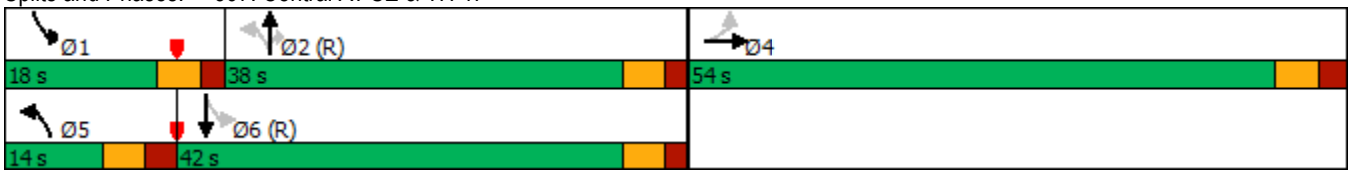
Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Future Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	3423	0	0	0	0	0	3231	1482	1805	1784	0
Flt Permitted		0.998						0.541		0.578		
Satd. Flow (perm)	0	3423	0	0	0	0	0	1766	1482	1098	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32							89		3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	0	1208	0	0	0	0	0	284	64	132	820	0
Turn Type	Perm	NA					pm+pt	NA	Perm	custom	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	1 6		
Total Split (s)	54.0	54.0					14.0	38.0	38.0	18.0	42.0	
Total Lost Time (s)		6.0						5.5	5.5	5.5	5.5	
Act Effct Green (s)		48.0						41.0	32.5	49.0	36.5	
Actuated g/C Ratio		0.44						0.37	0.30	0.45	0.33	
v/c Ratio		0.80						0.37	0.13	0.23	1.38	
Control Delay		39.9						19.7	3.5	18.6	213.7	
Queue Delay		0.1						0.0	0.0	0.0	0.0	
Total Delay		40.0						19.7	3.5	18.6	213.7	
LOS		D						B	A	B	F	
Approach Delay		40.0						16.7			186.7	
Approach LOS		D						B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 12 (11%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 92.4		Intersection LOS: F	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Future Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1597	0	0	1800	0	0	3395	0	0	3536	0
Flt Permitted		0.952			0.952			0.920				
Satd. Flow (perm)	0	1533	0	0	1727	0	0	3129	0	0	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			8			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	24	0	0	24	0	0	188	0	0	961	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	28.0	28.0		28.0	28.0		82.0	82.0		82.0	82.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Act Effct Green (s)		10.0			10.0			89.5			89.5	
Actuated g/C Ratio		0.09			0.09			0.81			0.81	
v/c Ratio		0.16			0.15			0.07			0.33	
Control Delay		32.9			37.1			3.4			0.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		32.9			37.1			3.4			0.8	
LOS		C			D			A			A	
Approach Delay		32.9			37.1			3.4			0.8	
Approach LOS		C			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 2.6		Intersection LOS: A	
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Future Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1612	1625	0	0	1858	0	0	3311	0	0	3472	0
Flt Permitted	0.704				0.968			0.798			0.954	
Satd. Flow (perm)	1194	1625	0	0	1810	0	0	2661	0	0	3313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			6			3			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			344	
Travel Time (s)		17.3			18.5			28.2			7.8	
Lane Group Flow (vph)	112	100	0	0	100	0	0	228	0	0	853	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	39.0	39.0		39.0	39.0		71.0	71.0		71.0	71.0	
Total Lost Time (s)	5.5	5.5			5.5			5.5			5.5	
Act Effct Green (s)	33.5	33.5			33.5			65.5			65.5	
Actuated g/C Ratio	0.30	0.30			0.30			0.60			0.60	
v/c Ratio	0.31	0.19			0.18			0.14			0.43	
Control Delay	32.3	13.9			27.5			7.9			12.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	32.3	13.9			27.5			7.9			12.5	
LOS	C	B			C			A			B	
Approach Delay		23.6			27.5			7.9			12.5	
Approach LOS		C			C			A			B	

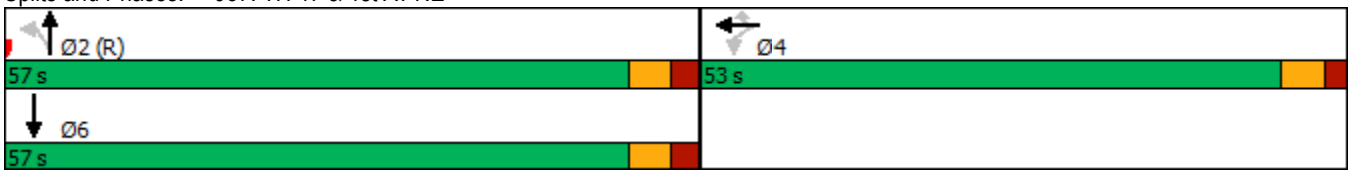
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 11 (10%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 900: TH 47 & 8th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Future Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4640	1298	0	3355	0	0	3426	0
Flt Permitted					0.996			0.795				
Satd. Flow (perm)	0	0	0	0	4640	1298	0	2692	0	0	3426	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2	123					21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1266	123	0	108	0	0	927	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2					
Total Split (s)				53.0	53.0	53.0	57.0	57.0			57.0	
Total Lost Time (s)					5.5	5.5		6.0			6.0	
Act Effct Green (s)					47.5	47.5		51.0			51.0	
Actuated g/C Ratio					0.43	0.43		0.46			0.46	
v/c Ratio					0.63	0.20		0.09			0.58	
Control Delay					26.1	4.2		12.9			16.2	
Queue Delay					0.0	0.0		0.0			0.0	
Total Delay					26.1	4.2		12.9			16.2	
LOS					C	A		B			B	
Approach Delay					24.2			12.9			16.2	
Approach LOS					C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 87 (79%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	57	218	820	1133
Control Delay / Veh (s/v)	30	50	2	1	5
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	50	2	1	5
Total Delay (hr)	0	1	0	0	1
Stops / Veh	0.55	0.84	0.20	0.03	0.12
Stops (#)	21	48	43	25	137
Average Speed (mph)	11	9	26	29	25
Total Travel Time (hr)	1	1	1	6	9
Distance Traveled (mi)	6	10	33	166	214
Fuel Consumed (gal)	1	1	2	7	11
Fuel Economy (mpg)	NA	7.7	19.4	23.3	20.1
CO Emissions (kg)	0.04	0.09	0.12	0.50	0.74
NOx Emissions (kg)	0.01	0.02	0.02	0.10	0.14
VOC Emissions (kg)	0.01	0.02	0.03	0.12	0.17
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	667	86	799	1552
Control Delay / Veh (s/v)	23	19	6	14
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	19	6	14
Total Delay (hr)	4	0	1	6
Stops / Veh	0.61	0.50	0.17	0.37
Stops (#)	406	43	132	581
Average Speed (mph)	12	13	18	14
Total Travel Time (hr)	7	1	3	11
Distance Traveled (mi)	86	10	62	158
Fuel Consumed (gal)	9	1	4	14
Fuel Economy (mpg)	9.6	NA	14.5	11.1
CO Emissions (kg)	0.63	0.07	0.30	0.99
NOx Emissions (kg)	0.12	0.01	0.06	0.19
VOC Emissions (kg)	0.14	0.02	0.07	0.23
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	986	240	800	2026
Control Delay / Veh (s/v)	40	17	188	96
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	40	17	188	96
Total Delay (hr)	11	1	42	54
Stops / Veh	0.84	0.54	0.74	0.77
Stops (#)	832	129	594	1555
Average Speed (mph)	8	14	1	3
Total Travel Time (hr)	15	2	43	60
Distance Traveled (mi)	111	31	31	173
Fuel Consumed (gal)	17	3	35	55
Fuel Economy (mpg)	6.4	11.0	0.9	3.1
CO Emissions (kg)	1.20	0.20	2.46	3.86
NOx Emissions (kg)	0.23	0.04	0.48	0.75
VOC Emissions (kg)	0.28	0.05	0.57	0.89
Unserved Vehicles (#)	0	0	192	192
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	11	9	172	808	1000
Control Delay / Veh (s/v)	33	37	3	1	2
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	37	3	1	2
Total Delay (hr)	0	0	0	0	1
Stops / Veh	0.64	0.78	0.31	0.04	0.10
Stops (#)	7	7	53	34	101
Average Speed (mph)	10	10	26	29	28
Total Travel Time (hr)	0	0	1	7	8
Distance Traveled (mi)	2	1	35	190	228
Fuel Consumed (gal)	0	0	2	8	10
Fuel Economy (mpg)	NA	NA	18.9	23.3	22.1
CO Emissions (kg)	0.01	0.01	0.13	0.57	0.72
NOx Emissions (kg)	0.00	0.00	0.03	0.11	0.14
VOC Emissions (kg)	0.00	0.00	0.03	0.13	0.17
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	166	68	194	818	1246
Control Delay / Veh (s/v)	24	28	8	13	14
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	24	28	8	13	14
Total Delay (hr)	1	1	0	3	5
Stops / Veh	0.57	0.68	0.38	0.50	0.50
Stops (#)	95	46	74	408	623
Average Speed (mph)	13	12	23	12	14
Total Travel Time (hr)	2	1	2	5	9
Distance Traveled (mi)	24	11	46	53	133
Fuel Consumed (gal)	2	1	3	7	13
Fuel Economy (mpg)	10.3	9.8	17.6	8.2	10.7
CO Emissions (kg)	0.16	0.07	0.18	0.46	0.88
NOx Emissions (kg)	0.03	0.01	0.04	0.09	0.17
VOC Emissions (kg)	0.04	0.02	0.04	0.11	0.20
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1185	97	837	2119
Control Delay / Veh (s/v)	24	13	16	21
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	24	13	16	21
Total Delay (hr)	8	0	4	12
Stops / Veh	0.70	0.38	0.73	0.70
Stops (#)	832	37	609	1478
Average Speed (mph)	18	13	16	17
Total Travel Time (hr)	19	1	8	28
Distance Traveled (mi)	341	8	127	476
Fuel Consumed (gal)	25	1	11	37
Fuel Economy (mpg)	13.9	NA	11.2	13.0
CO Emissions (kg)	1.72	0.05	0.79	2.56
NOx Emissions (kg)	0.33	0.01	0.15	0.50
VOC Emissions (kg)	0.40	0.01	0.18	0.59
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	31
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	31
Total Delay (hr)	79
Stops / Veh	0.49
Stops (#)	4475
Average Speed (mph)	11
Total Travel Time (hr)	125
Distance Traveled (mi)	1382
Fuel Consumed (gal)	140
Fuel Economy (mpg)	9.9
CO Emissions (kg)	9.76
NOx Emissions (kg)	1.90
VOC Emissions (kg)	2.26
Unserved Vehicles (#)	192
Vehicles in dilemma zone (#)	0
Performance Index	91.5

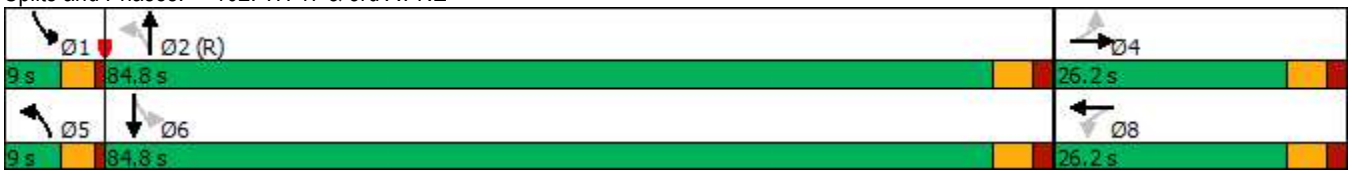
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑			↑
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Satd. Flow (prot)	0	0	1905	0	0	1905
Flt Permitted						
Satd. Flow (perm)	0	0	1905	0	0	1905
Link Speed (mph)	30		30			30
Link Distance (ft)	73		657			585
Travel Time (s)	1.7		14.9			13.3
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 0.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Future Volume (vph)	1	18	19	24	24	9	7	204	7	11	798	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1783	0	0	1827	0	1504	1768	0	1641	1856	0
Flt Permitted		0.980			0.849		0.255			0.594		
Satd. Flow (perm)	0	1752	0	0	1584	0	404	1768	0	1026	1856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			5			4			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	64	0	0	92	0	12	267	0	20	864	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	26.2	26.2		26.2	26.2		9.0	84.8		9.0	84.8	
Total Lost Time (s)		5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)		13.3			13.3		95.5	91.6		95.7	91.7	
Actuated g/C Ratio		0.11			0.11		0.80	0.76		0.80	0.76	
v/c Ratio		0.29			0.51		0.03	0.20		0.02	0.61	
Control Delay		32.8			56.9		3.0	4.9		0.4	4.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.1	
Total Delay		32.8			56.9		3.0	4.9		0.4	4.8	
LOS		C			E		A	A		A	A	
Approach Delay		32.8			56.9			4.9			4.7	
Approach LOS		C			E			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			

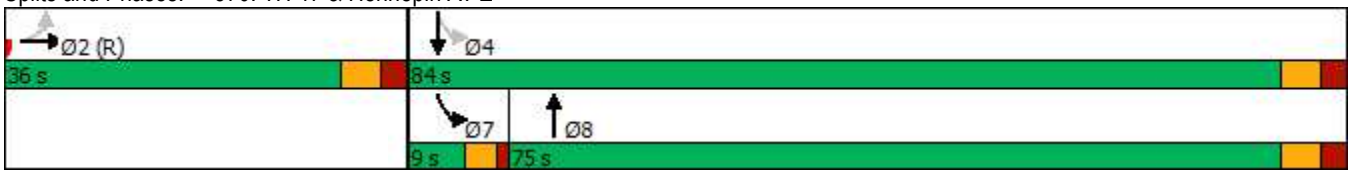
Splits and Phases: 102: TH 47 & 3rd Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Future Volume (vph)	28	397	242	0	0	0	0	79	7	55	744	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	250		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4636	0	0	0	0	0	1817	0	1752	1881	0
Flt Permitted		0.998								0.641		
Satd. Flow (perm)	0	4636	0	0	0	0	0	1817	0	1182	1881	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113						12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	754	0	0	0	0	0	112	0	85	791	0
Turn Type	Perm	NA						NA		pm+pt	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2									4		
Total Split (s)	36.0	36.0						75.0		9.0	84.0	
Total Lost Time (s)		6.0						6.0		4.0	6.0	
Act Effct Green (s)		42.3						58.5		67.7	65.7	
Actuated g/C Ratio		0.35						0.49		0.56	0.55	
v/c Ratio		0.44						0.13		0.12	0.77	
Control Delay		27.8						27.8		4.1	10.9	
Queue Delay		0.0						0.0		0.0	2.8	
Total Delay		27.9						27.8		4.1	13.7	
LOS		C						C		A	B	
Approach Delay		27.9						27.8			12.8	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Future Volume (vph)	35	752	199	0	0	0	34	164	42	104	667	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	0		0	0		80	0		0
Storage Lanes	1		0	0		0	1		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1805	1801	0	0	0	0	1719	1696	1482	1805	1784	0
Flt Permitted	0.950						0.094			0.509		
Satd. Flow (perm)	1805	1801	0	0	0	0	170	1696	1482	967	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14							64		3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	56	1152	0	0	0	0	56	228	64	132	820	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	62.0	62.0					9.0	48.0	48.0	10.0	49.0	
Total Lost Time (s)	6.0	6.0					4.0	5.5	5.5	4.0	5.5	
Act Effct Green (s)	56.0	56.0					49.0	42.5	42.5	51.6	45.3	
Actuated g/C Ratio	0.47	0.47					0.41	0.35	0.35	0.43	0.38	
v/c Ratio	0.07	1.36					0.42	0.38	0.11	0.29	1.21	
Control Delay	17.4	192.8					28.7	31.3	6.8	21.9	144.2	
Queue Delay	0.0	0.0					0.0	0.0	0.0	0.0	0.0	
Total Delay	17.4	192.8					28.7	31.3	6.8	21.9	144.2	
LOS	B	F					C	C	A	C	F	
Approach Delay		184.7						26.4			127.2	
Approach LOS		F						C			F	

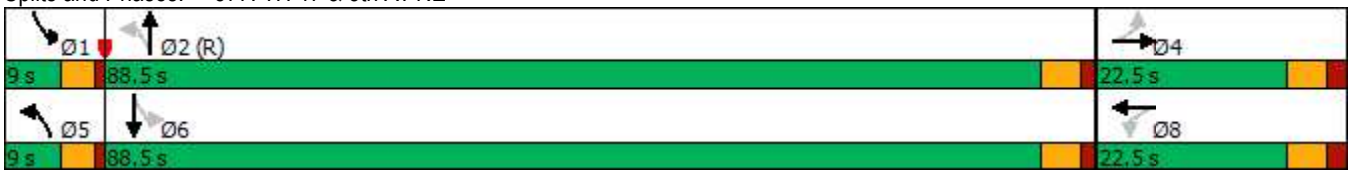
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 88 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay: 140.9		Intersection LOS: F	
Intersection Capacity Utilization 105.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Future Volume (vph)	1	2	8	1	5	3	4	165	3	0	804	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1597	0	0	1800	0	1805	1784	0	1900	1861	0
Flt Permitted		0.951			0.951		0.222					
Satd. Flow (perm)	0	1531	0	0	1726	0	422	1784	0	1900	1861	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			8			5				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			657	
Travel Time (s)		17.3			18.1			24.3			14.9	
Lane Group Flow (vph)	0	24	0	0	24	0	8	180	0	0	961	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	22.5	22.5		22.5	22.5		9.0	88.5		9.0	88.5	
Total Lost Time (s)		5.5			5.5		4.0	5.0		4.0	5.0	
Act Effct Green (s)		10.0			10.0		100.5	99.5			97.5	
Actuated g/C Ratio		0.08			0.08		0.84	0.83			0.81	
v/c Ratio		0.17			0.16		0.02	0.12			0.64	
Control Delay		36.1			41.1		1.5	2.5			7.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		36.1			41.1		1.5	2.5			7.3	
LOS		D			D		A	A			A	
Approach Delay		36.1			41.1			2.4			7.3	
Approach LOS		D			D			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 59.6%		ICU Level of Service B	
Analysis Period (min) 15			

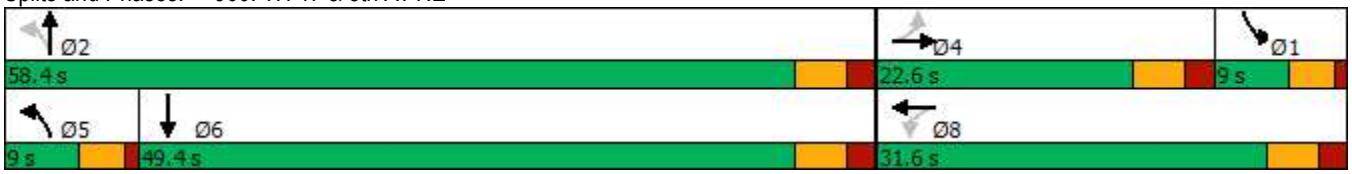
Splits and Phases: 877: TH 47 & 5th Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Future Volume (vph)	92	25	49	8	55	5	26	167	1	2	719	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	250		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1612	1625	0	0	1858	0	1805	1734	0	1805	1827	0
Flt Permitted	0.736				0.961		0.171			0.950		
Satd. Flow (perm)	1249	1625	0	0	1797	0	325	1734	0	1805	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			8			2			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			585			344	
Travel Time (s)		17.3			18.5			13.3			7.8	
Lane Group Flow (vph)	112	100	0	0	100	0	32	196	0	4	849	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		custom	NA	
Protected Phases		4			8!		5	2		1!	6	
Permitted Phases	4			8!			2			1!		
Total Split (s)	22.6	22.6		31.6	31.6		9.0	58.4		9.0	49.4	
Total Lost Time (s)	5.5	5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)	12.0	12.0			13.6		57.5	56.0		5.0	52.6	
Actuated g/C Ratio	0.15	0.15			0.17		0.71	0.69		0.06	0.65	
v/c Ratio	0.61	0.34			0.32		0.10	0.16		0.04	0.71	
Control Delay	45.7	17.6			27.9		5.8	5.8		38.5	17.1	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	45.7	17.6			27.9		5.8	5.8		38.5	17.1	
LOS	D	B			C		A	A		D	B	
Approach Delay		32.4			27.9			5.8			17.2	
Approach LOS		C			C			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 80.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			
! Phase conflict between lane groups.			

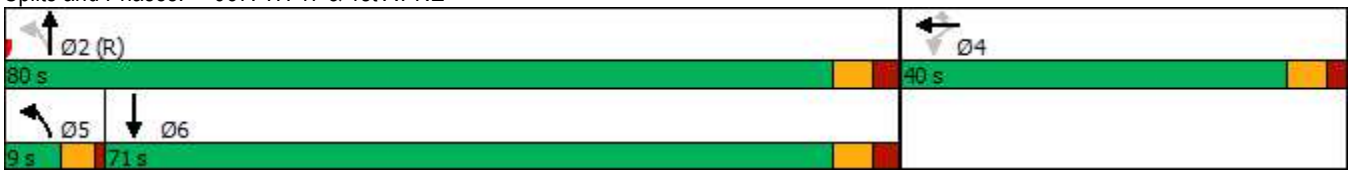
Splits and Phases: 900: TH 47 & 8th Av NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Future Volume (vph)	0	0	0	79	1002	104	19	78	0	0	746	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	250		0	250		0
Storage Lanes	0		0	0		1	1		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4640	1298	1719	1776	0	0	1807	0
Flt Permitted					0.996		0.085					
Satd. Flow (perm)	0	0	0	0	4640	1298	154	1776	0	0	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1	123					10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1266	123	20	88	0	0	927	0
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		5	2			6	
Permitted Phases				4		4	2					
Total Split (s)				40.0	40.0	40.0	9.0	80.0			71.0	
Total Lost Time (s)					5.5	5.5	4.0	6.0			6.0	
Act Effct Green (s)					34.4	34.4	76.1	74.1			70.5	
Actuated g/C Ratio					0.29	0.29	0.63	0.62			0.59	
v/c Ratio					0.95	0.27	0.12	0.08			0.87	
Control Delay					58.0	7.2	9.1	6.0			25.3	
Queue Delay					0.0	0.0	0.0	0.0			1.4	
Total Delay					58.0	7.2	9.1	6.0			26.7	
LOS					E	A	A	A			C	
Approach Delay					53.5			6.6			26.7	
Approach LOS					D			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 41.1		Intersection LOS: D	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



1: TH 47

Direction	All
Future Volume (vph)	0
Control Delay / Veh (s/v)	
Queue Delay / Veh (s/v)	
Total Delay / Veh (s/v)	
Total Delay (hr)	0
Stops / Veh	
Stops (#)	0
Average Speed (mph)	0
Total Travel Time (hr)	0
Distance Traveled (mi)	0
Fuel Consumed (gal)	0
Fuel Economy (mpg)	NA
CO Emissions (kg)	0.00
NOx Emissions (kg)	0.00
VOC Emissions (kg)	0.00
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	57	218	820	1133
Control Delay / Veh (s/v)	33	57	5	5	8
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	57	5	5	8
Total Delay (hr)	0	1	0	1	3
Stops / Veh	0.53	0.88	0.25	0.33	0.35
Stops (#)	20	50	54	268	392
Average Speed (mph)	11	8	24	25	22
Total Travel Time (hr)	1	1	1	7	10
Distance Traveled (mi)	6	10	33	166	214
Fuel Consumed (gal)	1	1	2	9	13
Fuel Economy (mpg)	NA	7.2	17.6	18.2	16.6
CO Emissions (kg)	0.04	0.09	0.13	0.64	0.90
NOx Emissions (kg)	0.01	0.02	0.03	0.12	0.18
VOC Emissions (kg)	0.01	0.02	0.03	0.15	0.21
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	667	86	799	1552
Control Delay / Veh (s/v)	28	28	10	19
Queue Delay / Veh (s/v)	0	0	3	1
Total Delay / Veh (s/v)	28	28	13	20
Total Delay (hr)	5	1	3	9
Stops / Veh	0.65	0.83	0.42	0.54
Stops (#)	435	71	338	844
Average Speed (mph)	11	10	13	11
Total Travel Time (hr)	8	1	5	14
Distance Traveled (mi)	86	10	62	158
Fuel Consumed (gal)	10	1	7	18
Fuel Economy (mpg)	8.9	7.6	9.5	9.0
CO Emissions (kg)	0.68	0.09	0.46	1.23
NOx Emissions (kg)	0.13	0.02	0.09	0.24
VOC Emissions (kg)	0.16	0.02	0.11	0.28
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	986	240	800	2026
Control Delay / Veh (s/v)	187	27	128	145
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	187	27	128	145
Total Delay (hr)	51	2	29	81
Stops / Veh	0.66	0.61	0.75	0.69
Stops (#)	654	146	600	1400
Average Speed (mph)	2	11	1	2
Total Travel Time (hr)	55	3	30	87
Distance Traveled (mi)	111	31	31	173
Fuel Consumed (gal)	46	3	25	74
Fuel Economy (mpg)	2.4	9.1	1.2	2.3
CO Emissions (kg)	3.19	0.24	1.78	5.21
NOx Emissions (kg)	0.62	0.05	0.35	1.01
VOC Emissions (kg)	0.74	0.05	0.41	1.21
Unserved Vehicles (#)	251	0	123	374
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	11	9	172	808	1000
Control Delay / Veh (s/v)	36	41	2	7	7
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	36	41	2	7	7
Total Delay (hr)	0	0	0	2	2
Stops / Veh	0.64	0.67	0.25	0.38	0.36
Stops (#)	7	6	43	304	360
Average Speed (mph)	10	9	27	20	21
Total Travel Time (hr)	0	0	1	5	7
Distance Traveled (mi)	2	1	35	101	138
Fuel Consumed (gal)	0	0	2	7	9
Fuel Economy (mpg)	NA	NA	19.8	14.3	15.2
CO Emissions (kg)	0.01	0.01	0.12	0.49	0.64
NOx Emissions (kg)	0.00	0.00	0.02	0.10	0.12
VOC Emissions (kg)	0.00	0.00	0.03	0.11	0.15
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	166	68	194	818	1246
Control Delay / Veh (s/v)	33	28	6	17	18
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	33	28	6	17	18
Total Delay (hr)	2	1	0	4	6
Stops / Veh	0.69	0.75	0.34	0.59	0.57
Stops (#)	115	51	66	483	715
Average Speed (mph)	10	12	21	9	11
Total Travel Time (hr)	2	1	1	6	10
Distance Traveled (mi)	24	11	21	53	109
Fuel Consumed (gal)	3	1	1	8	13
Fuel Economy (mpg)	8.7	9.6	14.5	6.9	8.4
CO Emissions (kg)	0.19	0.08	0.10	0.54	0.91
NOx Emissions (kg)	0.04	0.01	0.02	0.10	0.18
VOC Emissions (kg)	0.04	0.02	0.02	0.12	0.21
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1185	97	837	2119
Control Delay / Veh (s/v)	54	7	25	40
Queue Delay / Veh (s/v)	0	0	1	1
Total Delay / Veh (s/v)	54	7	27	41
Total Delay (hr)	18	0	6	24
Stops / Veh	0.85	0.35	0.72	0.78
Stops (#)	1009	34	602	1645
Average Speed (mph)	12	18	12	12
Total Travel Time (hr)	29	0	10	40
Distance Traveled (mi)	341	8	127	476
Fuel Consumed (gal)	33	1	13	46
Fuel Economy (mpg)	10.5	NA	9.7	10.3
CO Emissions (kg)	2.28	0.04	0.92	3.24
NOx Emissions (kg)	0.44	0.01	0.18	0.63
VOC Emissions (kg)	0.53	0.01	0.21	0.75
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	49
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	50
Total Delay (hr)	125
Stops / Veh	0.59
Stops (#)	5356
Average Speed (mph)	8
Total Travel Time (hr)	167
Distance Traveled (mi)	1268
Fuel Consumed (gal)	173
Fuel Economy (mpg)	7.3
CO Emissions (kg)	12.13
NOx Emissions (kg)	2.36
VOC Emissions (kg)	2.81
Unserved Vehicles (#)	374
Vehicles in dilemma zone (#)	0
Performance Index	140.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Future Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1834	0	0	1726	0	0	3495	0	0	3336	0
Flt Permitted		0.984			0.897			0.924			0.882	
Satd. Flow (perm)	0	1812	0	0	1573	0	0	3236	0	0	2951	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			28			17			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	52	0	0	124	0	0	940	0	0	367	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	35.0	35.0		35.0	35.0		75.0	75.0		75.0	75.0	
Total Lost Time (s)		5.5			5.5			5.5			5.5	
Act Effct Green (s)		29.5			29.5			69.5			69.5	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.11			0.28			0.46			0.20	
Control Delay		25.4			26.5			7.5			3.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.4			26.5			7.5			3.7	
LOS		C			C			A			A	
Approach Delay		25.4			26.5			7.5			3.7	
Approach LOS		C			C			A			A	

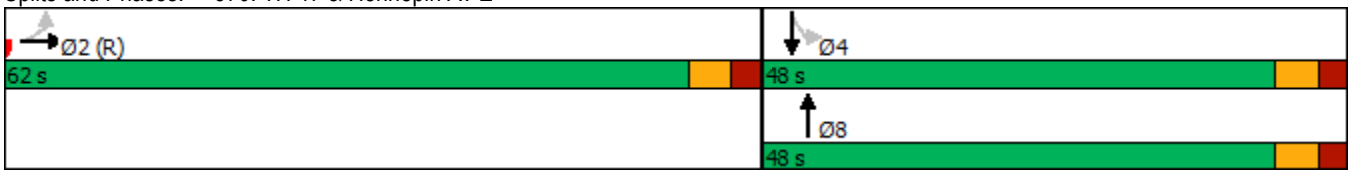
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 75 (68%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Future Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4787	0	0	0	0	0	3524	0	0	3408	0
Flt Permitted		0.995									0.768	
Satd. Flow (perm)	0	4787	0	0	0	0	0	3524	0	0	2641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83						12				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	1540	0	0	0	0	0	372	0	0	530	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Total Split (s)	62.0	62.0						48.0		48.0	48.0	
Total Lost Time (s)		6.0						6.0			6.0	
Act Effct Green (s)		56.0						42.0			42.0	
Actuated g/C Ratio		0.51						0.38			0.38	
v/c Ratio		0.62						0.28			0.53	
Control Delay		19.6						10.0			22.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		19.6						10.0			22.5	
LOS		B						A			C	
Approach Delay		19.6						10.0			22.5	
Approach LOS		B						A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Future Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		80	0		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	3447	0	0	0	0	0	3461	1346	1805	1787	0
Flt Permitted		0.995						0.647		0.331		
Satd. Flow (perm)	0	3447	0	0	0	0	0	2266	1346	629	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14							84		16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	0	795	0	0	0	0	0	845	136	100	472	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	39.0	39.0					10.5	59.0	59.0	12.0	60.5	
Total Lost Time (s)		6.0						6.0	6.0	5.5	5.5	
Act Effct Green (s)		33.0						57.6	53.1	61.4	55.0	
Actuated g/C Ratio		0.30						0.52	0.48	0.56	0.50	
v/c Ratio		0.76						0.68	0.20	0.24	0.52	
Control Delay		38.7						20.7	7.6	11.1	20.5	
Queue Delay		0.0						0.0	0.0	0.0	0.0	
Total Delay		38.7						20.7	7.6	11.1	20.5	
LOS		D						C	A	B	C	
Approach Delay		38.7						18.9			18.9	
Approach LOS		D						B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 49 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Future Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	0	1746	0	0	1765	0	0	3522	0	0	3469	0
Flt Permitted					0.912			0.944			0.927	
Satd. Flow (perm)	0	1746	0	0	1632	0	0	3328	0	0	3219	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			12			5			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	20	0	0	28	0	0	878	0	0	421	0
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	28.0	28.0		28.0	28.0		82.0	82.0		82.0	82.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Act Effct Green (s)		10.0			10.0			89.5			89.5	
Actuated g/C Ratio		0.09			0.09			0.81			0.81	
v/c Ratio		0.12			0.18			0.32			0.16	
Control Delay		30.1			34.2			0.4			2.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.1			34.2			0.4			2.2	
LOS		C			C			A			A	
Approach Delay		30.1			34.2			0.4			2.2	
Approach LOS		C			C			A			A	

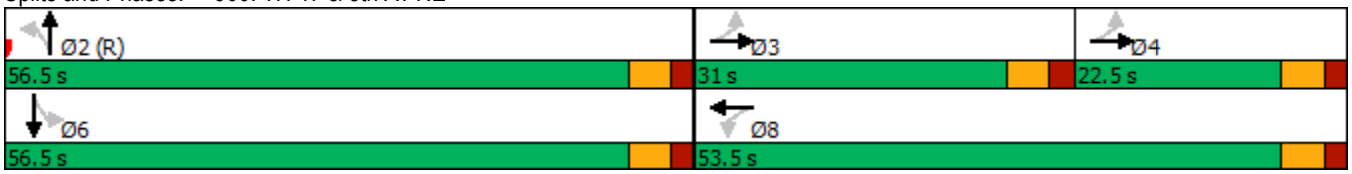
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 107 (97%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 2.1		Intersection LOS: A	
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Future Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1787	1790	0	0	1692	0	0	3524	0	0	3276	0
Flt Permitted	0.702				0.994			0.888			0.927	
Satd. Flow (perm)	1321	1790	0	0	1685	0	0	3142	0	0	3043	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			35			2			25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			390	
Travel Time (s)		17.3			18.5			28.2			8.9	
Lane Group Flow (vph)	224	144	0	0	116	0	0	734	0	0	389	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3 4			8			2			6	
Permitted Phases	3 4			8			2			6		
Total Split (s)				53.5	53.5		56.5	56.5		56.5	56.5	
Total Lost Time (s)					5.5			5.5			5.5	
Act Effct Green (s)	48.0	48.0			48.0			51.0			51.0	
Actuated g/C Ratio	0.44	0.44			0.44			0.46			0.46	
v/c Ratio	0.39	0.18			0.15			0.50			0.27	
Control Delay	23.6	16.7			13.6			12.2			17.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	23.6	16.7			13.6			12.2			17.5	
LOS	C	B			B			B			B	
Approach Delay		20.9			13.6			12.2			17.5	
Approach LOS		C			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 34 (31%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 900: TH 47 & 8th Av NE



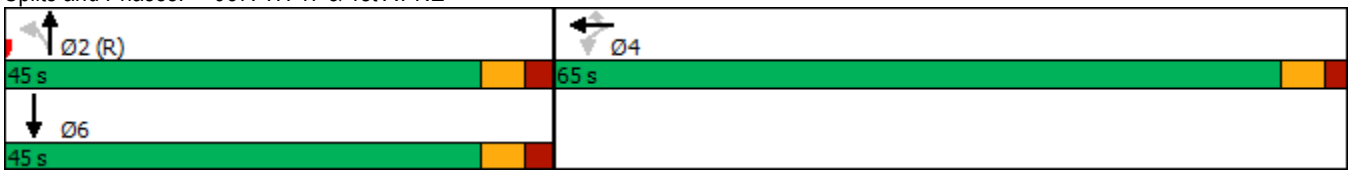
Lane Group	Ø3	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Total Split (s)	31.0	22.5
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Future Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4766	1348	0	3521	0	0	3365	0
Flt Permitted					0.995			0.729				
Satd. Flow (perm)	0	0	0	0	4766	1348	0	2590	0	0	3365	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6	296					16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1559	392	0	440	0	0	445	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2					
Total Split (s)				65.0	65.0	65.0	45.0	45.0			45.0	
Total Lost Time (s)					5.5	5.5		6.0			6.0	
Act Effct Green (s)					59.5	59.5		39.0			39.0	
Actuated g/C Ratio					0.54	0.54		0.35			0.35	
v/c Ratio					0.60	0.45		0.48			0.37	
Control Delay					18.4	5.5		19.1			22.0	
Queue Delay					0.0	0.0		0.0			0.0	
Total Delay					18.4	5.5		19.1			22.0	
LOS					B	A		B			C	
Approach Delay					15.8			19.1			22.0	
Approach LOS					B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Pretimed			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	61	791	349	1239
Control Delay / Veh (s/v)	25	26	7	4	8
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	25	26	7	4	8
Total Delay (hr)	0	0	2	0	3
Stops / Veh	0.61	0.61	0.29	0.14	0.27
Stops (#)	23	37	229	48	337
Average Speed (mph)	12	13	21	26	21
Total Travel Time (hr)	0	1	6	3	10
Distance Traveled (mi)	6	10	120	71	206
Fuel Consumed (gal)	1	1	7	3	12
Fuel Economy (mpg)	NA	NA	16.2	20.6	16.7
CO Emissions (kg)	0.04	0.07	0.52	0.24	0.86
NOx Emissions (kg)	0.01	0.01	0.10	0.05	0.17
VOC Emissions (kg)	0.01	0.02	0.12	0.06	0.20
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	1257	327	497	2081
Control Delay / Veh (s/v)	20	10	23	19
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	20	10	23	19
Total Delay (hr)	7	1	3	11
Stops / Veh	0.65	0.55	0.61	0.63
Stops (#)	822	180	301	1303
Average Speed (mph)	13	17	9	13
Total Travel Time (hr)	12	2	4	19
Distance Traveled (mi)	163	37	39	238
Fuel Consumed (gal)	16	3	6	25
Fuel Economy (mpg)	10.0	11.6	7.0	9.5
CO Emissions (kg)	1.14	0.22	0.39	1.74
NOx Emissions (kg)	0.22	0.04	0.08	0.34
VOC Emissions (kg)	0.26	0.05	0.09	0.40
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	650	882	510	2042
Control Delay / Veh (s/v)	39	19	19	25
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	39	19	19	25
Total Delay (hr)	7	5	3	14
Stops / Veh	0.92	0.74	0.60	0.76
Stops (#)	596	649	306	1551
Average Speed (mph)	8	13	6	10
Total Travel Time (hr)	9	8	3	21
Distance Traveled (mi)	73	113	20	206
Fuel Consumed (gal)	11	12	4	28
Fuel Economy (mpg)	6.4	9.7	4.5	7.5
CO Emissions (kg)	0.80	0.82	0.31	1.93
NOx Emissions (kg)	0.16	0.16	0.06	0.37
VOC Emissions (kg)	0.18	0.19	0.07	0.45
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	13	15	779	387	1194
Control Delay / Veh (s/v)	30	34	0	2	2
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	34	0	2	2
Total Delay (hr)	0	0	0	0	1
Stops / Veh	0.62	0.67	0.01	0.17	0.08
Stops (#)	8	10	10	65	93
Average Speed (mph)	11	10	29	28	28
Total Travel Time (hr)	0	0	5	3	9
Distance Traveled (mi)	2	2	158	91	253
Fuel Consumed (gal)	0	0	7	4	11
Fuel Economy (mpg)	NA	NA	23.8	21.3	22.3
CO Emissions (kg)	0.01	0.02	0.46	0.30	0.79
NOx Emissions (kg)	0.00	0.00	0.09	0.06	0.15
VOC Emissions (kg)	0.00	0.00	0.11	0.07	0.18
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	293	71	673	351	1388
Control Delay / Veh (s/v)	21	14	12	17	15
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	21	14	12	17	15
Total Delay (hr)	2	0	2	2	6
Stops / Veh	0.60	0.39	0.66	0.55	0.61
Stops (#)	177	28	446	193	844
Average Speed (mph)	14	17	21	10	17
Total Travel Time (hr)	3	1	8	3	14
Distance Traveled (mi)	42	11	158	26	237
Fuel Consumed (gal)	4	1	11	3	19
Fuel Economy (mpg)	10.6	NA	14.9	7.7	12.6
CO Emissions (kg)	0.28	0.06	0.74	0.24	1.32
NOx Emissions (kg)	0.05	0.01	0.14	0.05	0.26
VOC Emissions (kg)	0.06	0.01	0.17	0.05	0.30
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1767	405	360	2532
Control Delay / Veh (s/v)	16	19	22	17
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	16	19	22	17
Total Delay (hr)	8	2	2	12
Stops / Veh	0.55	0.44	0.50	0.52
Stops (#)	967	178	180	1325
Average Speed (mph)	21	10	14	19
Total Travel Time (hr)	25	3	4	32
Distance Traveled (mi)	509	32	55	595
Fuel Consumed (gal)	32	4	5	41
Fuel Economy (mpg)	15.9	8.2	11.2	14.6
CO Emissions (kg)	2.23	0.27	0.34	2.84
NOx Emissions (kg)	0.43	0.05	0.07	0.55
VOC Emissions (kg)	0.52	0.06	0.08	0.66
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	16
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	16
Total Delay (hr)	46
Stops / Veh	0.52
Stops (#)	5453
Average Speed (mph)	17
Total Travel Time (hr)	104
Distance Traveled (mi)	1736
Fuel Consumed (gal)	136
Fuel Economy (mpg)	12.8
CO Emissions (kg)	9.48
NOx Emissions (kg)	1.85
VOC Emissions (kg)	2.20
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	61.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Future Volume (vph)	3	27	8	20	25	16	14	725	52	14	333	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1834	0	0	1726	0	1805	1842	0	1543	1770	0
Flt Permitted		0.980			0.889		0.512			0.163		
Satd. Flow (perm)	0	1804	0	0	1559	0	973	1842	0	265	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			29			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		788			888			800			1068	
Travel Time (s)		17.9			20.2			18.2			24.3	
Lane Group Flow (vph)	0	52	0	0	124	0	36	904	0	20	347	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	25.8	25.8		25.8	25.8		9.0	65.2		9.0	65.2	
Total Lost Time (s)		5.5			5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)		20.3			20.3		68.6	65.1		67.8	63.3	
Actuated g/C Ratio		0.20			0.20		0.69	0.65		0.68	0.63	
v/c Ratio		0.14			0.37		0.05	0.75		0.08	0.31	
Control Delay		27.8			29.7		4.5	19.3		4.1	6.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		27.8			29.7		4.5	19.4		4.1	6.4	
LOS		C			C		A	B		A	A	
Approach Delay		27.8			29.7			18.8			6.3	
Approach LOS		C			C			B			A	

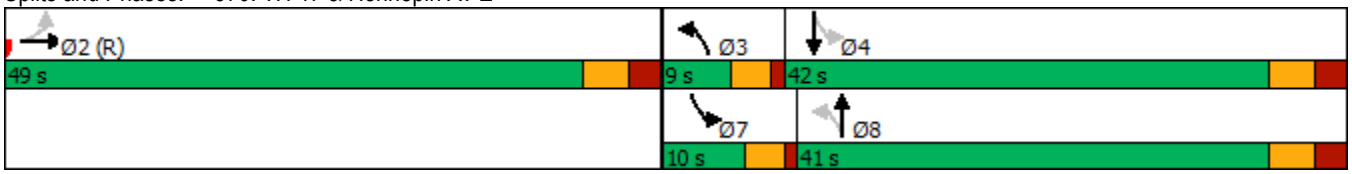
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 70 (70%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 102: TH 47 & 3rd Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Future Volume (vph)	137	848	272	0	0	0	0	299	28	84	413	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	4787	0	0	0	0	1900	1855	0	1583	1845	0
Flt Permitted		0.995								0.226		
Satd. Flow (perm)	0	4787	0	0	0	0	1900	1855	0	377	1845	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		79						6				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		683			386			592			412	
Travel Time (s)		15.5			8.8			13.5			9.4	
Lane Group Flow (vph)	0	1540	0	0	0	0	0	372	0	95	435	0
Turn Type	Perm	NA					pm+pt	NA		pm+pt	NA	
Protected Phases		2					3	8		7	4	
Permitted Phases	2						8			4		
Total Split (s)	49.0	49.0					9.0	41.0		10.0	42.0	
Total Lost Time (s)		6.0					4.0	6.0		4.0	6.0	
Act Effct Green (s)		54.2						25.8		35.8	33.8	
Actuated g/C Ratio		0.54						0.26		0.36	0.34	
v/c Ratio		0.59						0.77		0.46	0.70	
Control Delay		16.9						23.5		21.2	26.3	
Queue Delay		0.0						0.0		0.0	0.7	
Total Delay		16.9						23.5		21.2	27.0	
LOS		B						C		C	C	
Approach Delay		16.9						23.5			26.0	
Approach LOS		B						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 56 (56%), Referenced to phase 2:EBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

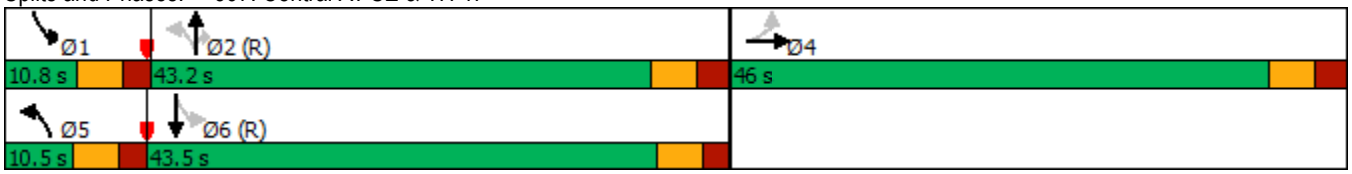
Splits and Phases: 370: TH 47 & Hennepin Av E



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Future Volume (vph)	59	504	86	0	0	0	181	588	113	88	358	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	0		0	0		80	0		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1805	1815	0	0	0	0	0	3461	1346	1805	1787	0
Flt Permitted	0.950							0.585		0.316		
Satd. Flow (perm)	1805	1815	0	0	0	0	0	2049	1346	600	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9							93		14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		592			412			678			207	
Travel Time (s)		13.5			9.4			15.4			4.7	
Lane Group Flow (vph)	84	711	0	0	0	0	0	845	136	100	472	0
Turn Type	Perm	NA					pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4					5	2		1	6	
Permitted Phases	4						2		2	6		
Total Split (s)	46.0	46.0					10.5	43.2	43.2	10.8	43.5	
Total Lost Time (s)	6.0	6.0						6.0	6.0	5.5	5.5	
Act Effct Green (s)	40.0	40.0						43.0	39.4	43.3	38.0	
Actuated g/C Ratio	0.40	0.40						0.43	0.39	0.43	0.38	
v/c Ratio	0.12	0.97						0.90	0.23	0.31	0.69	
Control Delay	15.9	51.1						38.7	9.2	17.0	31.4	
Queue Delay	0.0	0.5						0.0	0.0	0.0	0.0	
Total Delay	15.9	51.5						38.7	9.2	17.0	31.4	
LOS	B	D						D	A	B	C	
Approach Delay		47.8						34.6			28.9	
Approach LOS		D						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 96 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 37.7		Intersection LOS: D	
Intersection Capacity Utilization 90.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 397: Central Av SE & TH 47



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Future Volume (vph)	0	5	8	2	6	7	10	758	11	8	377	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	1746	0	0	1765	0	1641	1858	0	1805	1826	0
Flt Permitted					0.914		0.493			0.261		
Satd. Flow (perm)	0	1746	0	0	1636	0	852	1858	0	496	1826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			12			2			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		759			798			1068			1242	
Travel Time (s)		17.3			18.1			24.3			28.2	
Lane Group Flow (vph)	0	20	0	0	28	0	16	862	0	12	409	0
Turn Type		NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Total Split (s)	22.6	22.6		22.6	22.6		9.0	68.4		9.0	68.4	
Total Lost Time (s)		5.5			5.5		4.0	5.0		4.0	5.0	
Act Effct Green (s)		10.0			10.0		79.7	77.5		78.9	75.5	
Actuated g/C Ratio		0.10			0.10		0.80	0.78		0.79	0.76	
v/c Ratio		0.11			0.16		0.02	0.60		0.03	0.30	
Control Delay		27.2			30.8		0.5	2.0		2.1	9.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		27.2			30.8		0.5	2.0		2.1	9.8	
LOS		C			C		A	A		A	A	
Approach Delay		27.2			30.8			2.0			9.6	
Approach LOS		C			C			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 90 (90%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 5.3		Intersection LOS: A	
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

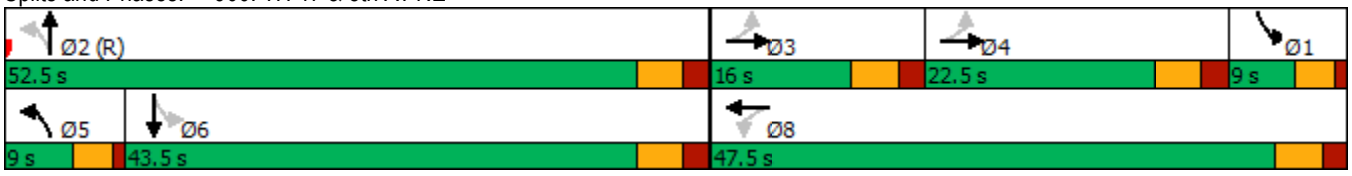
Splits and Phases: 877: TH 47 & 5th Av NE

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Future Volume (vph)	184	74	35	2	46	23	37	630	6	5	298	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	250		0	250		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	1787	1790	0	0	1692	0	1805	1858	0	1504	1732	0
Flt Permitted	0.695				0.993		0.409			0.302		
Satd. Flow (perm)	1307	1790	0	0	1684	0	777	1858	0	478	1732	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			38			1			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		762			816			1242			390	
Travel Time (s)		17.3			18.5			28.2			8.9	
Lane Group Flow (vph)	224	144	0	0	116	0	52	682	0	12	377	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		3 4			8!		5	2		1!	6	
Permitted Phases	3 4			8!			2			6		
Total Split (s)				47.5	47.5		9.0	52.5		9.0	43.5	
Total Lost Time (s)					5.5		4.0	5.5		4.0	5.5	
Act Effct Green (s)	27.5	27.5			29.3		61.2	59.7		57.5	51.5	
Actuated g/C Ratio	0.28	0.28			0.29		0.61	0.60		0.58	0.52	
v/c Ratio	0.62	0.28			0.22		0.10	0.62		0.04	0.42	
Control Delay	39.3	24.7			17.1		2.3	6.2		9.2	18.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	39.3	24.7			17.1		2.3	6.2		9.2	18.8	
LOS	D	C			B		A	A		A	B	
Approach Delay		33.6			17.1			6.0			18.5	
Approach LOS		C			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 34 (34%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

! Phase conflict between lane groups.

Splits and Phases: 900: TH 47 & 8th Av NE



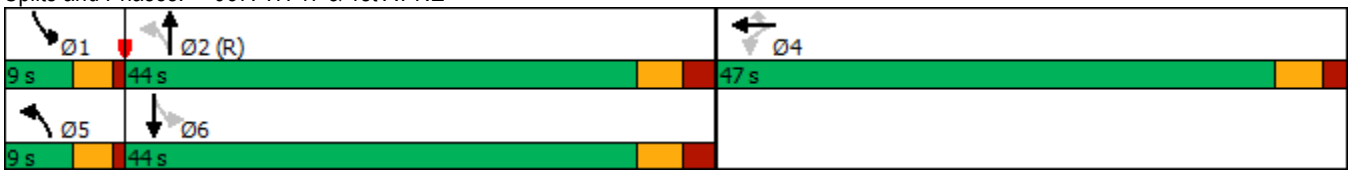
Lane Group	Ø3	Ø4
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	3	4
Permitted Phases		
Total Split (s)	16.0	22.5
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Future Volume (vph)	0	0	0	128	1229	410	66	338	0	0	319	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		300	250		0	250		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Satd. Flow (prot)	0	0	0	0	4766	1348	1805	1863	0	1900	1771	0
Flt Permitted					0.995		0.308					
Satd. Flow (perm)	0	0	0	0	4766	1348	585	1863	0	1900	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5	392					8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		639			1521			412			800	
Travel Time (s)		14.5			34.6			9.4			18.2	
Lane Group Flow (vph)	0	0	0	0	1559	392	84	356	0	0	445	0
Turn Type				Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases					4		5	2		1	6	
Permitted Phases				4		4	2			6		
Total Split (s)				47.0	47.0	47.0	9.0	44.0		9.0	44.0	
Total Lost Time (s)					5.5	5.5	4.0	6.0		4.0	6.0	
Act Effct Green (s)					39.2	39.2	51.3	49.3			41.5	
Actuated g/C Ratio					0.39	0.39	0.51	0.49			0.42	
v/c Ratio					0.83	0.51	0.23	0.39			0.60	
Control Delay					31.8	4.6	11.3	12.9			17.0	
Queue Delay					0.0	0.0	0.0	0.3			0.0	
Total Delay					31.8	4.6	11.3	13.2			17.0	
LOS					C	A	B	B			B	
Approach Delay					26.3			12.8			17.0	
Approach LOS					C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 2:NBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 937: TH 47 & 1st Av NE



102: TH 47 & 3rd Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	38	61	791	349	1239
Control Delay / Veh (s/v)	28	30	19	6	16
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	28	30	19	6	16
Total Delay (hr)	0	1	4	1	6
Stops / Veh	0.66	0.66	0.67	0.21	0.54
Stops (#)	25	40	527	73	665
Average Speed (mph)	12	12	15	24	17
Total Travel Time (hr)	0	1	8	3	12
Distance Traveled (mi)	6	10	120	71	206
Fuel Consumed (gal)	1	1	11	4	16
Fuel Economy (mpg)	NA	10.1	11.0	18.8	12.7
CO Emissions (kg)	0.04	0.07	0.76	0.26	1.14
NOx Emissions (kg)	0.01	0.01	0.15	0.05	0.22
VOC Emissions (kg)	0.01	0.02	0.18	0.06	0.26
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

370: TH 47 & Hennepin Av E

Direction	EB	NB	SB	All
Future Volume (vph)	1257	327	497	2081
Control Delay / Veh (s/v)	17	24	25	20
Queue Delay / Veh (s/v)	0	0	1	0
Total Delay / Veh (s/v)	17	24	26	20
Total Delay (hr)	6	2	4	12
Stops / Veh	0.63	0.69	0.53	0.61
Stops (#)	788	225	261	1274
Average Speed (mph)	14	11	8	12
Total Travel Time (hr)	11	3	5	20
Distance Traveled (mi)	163	37	39	238
Fuel Consumed (gal)	15	4	6	25
Fuel Economy (mpg)	10.6	8.5	6.8	9.4
CO Emissions (kg)	1.07	0.30	0.40	1.77
NOx Emissions (kg)	0.21	0.06	0.08	0.34
VOC Emissions (kg)	0.25	0.07	0.09	0.41
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

397: Central Av SE & TH 47

Direction	EB	NB	SB	All
Future Volume (vph)	650	882	510	2042
Control Delay / Veh (s/v)	48	35	29	38
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	48	35	29	38
Total Delay (hr)	9	9	4	21
Stops / Veh	0.83	0.82	0.76	0.81
Stops (#)	539	721	386	1646
Average Speed (mph)	7	9	4	7
Total Travel Time (hr)	11	12	5	28
Distance Traveled (mi)	73	113	20	206
Fuel Consumed (gal)	12	15	6	33
Fuel Economy (mpg)	5.9	7.6	3.4	6.2
CO Emissions (kg)	0.86	1.04	0.42	2.32
NOx Emissions (kg)	0.17	0.20	0.08	0.45
VOC Emissions (kg)	0.20	0.24	0.10	0.54
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

877: TH 47 & 5th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	13	15	779	387	1194
Control Delay / Veh (s/v)	27	31	2	10	5
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	27	31	2	10	5
Total Delay (hr)	0	0	0	1	2
Stops / Veh	0.62	0.67	0.05	0.63	0.25
Stops (#)	8	10	37	244	299
Average Speed (mph)	12	11	28	22	25
Total Travel Time (hr)	0	0	6	4	10
Distance Traveled (mi)	2	2	158	91	253
Fuel Consumed (gal)	0	0	7	6	13
Fuel Economy (mpg)	NA	NA	22.5	15.5	19.0
CO Emissions (kg)	0.01	0.02	0.49	0.41	0.93
NOx Emissions (kg)	0.00	0.00	0.10	0.08	0.18
VOC Emissions (kg)	0.00	0.00	0.11	0.09	0.22
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

900: TH 47 & 8th Av NE

Direction	EB	WB	NB	SB	All
Future Volume (vph)	293	71	673	351	1388
Control Delay / Veh (s/v)	34	17	6	19	16
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	34	17	6	19	16
Total Delay (hr)	3	0	1	2	6
Stops / Veh	0.77	0.48	0.36	0.62	0.52
Stops (#)	227	34	239	217	717
Average Speed (mph)	10	16	25	10	17
Total Travel Time (hr)	4	1	6	3	14
Distance Traveled (mi)	42	11	158	26	237
Fuel Consumed (gal)	5	1	9	4	18
Fuel Economy (mpg)	8.4	NA	18.3	7.2	13.1
CO Emissions (kg)	0.35	0.06	0.61	0.25	1.27
NOx Emissions (kg)	0.07	0.01	0.12	0.05	0.25
VOC Emissions (kg)	0.08	0.01	0.14	0.06	0.29
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

937: TH 47 & 1st Av NE

Direction	WB	NB	SB	All
Future Volume (vph)	1767	404	360	2531
Control Delay / Veh (s/v)	26	13	17	23
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	26	13	17	23
Total Delay (hr)	13	1	2	16
Stops / Veh	0.70	0.37	0.43	0.61
Stops (#)	1237	149	153	1539
Average Speed (mph)	17	13	15	17
Total Travel Time (hr)	30	2	4	36
Distance Traveled (mi)	509	32	55	595
Fuel Consumed (gal)	37	3	4	45
Fuel Economy (mpg)	13.7	9.9	12.6	13.3
CO Emissions (kg)	2.60	0.22	0.30	3.13
NOx Emissions (kg)	0.51	0.04	0.06	0.61
VOC Emissions (kg)	0.60	0.05	0.07	0.72
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	21
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	21
Total Delay (hr)	62
Stops / Veh	0.59
Stops (#)	6140
Average Speed (mph)	14
Total Travel Time (hr)	120
Distance Traveled (mi)	1736
Fuel Consumed (gal)	151
Fuel Economy (mpg)	11.5
CO Emissions (kg)	10.56
NOx Emissions (kg)	2.05
VOC Emissions (kg)	2.45
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	79.4

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 47 (University Ave NE)	**District**	Metro	**County**	Hennepin
Begin RP		**End RP**		**Miles**	0.900
Location	TH 65 (Central Avenue NE) to 9th Avenue NE				

B. Project Description

Proposed Work	4 to 3 lane conversion, dedicated left turn lanes at major intersections, removed parking		
Project Cost*	$9,232,520	**Installation Year**	2028
Project Service Life	20 years	**Traffic Growth Factor**	0.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.81	**Fatal (K) Crashes**	**Reference**	CMF 5554 Converting 4-lane to 3-lane Roadways with Center Turn Lane
0.81	**Serious Injury (A) Crashes**		
0.81	**Moderate Injury (B) Crashes**	**Crash Type**	Intersection Crashes
0.81	**Possible Injury (C) Crashes**		
0.81	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

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

E. Crash Data

Begin Date	1/1/2020	**End Date**	12/31/2022	3 years
Data Source	MnCMAT2			

Crash Severity	Intersection Crashes	Segment Crashes
K crashes	0	0
A crashes	2	0
B crashes	7	2
C crashes	1	0
PDO crashes	39	10

F. Benefit-Cost Calculation

$5,695,723	**Benefit (present value)**	**B/C Ratio = 0.62**
$9,232,520	**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	$1,600,000
A crashes	$800,000
B crashes	$250,000
C crashes	$130,000
PDO crashes	$15,000

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

Real Discount Rate:	0.8%	Default
Traffic Growth Rate:	0.0%	Default
Project Service Life:	20 years	**Revised**

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.38	0.13	$100,267
B crashes	1.70	0.57	$141,333
C crashes	0.19	0.06	$8,147
PDO crashes	11.42	3.81	$57,110
			$306,857

H. Amortized Benefit

Year	Crash Benefits	Present Value
2028	$306,857	$306,857
2029	$306,857	$304,421
2030	$306,857	$302,005
2031	$306,857	$299,608
2032	$306,857	$297,231
2033	$306,857	$294,872
2034	$306,857	$292,531
2035	$306,857	$290,210
2036	$306,857	$287,906
2037	$306,857	$285,621
2038	$306,857	$283,355
2039	$306,857	$281,106
2040	$306,857	$278,875
2041	$306,857	$276,661
2042	$306,857	$274,466
2043	$306,857	$272,287
2044	$306,857	$270,126
2045	$306,857	$267,983
2046	$306,857	$265,856
2047	$306,857	$263,746
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 = $5,695,723

NOTE:
This calculation relies on the real discount rate, which accounts for inflation. No further discounting is necessary.

Crash Modification Factor ROAD DIET 4 LANES TO 3 LANES

0.81	**Fatal (K) Crashes**	**Reference**	CMF 5554
0.81	**Serious Injury (A) Crashes**		
0.81	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.81	**Possible Injury (C) Crashes**		
0.81	**Property Damage Only Crashes**		www.CMFclearinghouse.org

Crash Modification Factor PROHIBIT ON STREET PARKING

	Fatal (K) Crashes	**Reference**	CMF 154
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	All
	Possible Injury (C) Crashes		
0.73	**Property Damage Only Crashes**		www.CMFclearinghouse.org

MULTIPLE CMF CALCULATION - SEGMENTS

CMF (K)	**= CMF 2 - 0.81 = 0.81**	0.810	**Fatal (K) Crashes**
CMF (A)	**= CMF 2 - 0.81 = 0.81**	0.810	**Serious Injury (A) Crashes**
CMF (B)	**= CMF 2 - 0.81 = 0.81**	0.810	**Moderate Injury (B) Crashes**
CMF (C)	**= CMF 2 - 0.81 = 0.81**	0.810	**Possible Injury (C) Crashes**
CMF (PDO)	**= CMF 2 * CMF 3 = 0.81 * 0.73 = 0.591**	0.591	**Property Damage Only Crashes**

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 47 (University Ave NE)	**District**	Metro	**County**	Hennepin
Begin RP		**End RP**		**Miles**	0.900
Location	TH 65 (Central Avenue NE) at TH 65, Hennepin Ave, 1st Ave, 3rd Ave, 5th Ave, and 8th Ave				

B. Project Description

Proposed Work	FYA Protected/Permissive Left-Turn Signal Phasing		
Project Cost*	$9,232,520	**Installation Year**	2028
Project Service Life	20 years	**Traffic Growth Factor**	0.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.60	**Fatal (K) Crashes**	**Reference**	CMF 7684
0.60	**Serious Injury (A) Crashes**		
0.60	**Moderate Injury (B) Crashes**	**Crash Type**	Left Turn (signalized)
0.60	**Possible Injury (C) Crashes**		
0.60	**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	1/1/2020	**End Date**	12/31/2022	3 years
Data Source	MnCMAT2			

Crash Severity	Left Turn	< optional 2nd CMF >
K crashes	0	0
A crashes	0	0
B crashes	2	0
C crashes	0	0
PDO crashes	10	0

F. Benefit-Cost Calculation

$1,616,708	**Benefit (present value)**	**B/C Ratio = 0.18**
$9,232,520	**Cost**	

Proposed project expected to reduce 2 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,600,000
A crashes	$800,000
B crashes	$250,000
C crashes	$130,000
PDO crashes	$15,000

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

Real Discount Rate:	0.8%	Default
Traffic Growth Rate:	0.0%	Default
Project Service Life:	20 years	**Revised**

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	0.80	0.27	$67,000
C crashes	0.00	0.00	$0
PDO crashes	4.02	1.34	$20,100
			$87,100

H. Amortized Benefit

Year	Crash Benefits	Present Value
2028	$87,100	$87,100
2029	$87,100	$86,409
2030	$87,100	$85,723
2031	$87,100	$85,043
2032	$87,100	$84,368
2033	$87,100	$83,698
2034	$87,100	$83,034
2035	$87,100	$82,375
2036	$87,100	$81,721
2037	$87,100	$81,072
2038	$87,100	$80,429
2039	$87,100	$79,791
2040	$87,100	$79,157
2041	$87,100	$78,529
2042	$87,100	$77,906
2043	$87,100	$77,288
2044	$87,100	$76,674
2045	$87,100	$76,066
2046	$87,100	$75,462
2047	$87,100	$74,863
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 = $1,616,708

NOTE:
This calculation relies on the real discount rate, which accounts for inflation. No further discounting is necessary.

Crash Case Listing

TH 47 Central to 9th

Route System	Route Number	Measure	Co	City	Incident Number	Date	Time Day of Week	Basic Type	Num Veh	Sev
03-MNTH	47	1.908	27	Minneapolis	01006771	02/16/22	0715 WED	Rear End	2	N
03-MNTH	47	1.917	27	Minneapolis	00806833	04/09/20	0046 THU	SVROR	1	B
03-MNTH	47	1.937	27	Minneapolis	00873022	01/05/21	1850 TUE	Other	2	N
03-MNTH	47	1.958	27	Minneapolis	00861340	11/05/20	1150 THU	Angle	2	N
03-MNTH	47	1.963	27	Minneapolis	01021652	05/09/22	1738 MON	Other	2	N
03-MNTH	47	1.976	27	Minneapolis	01049497	10/04/22	0804 TUE	Rear End	2	N
03-MNTH	47	1.981	27	Minneapolis	00799985	02/22/20	0002 SAT	Other	2	N
03-MNTH	47	1.999	27	Minneapolis	01007635	02/20/22	1225 SUN	Angle	2	N
03-MNTH	47	2.013	27	Minneapolis	00906545	05/19/21	0012 WED	Head On	2	N
03-MNTH	47	2.016	27	Minneapolis	01040897	08/21/22	0314 SUN	Angle	2	N
03-MNTH	47	2.023	27	Minneapolis	00806450	04/08/20	2000 WED	SSS	2	N
03-MNTH	47	2.029	27	Minneapolis	00784593	01/31/20	0745 FRI	SSS	2	N
03-MNTH	47	2.030	27	Minneapolis	00805094	03/24/20	1155 TUE	Other	2	N
03-MNTH	47	2.058	27	Minneapolis	00784354	01/30/20	0705 THU	SSS	2	N
03-MNTH	47	2.087	27	Minneapolis	00894187	03/04/21	1030 THU	Rear End	2	N
03-MNTH	47	2.091	27	Minneapolis	00801702	03/01/20	2018 SUN	Angle	2	B
03-MNTH	47	2.093	27	Minneapolis	00888428	02/05/21	1557 FRI	Angle	2	N
03-MNTH	47	2.094	27	Minneapolis	00887351	01/30/21	1900 SAT	SSS	2	N
03-MNTH	47	2.094	27	Minneapolis	01020734	05/04/22	1430 WED	SSS	2	N
03-MNTH	47	2.094	27	Minneapolis	01028118	06/12/22	1608 SUN	Ped	1	B
03-MNTH	47	2.105	27	Minneapolis	00887437	01/31/21	1310 SUN	Rear End	2	N
03-MNTH	47	2.108	27	Minneapolis	01056461	11/08/22	1520 TUE	SSS	2	N
03-MNTH	47	2.110	27	Minneapolis	00933697	08/12/21	0140 THU	Other	2	N
03-MNTH	47	2.118	27	Minneapolis	01051007	10/11/22	1859 TUE	Rear End	2	N
03-MNTH	47	2.122	27	Minneapolis	00929120	07/19/21	1742 MON	Other	2	N
03-MNTH	47	2.250	27	Minneapolis	00937427	08/30/21	1245 MON	Rear End	4	B
03-MNTH	47	2.250	27	Minneapolis	01061697	11/29/22	1230 TUE	SSS	2	N
03-MNTH	47	2.252	27	Minneapolis	00834318	08/09/20	0642 SUN	SVROR	1	C
03-MNTH	47	2.255	27	Minneapolis	01007082	02/17/22	1600 THU	SSS	2	N
03-MNTH	47	2.262	27	Minneapolis	00806517	04/09/20	1230 THU	SSO	3	N
03-MNTH	47	2.273	27	Minneapolis	01031908	07/02/22	1535 SAT	SSS	2	A

Crash Case Listing

TH 47 Central to 9th

Route System	Route Number	Measure	Co	City	Incident Number	Date	Time Day of Week	Basic Type	Num Veh	Sev
03-MNTH	47	2.448	27	Minneapolis	00907538	05/23/21	1340 SUN	SSS	2	N
03-MNTH	47	2.456	27	Minneapolis	01030204	06/23/22	1558 THU	SVROR	1	B
03-MNTH	47	2.586	27	Minneapolis	01010618	03/03/22	1930 THU	Other	2	N
03-MNTH	47	2.607	27	Minneapolis	00930688	07/27/21	1210 TUE	Angle	2	N
03-MNTH	47	2.687	27	Minneapolis	01014047	03/24/22	1055 THU	SSO	2	N
03-MNTH	65	0.678	27	Minneapolis	00911955	06/14/21	0958 MON	Bike	1	B
03-MNTH	65	0.693	27	Minneapolis	01066909	12/07/22	2356 WED	Rear End	2	N
03-MNTH	65	0.714	27	Minneapolis	00863752	11/16/20	0825 MON	SSS	2	N
04-CSAH	52	11.532	27	Minneapolis	01044440	08/31/22	0820 WED	Angle	2	N
04-CSAH	52	11.534	27	Minneapolis	00784093	01/28/20	1923 TUE	SSS	2	N
04-CSAH	52	11.543	27	Minneapolis	00915959	07/03/21	1230 SAT	Ped	1	B
04-CSAH	52	11.557	27	Minneapolis	01047137	09/20/22	1835 TUE	Angle	2	N
04-CSAH	52	11.565	27	Minneapolis	00945071	10/05/21	2050 TUE	Angle	2	N
04-CSAH	52	11.569	27	Minneapolis	00842166	09/22/20	1444 TUE	Head On	2	N
04-CSAH	52	11.570	27	Minneapolis	00802922	03/06/20	2245 FRI	SSS	2	N
04-CSAH	52	11.572	27	Minneapolis	01045041	09/11/22	1459 SUN	Rear End	3	N
04-CSAH	52	11.574	27	Minneapolis	00906890	05/21/21	0100 FRI	Angle	2	N
04-CSAH	52	11.575	27	Minneapolis	00777106	01/03/20	1645 FRI	SSS	2	N
05-MSAS	197	2.813	27	Minneapolis	00906215	05/17/21	1650 MON	Rear End	2	N
05-MSAS	197	2.837	27	Minneapolis	01024725	05/25/22	1500 WED	Angle	2	N
05-MSAS	197	2.838	27	Minneapolis	01039430	08/13/22	0220 SAT	Angle	2	B
05-MSAS	352	0.151	27	Minneapolis	00849568	10/26/20	1643 MON	Left Turn	2	B
05-MSAS	352	0.151	27	Minneapolis	01019586	04/27/22	1300 WED	Angle	2	N
05-MSAS	352	0.155	27	Minneapolis	01036281	07/26/22	1950 TUE	SSS	2	N
10-MUN	643	0.161	27	Minneapolis	00934287	08/15/21	0221 SUN	Rear End	2	N
10-MUN	671	0.111	27	Minneapolis	00901471	04/19/21	1707 MON	Angle	2	N
10-MUN	1275	0.092	27	Minneapolis	00932783	08/07/21	1030 SAT	Rear End	2	N
52-UNU	52	135.268	27	Minneapolis	00905473	05/13/21	1650 THU	Ped	1	A
52-UNU	52	135.269	27	Minneapolis	00806453	04/08/20	1645 WED	Head On	2	N
52-UNU	52	135.271	27	Minneapolis	00813955	06/11/20	1100 THU	SVROR	1	N

Crash Case Listing

TH 47 Central to 9th

Route System	Route Number	Measure	Co	City	Incident Number	Date	Time	Day of Week	Basic Type	Num Veh	Sev

Selection Filter:

WORK AREA: County('659472') - FILTER: Date('01/01/2020','12/31/2022') - SPATIAL FILTER APPLIED

Analyst:

Blake Andert

Notes:

CORRIDOR VISION 1

Speed goals are noted for each roadway configuration shown.

Illustrations show roadway concepts for discussion. Trees and plants are placeholders for possible future plantings but are not proposed.

General roadway configuration illustrated. Specific roadway configuration may vary at some locations.

Intersection treatments shown for selected intersections only. Final report will include recommendations for all intersections.

Parkways will remain MnDOT jurisdiction and will allow truck traffic.

Draft concepts for public review – final concepts are subject to change. 3/6/2023

LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane
- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

0 1 2 4 8 Miles

N

2-LANE PARKWAY, LOW-SPEED

2-LANE PARKWAY, INTERMEDIATE-SPEED

MINNEAPOLIS

HILLTOP

COLUMBIA HEIGHTS

East River Rd

94

35W

47

65

Broadway St NE
8th Ave NE
9th Ave NE
13th Ave NE
15th Ave NE
16th Ave NE
17th Ave NE
18th Ave NE
19th Ave NE
22nd Ave NE
Lowry Ave NE
27th Ave NE
35th Ave NE
37th Ave NE
40th Ave NE
44th Ave NE
49th Ave NE
53rd Ave NE

1st Ave NE
E Hennepin Ave
Central Ave
University Ave SE
SE 4th St
SE 5th St / Hennepin Ave
6th St NE
SE 7th St / 1st Ave NE
7th St NE
SE 8th St
3rd Ave NE
Spring St NE
Broadway St NE
14th Ave NE
18th Ave NE
18th 1/2 Ave NE
19th Ave NE
20th Ave NE
22nd Ave NE
23rd Ave NE
24th Ave NE
Lowry Ave NE
St Anthony Pkwy
35th Ave NE
37th Ave NE
39th Ave NE
40th Ave NE
41st Ave NE
43rd Ave NE
44th Ave NE
45th Ave NE
46th Ave NE
47th Ave NE
49th Ave NE
50th Ave NE
51st Ave NE
52nd Ave NE
53rd Ave NE

3-LANE ROAD, LOW-SPEED

3-LANE ROAD, LOW-SPEED

CORRIDOR VISION 1

Speed goals are noted for each roadway configuration shown.

Illustrations show roadway concepts for discussion. Trees and plants are placeholders for possible future plantings but are not proposed.

General roadway configuration illustrated. Specific roadway configuration may vary at some locations.

Intersection treatments shown for selected intersections only. Final report will include recommendations for all intersections.

Parkways will remain MnDOT jurisdiction and will allow truck traffic.

Draft concepts for public review – final concepts are subject to change. 3/6/2023

LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane
- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

0 1 2 4 8 Miles

N

4-LANE PARKWAY, INTERMEDIATE-SPEED

4-LANE PARKWAY, INTERMEDIATE-SPEED

694 252 47 65 610 10 10

East River Rd

I-694 WB Ramp
57th Ave NE
61st Ave NE
Mississippi St NE
69th Ave NE
73rd Ave NE
Osborne Rd
81st Ave NE
83rd Ave NE
85th Ave NE
University Ave NE

I-694 WB Ramp
I-694 EB Ramp
Medtronic Pkwy
Moore Lake Dr NE
63rd Ave NE
Mississippi St NE
72nd Ave NE
73rd Ave NE
Osborne Rd
80th Ave NE
81st Ave NE
Middletown Road

FRIDLEY

SPRING LAKE PARK

BLAINE

CORRIDOR VISION 2

Speed goals are noted for each roadway configuration shown.

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LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane

- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange
- C Close Intersection
- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

0 1 2 4 8 Miles

N

3-LANE ROAD, LOW-SPEED

4-LANE PARKWAY, INTERMEDIATE-SPEED

MINNEAPOLIS

HILLTOP

COLUMBIA HEIGHTS

East River Rd

Broadway St NE

9th Ave NE

8th Ave NE

13th Ave NE

15th Ave NE

16th Ave NE

17th Ave NE

18th Ave NE

19th Ave NE

22nd Ave NE

Lowry Ave NE

27th Ave NE

35th Ave NE

37th Ave NE

40th Ave NE

44th Ave NE

49th Ave NE

53rd Ave NE

94

47

65

1st Ave NE

E Hennepin Ave

Central Ave

University Ave SE

SE 4th St

SE 5th St / Hennepin Ave

6th St NE

SE 7th St / 1st Ave NE

7th St NE

SE 8th St

3rd Ave NE

Spring St NE

14th Ave NE

18th Ave NE

18th 1/2 Ave NE

19th Ave NE

20th Ave NE

22nd Ave NE

23rd Ave NE

24th Ave NE

Lowry Ave NE

St Anthony Pkwy

35th Ave NE

37th Ave NE

39th Ave NE

40th Ave NE

41st Ave NE

43rd Ave NE

44th Ave NE

45th Ave NE

46th Ave NE

47th Ave NE

49th Ave NE

50th Ave NE

51st Ave NE

52nd Ave NE

53rd Ave NE

35W

3-LANE ROAD, LOW-SPEED

4-LANE PARKWAY, INTERMEDIATE-SPEED

CORRIDOR VISION 2

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Draft concepts for public review – final concepts are subject to change. 3/6/2023

LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane

- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange
- C Close Intersection
- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

N

0 1 2 4 8 Miles

4-LANE EXPRESSWAY, HIGH-SPEED

694 252 610 47 65 10 10

East River Rd

I-694 WB Ramp · 57th Ave NE · 61st Ave NE · Mississippi St NE · 69th Ave NE · 73rd Ave NE · Osborne Rd · 81st Ave NE · 83rd Ave NE · 85th Ave NE · University Ave NE

I-694 WB Ramp · I-694 EB Ramp · Medtronic Pkwy · Moore Lake Dr NE · 63rd Ave NE · Mississippi St NE · 72nd Ave NE · 73rd Ave NE · Osborne Rd · 80th Ave NE · 81st Ave NE · Middletown Road

FRIDLEY

SPRING LAKE PARK

BLAINE

4-LANE EXPRESSWAY, HIGH-SPEED

CORRIDOR VISION 3

Speed goals are noted for each roadway configuration shown.

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Draft concepts for public review – final concepts are subject to change. 3/6/2023

LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane

- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange

- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

0 1 2 4 8 Miles

N

3-LANE ROAD, LOW-SPEED

4-LANE PARKWAY, INTERMEDIATE-SPEED

3-LANE ROAD, LOW-SPEED

2-LANE PARKWAY, LOW-SPEED

MINNEAPOLIS

HILLTOP

COLUMBIA HEIGHTS

East River Rd

94

35W

47

65

Broadway St NE
8th Ave NE
9th Ave NE
13th Ave NE
15th Ave NE
16th Ave NE
17th Ave NE
18th Ave NE
19th Ave NE
22nd Ave NE
Lowry Ave NE
27th Ave NE
35th Ave NE
37th Ave NE
40th Ave NE
44th Ave NE
49th Ave NE
53rd Ave NE

1st Ave NE
E Hennepin Ave
Central Ave
University Ave SE
SE 4th St
SE 5th St / Hennepin Ave
6th St NE
SE 7th St / 1st Ave NE
7th St NE
SE 8th St
3rd Ave NE
Spring St NE
Broadway St NE
14th Ave NE
18th Ave NE
18th 1/2 Ave NE
19th Ave NE
20th Ave NE
22nd Ave NE
23rd Ave NE
24th Ave NE
Lowry Ave NE
St Anthony Pkwy
35th Ave NE
37th Ave NE
39th Ave NE
40th Ave NE
41st Ave NE
43rd Ave NE
44th Ave NE
45th Ave NE
46th Ave NE
47th Ave NE
49th Ave NE
50th Ave NE
51st Ave NE
52nd Ave NE
53rd Ave NE

CORRIDOR VISION 3

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LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane
- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange
- Right-of-way Impacts due to Roundabout
- Right-of-Way Impacts due to Freight Movements
- Right-of-way Impacts due to both Roundabout/Freight Movements

0 1 2 4 8 Miles

N

4-LANE PARKWAY, INTERMEDIATE-SPEED

4-LANE EXPRESSWAY, HIGH-SPEED

694 · 252 · 47 · 65 · 610 · 10 · 10

East River Rd · Mississippi

I-694 WB Ramp · 57th Ave NE · 61st Ave NE · Mississippi St NE · 69th Ave NE · 73rd Ave NE · Osborne Rd · 81st Ave NE · 83rd Ave NE · 85th Ave NE · University Ave NE

I-694 WB Ramp · I-694 EB Ramp · Medtronic Pkwy · Moore Lake Dr NE · 63rd Ave NE · Mississippi St NE · 72nd Ave NE · 73rd Ave NE · Osborne Rd · 80th Ave NE · 81st Ave NE · Middletown Road

FRIDLEY

SPRING LAKE PARK

BLAINE

CORRIDOR VISION 4

Speed goals are noted for each roadway configuration shown.

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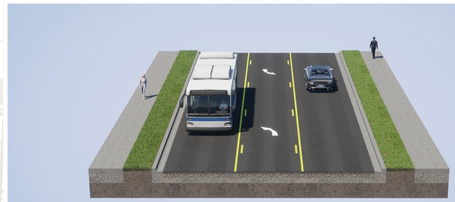
LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane
- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange
- Right-of-Way Impacts due to Freight Movements

N

0 1 2 4 8 Miles



3-LANE ROAD, LOW-SPEED

4-LANE PARKWAY, LOW-SPEED

3-LANE ROAD, LOW-SPEED

3-LANE ROAD, LOW-SPEED

MINNEAPOLIS

HILLTOP

COLUMBIA HEIGHTS

East River Rd

Broadway St NE

9th Ave NE

8th Ave NE

13th Ave NE

15th Ave NE

16th Ave NE

17th Ave NE

18th Ave NE

19th Ave NE

22nd Ave NE

Lowry Ave NE

27th Ave NE

35th Ave NE

37th Ave NE

40th Ave NE

44th Ave NE

49th Ave NE

53rd Ave NE

1st Ave NE

E Hennepin Ave

Central Ave

University Ave SE

SE 4th St

SE 5th St / Hennepin Ave

6th St NE

SE 7th St / 1st Ave NE

7th St NE

SE 8th St

3rd Ave NE

Spring St NE

Broadway St NE

14th Ave NE

18th Ave NE

18th 1/2 Ave NE

19th Ave NE

20th Ave NE

22nd Ave NE

23rd Ave NE

24th Ave NE

Lowry Ave NE

St Anthony Pkwy

35th Ave NE

37th Ave NE

39th Ave NE

40th Ave NE

41st Ave NE

43rd Ave NE

44th Ave NE

45th Ave NE

46th Ave NE

47th Ave NE

49th Ave NE

50th Ave NE

51st Ave NE

52nd Ave NE

53rd Ave NE

94

47

65

35W

CORRIDOR VISION 4

Speed goals are noted for each roadway configuration shown.

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LEGEND

- 2-Lane Parkway
- 3-Lane Road
- 4-Lane Expressway
- 4-Lane Parkway
- F Line Bus Rapid Transit
- Sidewalk
- Shared Use Path
- Sidewalk and Separated Bike Lane
- T Traffic Signal with crosswalks
- S Side-Street Stop with crossing enhancements
- R Roundabout with crosswalks
- L Limit access to Right In/Right Out
- J J-Turn with crosswalks
- G Grade Separated Interchange
- Right-of-Way Impacts due to Freight Movements

0 1 2 4 8 Miles

N

4-LANE PARKWAY, LOW-SPEED

4-LANE EXPRESSWAY, HIGH-SPEED

694 252 47 65 610 10 10

East River Rd

I-694 WB Ramp · 57th Ave NE · 61st Ave NE · Mississippi St NE · 69th Ave NE · 73rd Ave NE · Osborne Rd · 81st Ave NE · 83rd Ave NE · 85th Ave NE · University Ave NE

I-694 WB Ramp · I-694 EB Ramp · Medtronic Pkwy · Moore Lake Dr NE · 63rd Ave NE · Mississippi St NE · 72nd Ave NE · 73rd Ave NE · Osborne Rd · 80th Ave NE · 81st Ave NE · Middletown Road

FRIDLEY

SPRING LAKE PARK

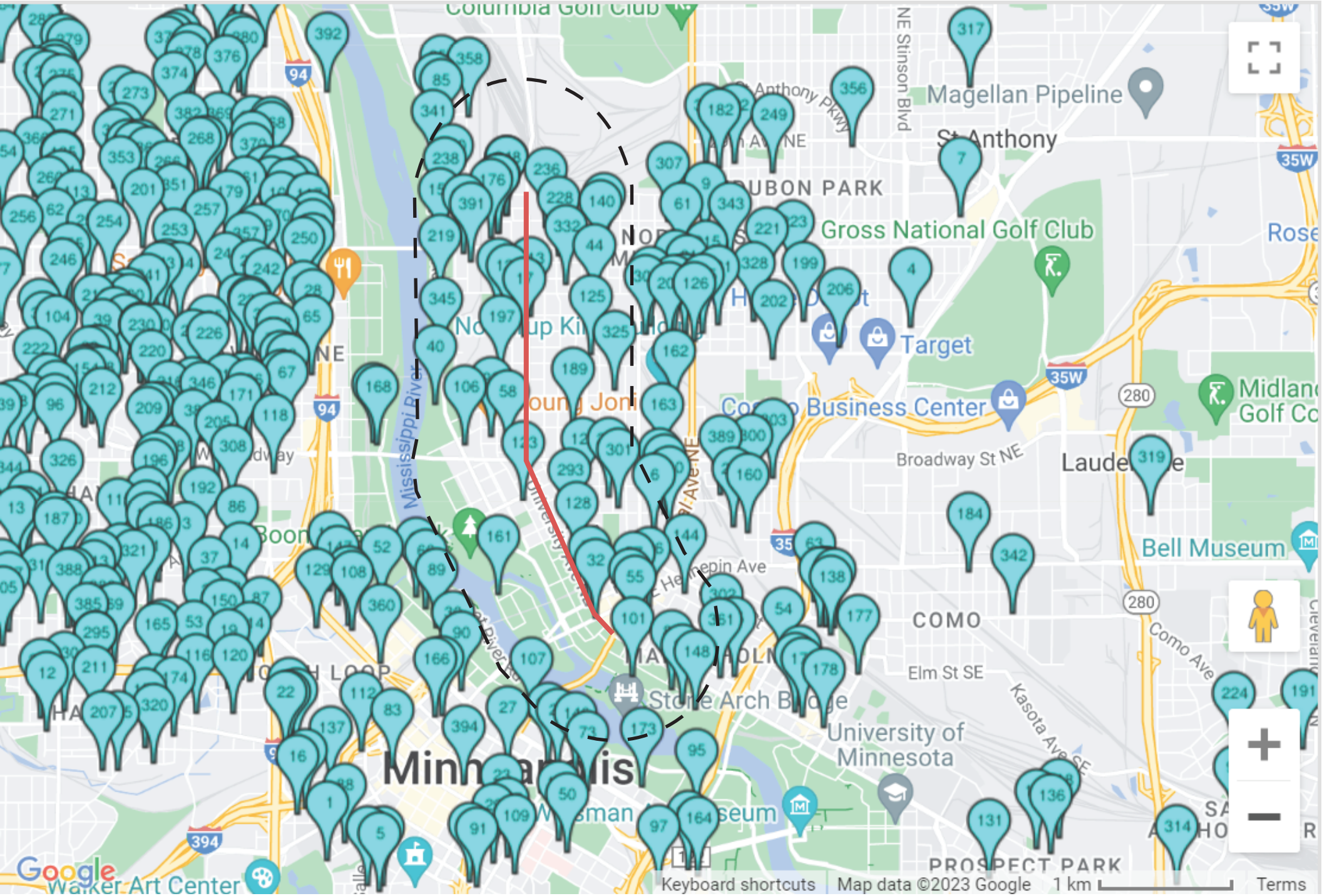
BLAINE

University Avenue NE Part of Section between Central Ave and 27th Ave NE																
Property_Name	Address	Development_Stage	Total_Units	Affordable_Units_Total	Affordable_0BR	Affordable_1BR	Affordable_2BR	Affordable_3BR	Affordable_4BR	Units_30AMI	Units_50AMI	Units_60AMI	Units_80AMI	Units_PctAffordable	Funding_Category
2910 Randolph St NE	2910 Randolph St NE	Preservation	2	1	0	1	0	0	0	0	0	1	0	50%	Local 4d
Saint Hedwigs	121 29th Ave NE	Preservation	107	60	10	50	0	0	0	25	35	0	0	56%	Project-Based Subsidy
2755 Marshall St NE	2755 Marshall St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
2632 Grand St NE	2632 Grand St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
2601 Randolph St NE	2601 Randolph St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
235 26th Ave NE	235 26th Ave NE	Preservation	1	1	0	0	0	0	0	0	0	1	0	100%	Local 4d
Gateway Northeast	2435 Marshall St NE	New Construction	129	77	51	46	21	10	0	10	16	51	0	60%	Subsidized - Other Tax Credit (LIHTC 4%)
2418 California St	2418 California St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Canvas Apartments	2301 California St NE	New Construction	160	160	0	20	76	64	0	24	0	116	20	100%	Subsidized - Other Tax Credit (LIHTC 4%)
125 Lowry Development	2500 NE 2nd St	Preservation	209	17	0	0	0	0	0	0	0	17	0	8%	Subsidized - Other
Clare Marshall Flats	2525 NE 2nd St	New Construction	36	36	0	36	0	0	0	0	0	36	0	100%	Tax Credit (LIHTC 9%)
2535 4th St NE	2535 4th St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
2403 5th St NE	2403 5th St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
2412 Jefferson St NE	2412 Jefferson St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Hook & Laddar Apts	2316 Jefferson St NE 2318 Jefferson St NE 640 24th Ave NE	New Construction	118	118	0	64	32	22	0	0	0	118	0	100%	Subsidized - Other Tax Credit (LIHTC 4%)
824 26th Ave NE	824 26th Ave NE	Preservation	1	1	0	0	0	0	0	0	0	1	0	100%	Local 4d
Central Avenue Lofts	2338 Central Ave NE 920 24th Ave NE	New Construction	66	53	0	22	14	17	0	0	0	53	0	80%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%) Tax Credit (LIHTC 9%)
2131 Marshall St NE	2131 Marshall St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
2212 6th St NE	2212 6th St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Washington Court Apts	2101 Washington St NE	New Construction	38	38	0	7	11	20	0	0	8	30	0	100%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%) Tax Credit (LIHTC 9%)
Bottineau Lofts	1901 NE 2nd St 1929 NE 2nd St	New Construction	37	37	2	7	17	11	0	11	0	26	0	100%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%)
Northeast - 1900 3rd St NE	1900 3rd St NE	Preservation	32	32	0	32	0	0	0	32	0	0	0	100%	Public Housing
Bottineau Commons	1800 University Ave NE 1808 University Ave NE	New Construction	119	94	0	28	48	18	0	25	0	69	0	79%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%)
1927 University Ave NE	1927 University Ave NE	Preservation	2	1	0	0	0	0	0	0	0	1	0	50%	Local 4d
Artspace Jackson Flats	901 18 1/2 Ave NE 1939 NE Jackson St	New Construction	35	30	0	7	16	7	0	4	3	23	0	86%	Tax Credit Subsidized - Other Tax Credit (LIHTC 9%)
19th & Central	1900 Central Ave NE	New Construction	51	11	0	10	1	0	0	0	11	0	0	22%	Tax Credit
1848 Quincy St NE	1848 Quincy St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
715 18 1/2 Ave NE	715 18 1/2 Ave NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Jackson Flats	901 18 1/2 Ave NE	New Construction	35	35	0	7	16	12	0	0	0	35	0	100%	Tax Credit (LIHTC 9%)
1822 Jackson St NE	1822 NE Jackson St	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Central Apts	1828 Central Ave NE	New Construction	61	61	61	0	0	0	0	61	0	0	0	100%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%) Tax Credit (LIHTC 9%)
1605 2nd St NE	1605 2nd St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
1501 Jefferson St NE	1501 Jefferson St NE	Preservation	2	1	0	0	0	0	0	0	0	1	0	50%	Local 4d
14th and Central	854 14th Ave NE	New Construction	175	175	23	59	47	41	5	25	0	150	0	100%	Tax Credit Tax Credit (LIHTC 4%)
1229 6th St NE	1229 6th St NE	Preservation	5	4	0	0	0	0	0	0	0	4	0	80%	Local 4d
Stonehouse Square Apts	215 Broadway St NE 1115 NE 2nd St 1117 NE 2nd St 1119 NE 2nd St 1114 NE 2nd St 1114 3rd St NE	Preservation	71	60	1	43	16	0	0	0	30	30	0	85%	Project-Based Subsidy Subsidized - Other
Northeast - 1206 2nd St NE	1206 NE 2nd St	Preservation	57	57	0	56	1	0	0	57	0	0	0	100%	Public housing
Grain Belt Terrace	1219 Marshall St NE 1215 Marshall St NE	Preservation	150	150	8	72	58	12	0	0	0	0	150	100%	Subsidized - Other
Northeast - 710 2nd St NE	710 NE 2nd St	Preservation	35	35	0	35	0	0	0	35	0	0	0	100%	Public housing
Northeast - 616 Washington St NE	616 Washington St NE	Preservation	35	35	0	35	0	0	0	35	0	0	0	100%	Public housing
628 Jefferson St Ne	628 Jefferson St Ne	Preservation	2	1	0	0	0	0	0	0	0	1	0	50%	Local 4d
671 Spring St NE	671 Spring St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Northeast - 809 Spring St	809 Spring St NE	Preservation	32	32	0	32	0	0	0	32	0	0	0	100%	Public housing
Spring Manor	828 Spring St NE	Preservation	189	189	0	188	1	0	0	189	0	0	0	100%	Public housing
Clare Apts	929 Central Ave NE 929 3rd Ave NE	New Construction	44	31	15	16	1	0	0	29	2	0	0	70%	Tax Credit Subsidized - Other Tax Credit (LIHTC 9%)
633 Polk St NE	633 Polk Sts NE	Preservation	1	1	0	0	0	0	0	0	0	1	0	100%	Local 4d
423 Taylor St NE	423 Taylor St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
Teamster Manor	808 3rd Ave NE	Preservation	24	24	0	4	12	8	0	24	0	0	0	100%	Project-Based Subsidy
St Anthonty Highrise	1815 Central Ave NE 311 University Ave NE	Preservation	48	48	0	48	0	0	0	48	0	0	0	100%	Public housing
440 4th St	440 4th St NE	Preservation	2	2	0	0	0	0	0	0	0	2	0	100%	Local 4d
East Bank Village Apts	14 University Ave NE 22 University Ave NE	New Construction	30	30	0	7	15	8	0	0	18	12	0	100%	Tax Credit Subsidized - Other Tax Credit (LIHTC 4%) Tax Credit (LIHTC 9%)
St. Anthony Historic	210 E Hennepin Ave 226 E Hennepin Ave	Preservation	20	20	10	10	0	0	0	0	0	20	0	100%	Tax Credit Tax Credit (LIHTC 4%) Tax Credit (LIHTC 9%)

Sum Total Units	*Sum Affordable Units*	*Sum Affordable 0BR*	*Sum Affordable 1BR*	*Sum Affordable 2BR*	*Sum Affordable 3BR*	*Sum Affordable 4BR*	*Sum Units at 30% AMI*	*Sum Units at 50% AMI*	*Sum Units at 60% AMI*	*Sum Units at 80% AMI*	*Average Percent Affordable*
2,191	**1,788**	**181**	**942**	**403**	**250**	**5**	**666**	**123**	**829**	**170**	**89%**

University Ave NE Reconstruction

Affordable Housing within 0.5 miles



University Avenue NE part of section between Central Ave and 27th Ave NE

Section 106 Historic Resources

Legend

- Project Corridor
- 0.5 mile project buffer
- National Register of Historic Places District
- National Register of Historic Places
- National Historic Landmark

0 0.2 0.4 0.8 Miles

N

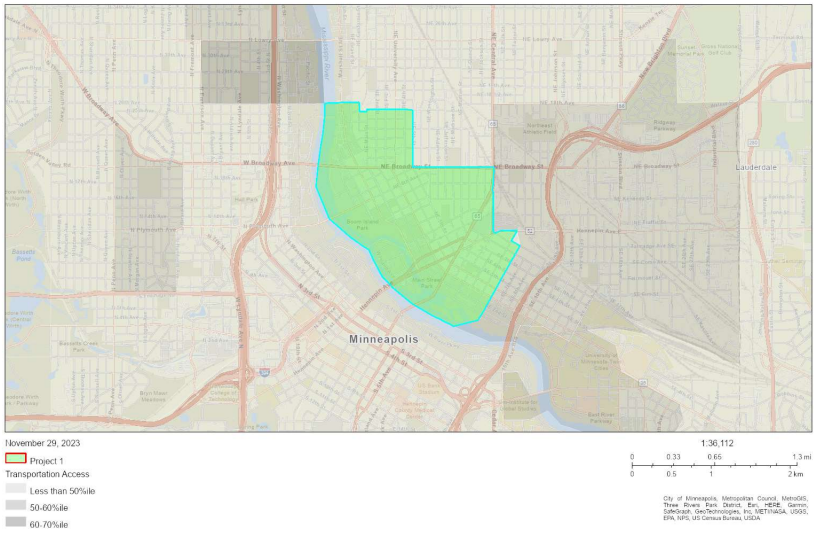
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

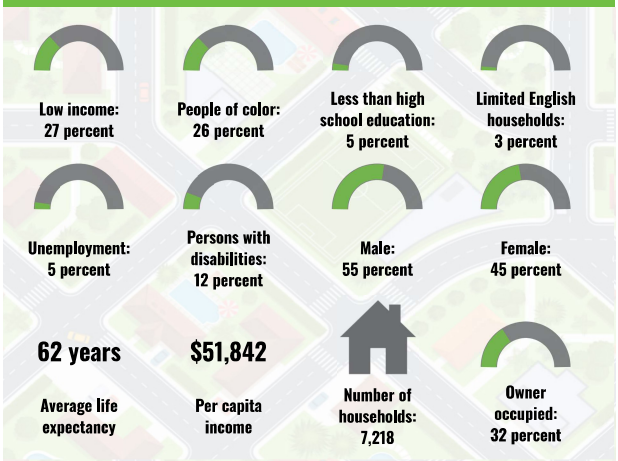
Minneapolis, MN

Tract: 27053002400,27053103000,27053103100,27053103600,27053103700
Population: 13,436
Area in square miles: 1.65

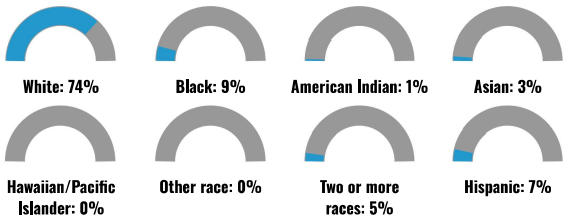
A3 Landscape



COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE

LIMITED ENGLISH SPEAKING BREAKDOWN

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	85%
Spanish	5%
French, Haitian, or Cajun	1%
Russian, Polish, or Other Slavic	1%
Other Indo-European	1%
Chinese (including Mandarin, Cantonese)	1%
Arabic	1%
Other and Unspecified	4%
Total Non-English	15%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

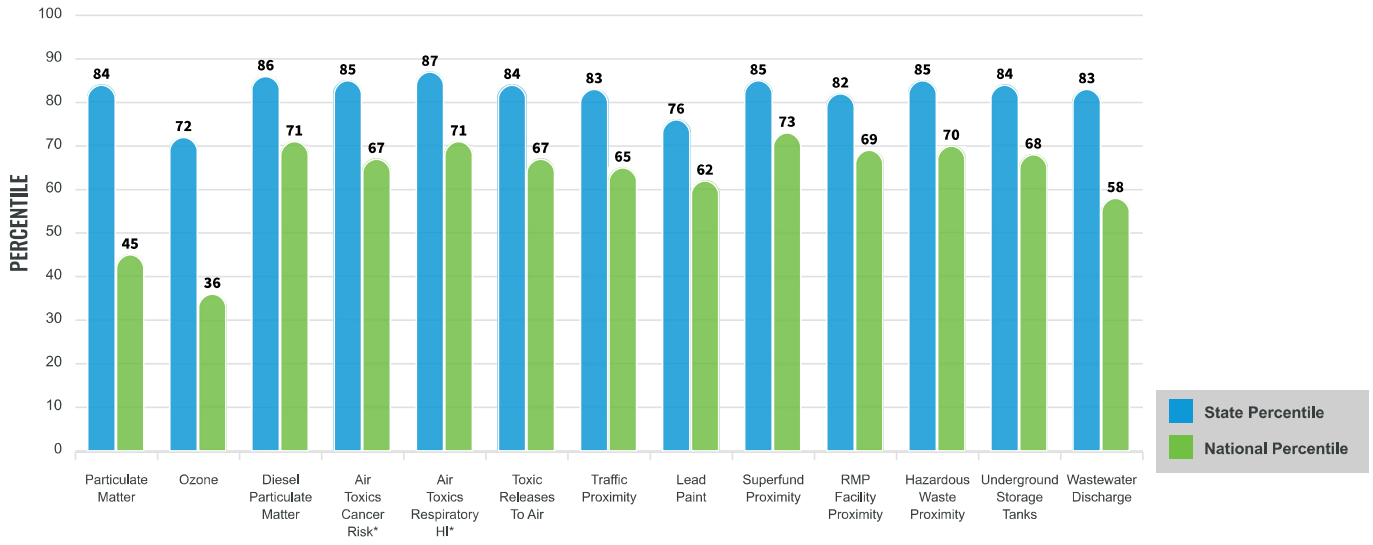
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

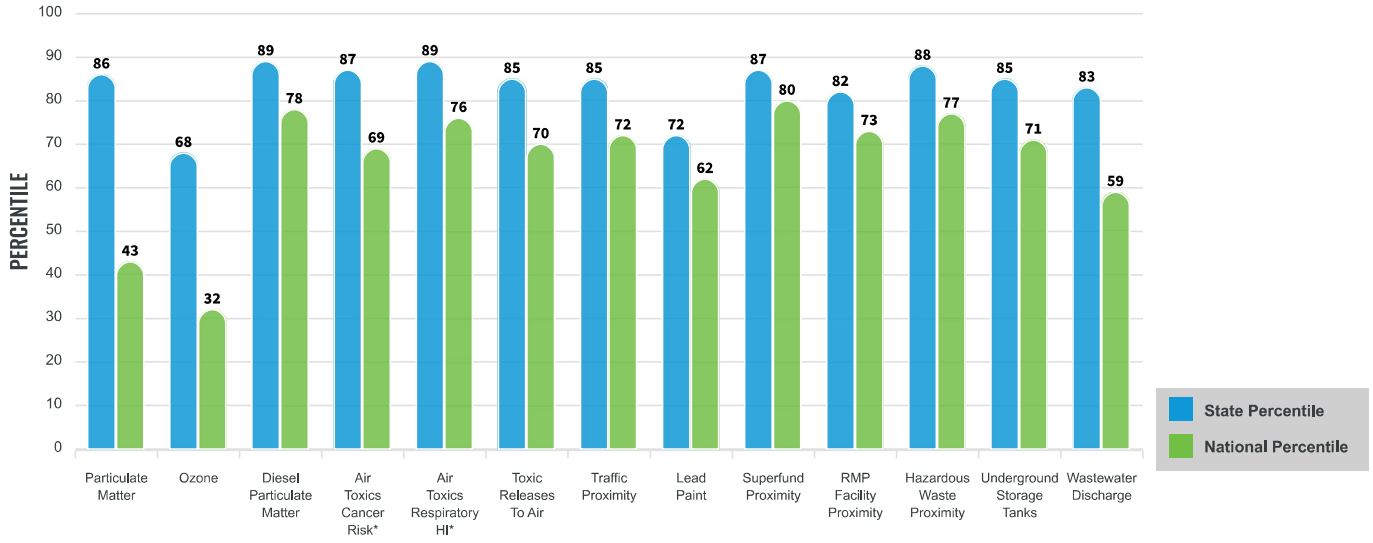
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 27053002400,27053103000,27053103100,27053103600,27053103700

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.79	6.78	85	8.08	39
Ozone (ppb)	58.6	58.2	52	61.6	28
Diesel Particulate Matter (µg/m^3)	0.586	0.21	99	0.261	94
Air Toxics Cancer Risk* (lifetime risk per million)	30	22	69	25	52
Air Toxics Respiratory HI*	0.4	0.26	83	0.31	70
Toxic Releases to Air	2,500	1,500	88	4,600	76
Traffic Proximity (daily traffic count/distance to road)	390	140	91	210	87
Lead Paint (% Pre-1960 Housing)	0.42	0.33	65	0.3	67
Superfund Proximity (site count/km distance)	0.87	0.19	94	0.13	97
RMP Facility Proximity (facility count/km distance)	1	0.48	85	0.43	88
Hazardous Waste Proximity (facility count/km distance)	10	1.3	98	1.9	96
Underground Storage Tanks (count/km^2)	10	1.8	97	3.9	89
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0047	0.19	83	22	61
SOCIOECONOMIC INDICATORS					
Demographic Index	26%	22%	73	35%	44
Supplemental Demographic Index	12%	11%	67	14%	45
People of Color	26%	20%	72	39%	45
Low Income	27%	23%	65	31%	50
Unemployment Rate	5%	4%	72	6%	59
Limited English Speaking Households	3%	2%	82	5%	70
Less Than High School Education	5%	7%	53	12%	35
Under Age 5	2%	6%	19	6%	26
Over Age 64	15%	17%	47	17%	48
Low Life Expectancy	17%	17%	40	20%	24

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	1
Water Dischargers	1
Air Pollution	8
Brownfields	6
Toxic Release Inventory	6

Other community features within defined area:

Schools	6
Hospitals	0
Places of Worship	10

Other environmental data:

Air Non-attainment	No
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	No
Selected location contains an EPA IRA disadvantaged community	Yes

Report for Tract: 27053002400,27053103000,27053103100,27053103600,27053103700

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	17%	17%	40	20%	24
Heart Disease	3.9	5.6	16	6.1	10
Asthma	8.9	9	47	10	22
Cancer	4.8	6.4	13	6.1	21
Persons with Disabilities	11.8%	11.4%	59	13.4%	45

CLIMATE INDICATORS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	9%	8%	61	12%	60
Wildfire Risk	0%	4%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	11%	11%	55	14%	51
Lack of Health Insurance	6%	5%	69	9%	41
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Footnotes

Report for Tract: 27053002400,27053103000,27053103100,27053103600,27053103700

University Ave (TH 47) Complete Streets

Existing Conditions - Site Photos

View: University Ave (TH 47) looking east towards Bank St. Wide crossings for pedestrians and bicyclists across University Ave.

View: Intersection of University Ave (TH 47) and 1st Ave, looking to the north.

View: Unsignalized intersection of University Ave (TH 47) and 7th Ave, looking east.

View: Signalized intersection of University Ave (TH 47) and 5th Ave, looking north from University Ave.

Executive Summary

Hennepin County bicycling vision:

Riding a bicycle for transportation, recreation, and health is a comfortable, fun, routine part of daily life throughout the county for people of all ages and abilities.

Bike plan purpose

Hennepin County envisions a future where residents are healthy and successful, living in safe and vibrant communities. A robust on- and off-street bikeway system serving all ages and abilities that complements other transportation modes and land use will play a significant role in achieving this vision, promoting economic strength, quality of life, and community vitality.

The Hennepin County Bicycle Transportation Plan updates the 1997 Bicycle Plan to guide how, where and when the county and Three Rivers Park District build bikeways and support facilities. It sets the expectation that all people should be comfortable and safe while biking.

Why bicycling?

Bicycling accounts for 2.5 percent of all trips in Hennepin County, more than double the national average. Ridership is increasing rapidly while driving nationwide has been steadily decreasing since 2007.

With the expectation that these trends will continue, the county and park district are committed to creating a bicycle environment that meets the needs of people currently biking and those who will be new to biking. A robust, well-used bicycle network benefits far more people than just the person bicycling today.

What People Want

Hennepin County and Three Rivers Park District reached out to 2,700 people to get their opinion on how to improve bicycling in Hennepin County. They said:

» Overcome physical barriers to bicycling, such as rivers, highways, gaps and railroads.

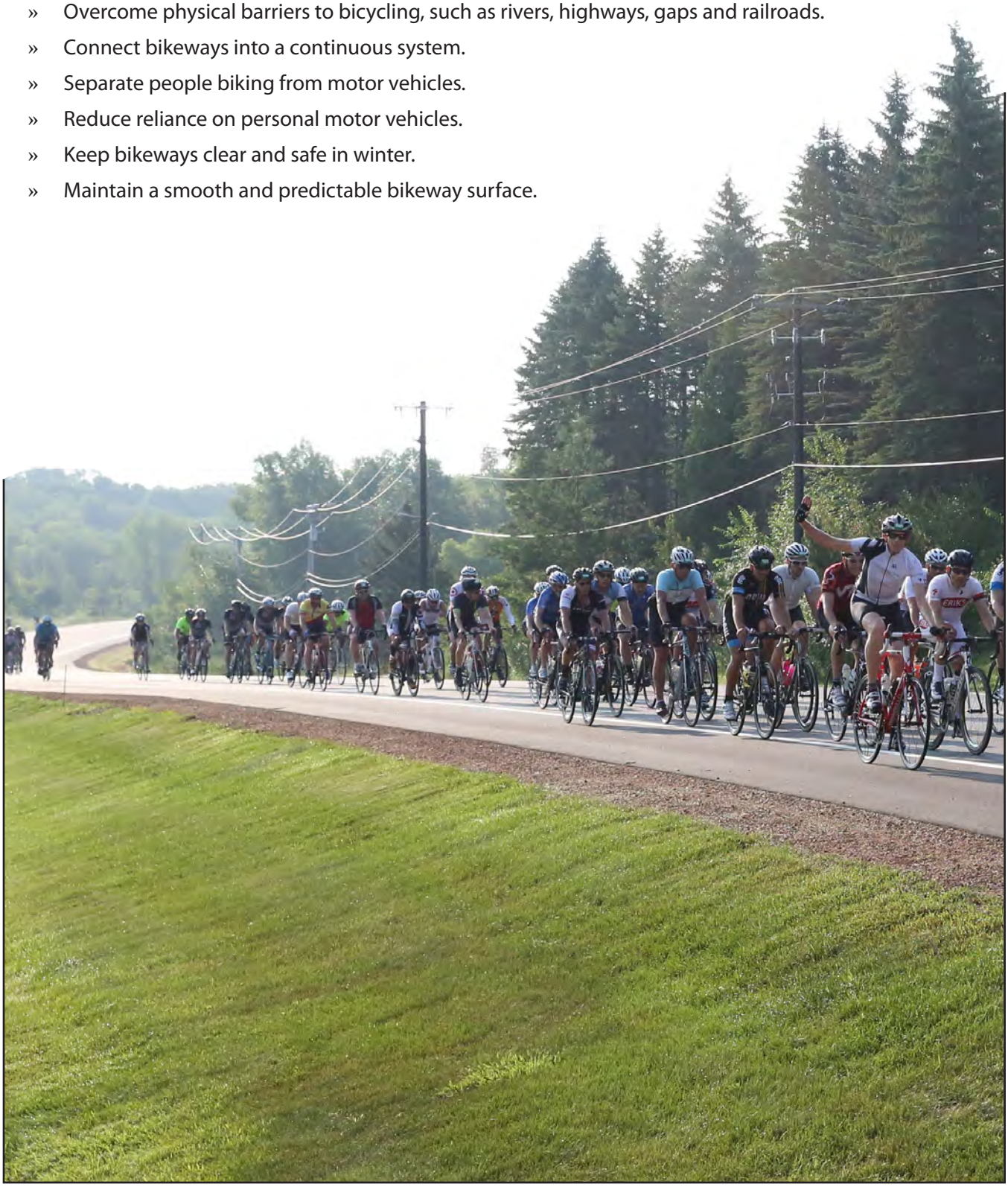
» Connect bikeways into a continuous system.

» Separate people biking from motor vehicles.

» Reduce reliance on personal motor vehicles.

» Keep bikeways clear and safe in winter.

» Maintain a smooth and predictable bikeway surface.

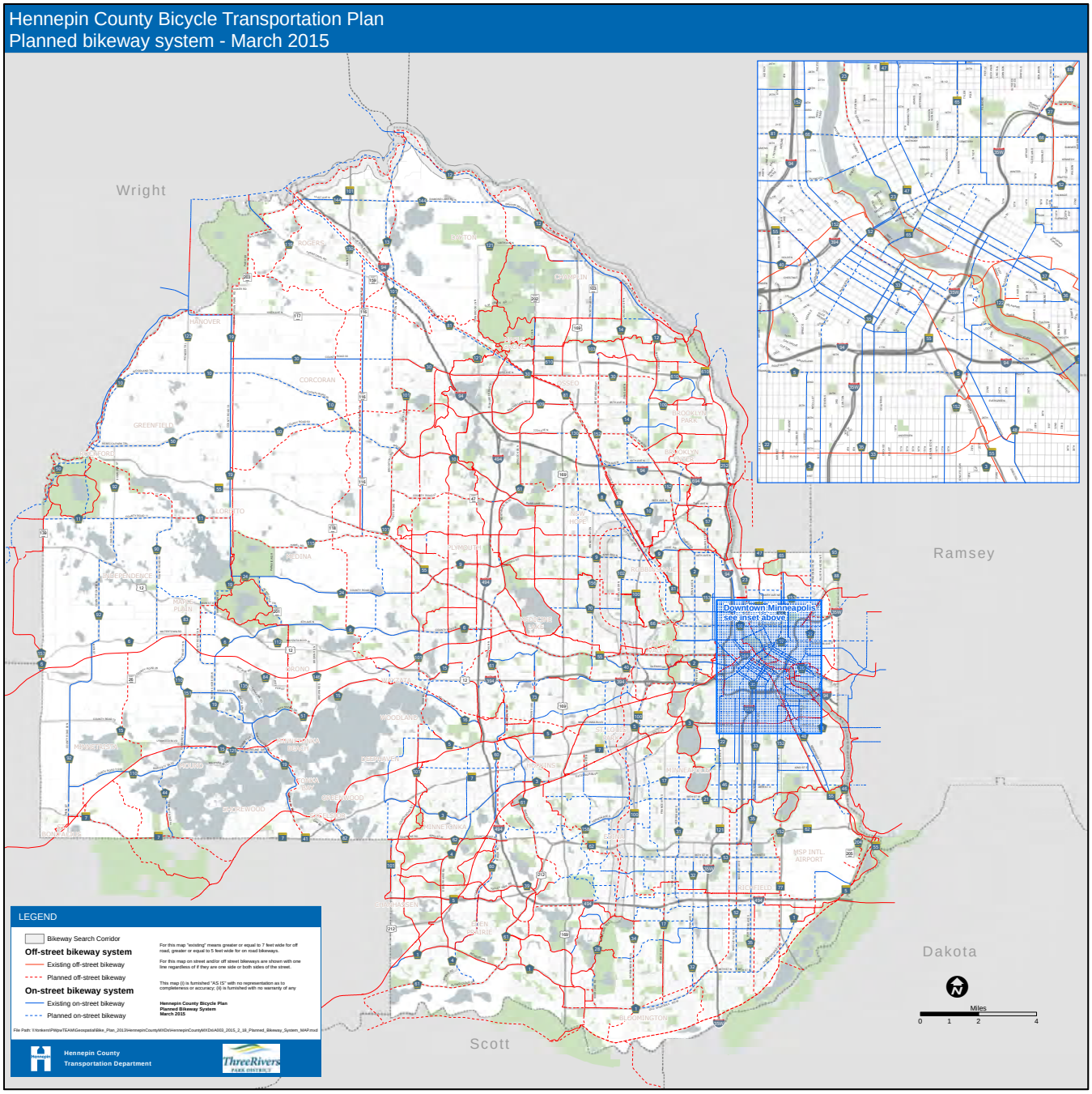


Hennepin County 2040 Bikeway System

The existing bikeway system includes 651 miles of on- and off-street bikeways. The 2040 Bikeway System includes 540 miles of new planned bikeways, with almost half of the added system off-street. Implementing the 2040 Bikeway System will require ongoing political and public support to build an average of 20 miles of bikeway each year.

Table i: Annual mileage target for full system build-out

	Three Rivers Park District	Hennepin County	Planned system
Off-street bikeways	7.2	1.9	***9.1***
On-street bikeways		11.5	***11.5***
Total	***7.2***	***13.4***	***20.6***



Community engagement themes

Across the spectrum of engagement activities, the following key themes emerged:

- People recognize and appreciate the many assets for bicycling already in place
- People ride bicycles for transportation and recreation and want opportunities to do both
- 55 percent report using a bicycle for commuting to work or school two or more days a week
- 58 percent report using a bicycle for recreation two or more days a week
- People prefer bikeways with buffer space or barriers between them and motor vehicles
- People want better conditions for bicycling throughout the county, specifically citing the following needs:
    - *Improve connections from neighborhoods to regional trails and local destinations*
    - *Continue to address gaps in the trail network, intersections, and trail crossings*
    - *Improve coordination between jurisdictions*
    - *Improve education and enforcement of traffic laws*
    - *Provide consistent ongoing maintenance for bikeways*
    - *Address challenges that exist on county roadways such as intersections and high volume roads*
    - *Address safety from motor vehicles, safety from crime and perceived safety to address barriers to biking*
    - *Improve end of trip facilities (e.g. secure bike parking)*
    - *Separate bicycles from other modes (including pedestrians) where possible*

Please refer to appendix A (Community facilitation and engagement for the Hennepin County Bicycle Transportation Plan) for a full report on engagement activities and results.

Among survey respondents, bicycling routinely is used for transportation in addition to being a popular form of recreation. Respondents also identified what discouraged them from biking more often in Hennepin County. The most commonly cited barriers were:

- Too much traffic or too high speed on roads
- Snow in on-street bikeways or trails
- Lack of connections to destinations

Survey respondents and public workshop participants also rated their level of comfort biking on the photographed facility types below from one to nine (higher values are more comfortable). Figure 1 shows results of this outreach.

Participants overwhelmingly preferred images of protected bikeways physically separated from motorized traffic, rather than on-street bikeways. The cycle track images and off-street shared-use trail (images A through F), scored highest. The least preferred bikeway images were of streets without clearly defined space for bicycling (images O, Q and R) or with shared lane markings (image P). However, an image of a low-volume residential street without any markings (image J) was cited as somewhat comfortable by most respondents. This is consistent with research that shows bicyclists are more comfortable sharing the street with motor vehicles when travel speeds and volumes are low.

These results informed the recommended types of bikeway design treatments and formed the basis for the goals of this plan.

- Project working team (PWT) composed of Hennepin County staff, Three Rivers Park District staff, a BAC representative, and the consultant team

The project working team reviewed previous and current planning efforts to ensure this plan complements other efforts by the county, park district, Metropolitan Council, the state, and other agencies. The policy framework chapter clarifies how this plan relates to other initiatives.

Community engagement and participation

Working together, Hennepin County and Three Rivers Park District developed and implemented community engagement to identify characteristics and attitudes of residents regarding bicycling. This outreach provided a wealth of information, including guidance on policy priorities, vision, network development, and preferred bikeway design treatments. More than 2,700 people contributed to this plan.

Public workshops

Three large format public workshops across the county yielded public guidance.

Community listening sessions

Ten community listening sessions with focus populations (including health-disparity populations) included small-group activities and discussion with assistance from community organizations.

Online engagement

A public website (www.hennepin.us/bikeplan) shared updates on engagement and project information. An online survey and an interactive map were engaged stakeholders who preferred those options or who could not attend events.

Community events and other in-person engagement

Feedback was gained during community festivals and meetings, including Minnehaha Open Streets, Lowry Open Streets, the Richfield Farmer's Market, and at meetings of the Northwest Hennepin County League of Municipalities and the Hennepin County Bicycle Advisory Committee.

Please refer to appendix A for a full report on engagement activities and results.

Living document/plan updates

The plan will be a living document continually evaluated and updated to meet evolving community needs and innovations. Minor updates will occur regularly and may address:

- Bikeway system map
- Gap map (top prioritized gaps)
- Measures / statistics (system mileage, miles built per year, gaps removed, etc.)
- Design guidelines — typical sections
- Appendices — any references to current capital improvement or paving projects

Major plan updates generally will follow a 10-year schedule to align with Metropolitan Council review of comprehensive plans. The plan update will likely precede the update of the county's transportation plan and its comprehensive plan. Due to emerging concepts and bikeway system maturity, it may be prudent to initiate a partial revision at five years. Comprehensive plans will be completed in 2018, so this plan could be revised in 2017-2018. The Hennepin County bicycle transportation plan and updates will be posted at www.hennepin.us/bike. Major plan updates may address:

- Policies (via board adoption)
- Vision, goals, objectives
- Strategies
- Cost participation policies
- Bulk of the Hennepin County bicycle transportation plan document text

The 2040 bikeway system

The 2040 bikeway system includes 540 miles of new planned bikeways. Full implementation of this plan will increase county bikeway system mileage by 81 percent, with almost half of the added system off-street (44 percent off-street; 41 percent on-street and 15 percent not determined).

The process for developing the 2040 bikeway system relied heavily on an analysis of bicycle elements from current comprehensive plans and related planning documents from cities in Hennepin County. As stated previously, only locally planned bikeways with regional significance, meaning those that met some of the criteria described at the beginning of this chapter, were included as part of the 2040 bikeway system.

The 2040 bikeway system builds upon the 1997 bike plan map and subsequent updates, incorporating many of the bikeways recommended in the 1997 bike plan that have not yet been built. During the almost two decades of implementation that have occurred since the adoption of that plan, a number of conditions and assumptions have changed. For instance, the 1997 bike plan included planned bikeways on some rail corridors, anticipating a continued decline of rail freight activity. However, this trend has since somewhat reversed, and alternate routes have been added to the updated system until rail corridors are available.

A summary of the planned system coverage is provided in Table 3 and shown in the planned bikeway system map (Figure 10).

The 2040 planned bikeway system identifies 238 new miles of off-street bikeways to be implemented as multi-use trails or cycle tracks, either along roadways or in independent alignments (i.e. rail, utility or riparian corridors). The planned system includes 298 new miles of on-street bikeways. For planned on-street bikeways, the plan identifies the route where the bikeway should be implemented but not the specific facility type (i.e. shoulder, bike lane, protected bike lane, or cycle track). Selecting the appropriate facility type will occur either during discussions with cities at the time of development, during the project development process, or prior to a major maintenance effort. In all cases, the decision will be based on the local context, roadway characteristics, community input, and county bikeway design guidance.

Table 3: Hennepin County bikeway system mileage 1997 and 2040

	Planned system in 1997	The 2040 planned system
Existing miles	350	651
Planned miles	480	540
Total miles	**830**	**1191**

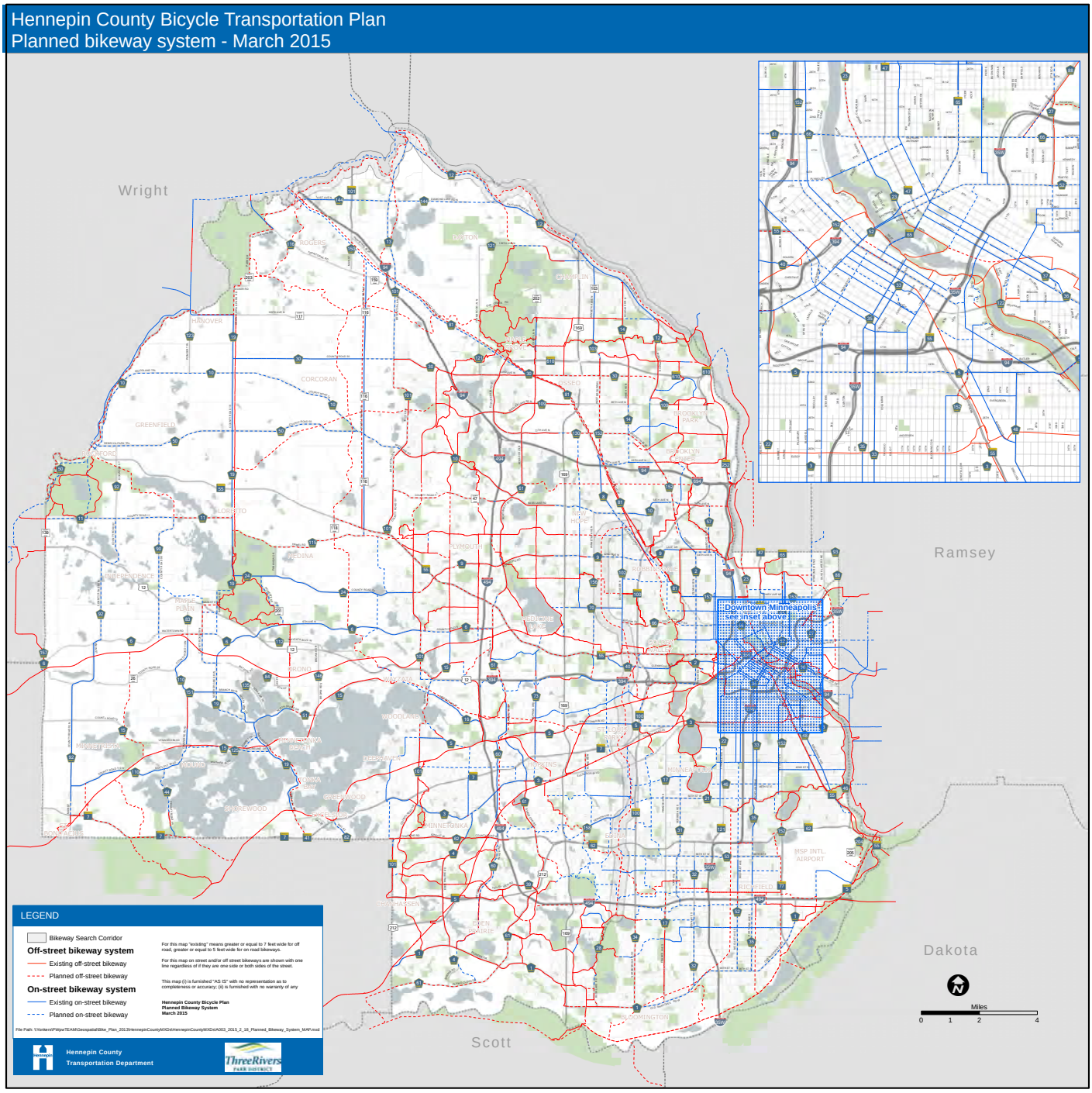


Figure 10: 2040 bikeway system

Table 4: Hennepin County bikeway system mileage

	Existing System	Planned System
Off-street planned bikeway	425	238
On-street planned bikeway	226	302
Total 2040 planned system	**651**	**540**

Summary of Three Rivers Park District regional trail system

Full implementation of this plan will also achieve significant gains for the Three Rivers Park District regional trail system. The 2040 bikeway system, when implemented, will increase the planned regional trail system to 395 miles. There are 200 miles of trails in the existing regional trail system. There are an additional 60 miles of local trails that are being considered for inclusion in the regional trail system (these are existing trails that have already been constructed). An additional 195 miles of proposed new trails are included in this plan. Table 5 summarizes the planned Three Rivers Park District regional trail system, and figure 11 shows the existing and planned trails.

Bikeway corridors and gaps

The safety of people when biking is a fundamental principle at the core of this plan. Continuity of the bikeway network is essential to ensure bicycle safety, therefore gaps and barriers must be addressed. The quality of the bicycling environment is also a key to safety. Geometric design and traffic controls at intersection crossings must accommodate bicycle movements. With these issues in mind, strategies 2.1 and 2.2 highlight the basic elements necessary to support increased bicycling. These strategies are supported by a number of specific actions that are identified in the summary chart at the end of this chapter.

All of the planned segments that make up the 2040 system have been sorted into corridors and gaps.

Bikeway corridors

Planned bikeway corridors will expand the coverage and connectivity of the overall system. These corridors are longer (1/2 mile or more) and provide key connections to local bikeway networks. Ninety-six percent of the planned bikeway mileage is in bikeway corridors (518 of 540 total miles). Table 6 summarizes the planned bikeway corridors by type and mileage. The top 25 bikeway corridors are in Table 13 and a full corridor list is in appendix D.

Bikeway gaps

Locations classified as bikeway gaps are short (1/2 mile or less) connections that are needed to ensure continuity in the bikeway system. Completing gaps can be particularly challenging, as they are usually caused by barriers that are difficult or costly to cross, such as highways, waterways, rail corridors, or pinch points where right-of-way is limited. The county has a dedicated funding source called the bikeway gap fund that is tied specifically to closing gaps identified in this plan. Figure 12 shows the gap locations and Table 6 summarizes the gaps by planned bikeway type and mileage. A full list of the identified bikeway gaps by project ID is included in appendix E.

Strategy 2.1 *Provide elements that increase safety along corridors and at intersections.*

Strategy 2.2 *Address network gaps and barriers.*

**see the chart at the end of the chapter for specific actions that will be taken to support the strategies.*

Table 5: Three Rivers Park District existing and planned trail system mileage

Proposed Three River Park District regional trail system	Mileage
Existing regional trail system	140
Existing trails proposed to be added to the regional trail system	60
Planned additions to the regional trail system	195
Total	**395**

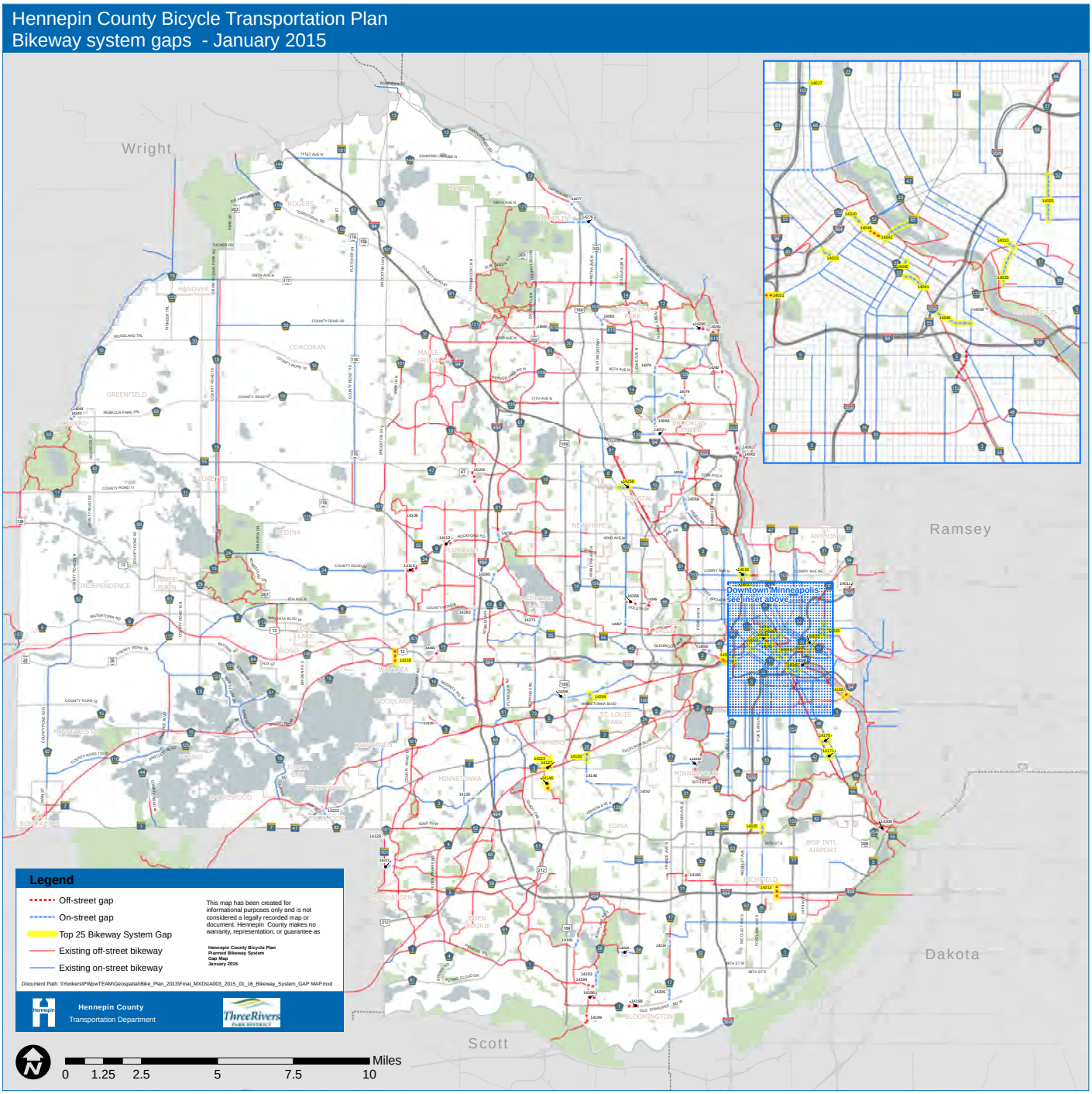


Figure 12: Bikeway system gaps

Table 6: Total 2040 Planned Bikeway System

	Corridors		Gaps	
	Number	Miles	Number	Miles
Off-street planned bikeway	68	231	25	7
On-street planned bikeway	165	287	56	15
Total 2040 planned system	**233**	**518**	**81**	**22**

Building a bikeway system to serve all users

As described in chapter one, there is a significant portion of the population that does not currently ride a bike but would be interested in biking if conditions were safer or more comfortable. Building a bikeway system that works for the interested but concerned population will require more than just the implementation of the routes described in this chapter. This section outlines six key areas that will complement the bikeway system, including:

- Designation of an enhanced bikeway network
- End of trip support facilities
- Better connections between transit and bicycling
- Bike share programs
- Integration among county, local and regional bikeways
- Refinements to the system over time

A discussion of each strategy area is below. A summary chart showing all recommended strategies and actions is at the end of this chapter.

Designate an enhanced bicycle network

A consistent theme that emerged from this plan's public engagement was a strong preference for bikeways that provide a higher level of safety and comfort. Throughout this plan's engagement process, the project team heard from people of all ages and abilities who do not feel comfortable riding adjacent to fast motor vehicle traffic, even when bike lanes are provided. While buffered bike lanes were viewed as a significant improvement, increased separation from motor vehicles with a physical barrier was the most desirable bicycle facility type. This is supported by recent research on bicycling preferences in other communities.

Other local and regional bikeway studies follow a similar approach. The Metropolitan Council recently completed a regional bicycle system study,[22] which notes that some bikeways are more significant from a regional standpoint and should provide a higher quality of service. For this reason, the study defines a priority system within the bikeway network. At the same time, the City of Minneapolis has initiated a near-term plan for a protected bikeway system that will provide a higher level of safety and comfort.

Based on these related initiatives and community feedback, strategy 2.3 highlights the need to define an enhanced network within the countywide bikeway system providing enhanced safety and comfort for users. Criteria should be established to determine if a bikeway is eligible for the enhanced network. Examples may include bikeways that are:

Strategy 2.3 *Plan and designate an enhanced bicycle network composed of high comfort bikeways that provide physical separation from motor vehicles.*

Modal Plans and System Elements

Mobility 2040 provides overarching guidance for transportation decisions that filter down into specific plans and programs for each part of the transportation system. While we are involved in most aspects of the transportation system, our role varies depending on mode.

Pedestrian Plan

2040 Bicycle Plan

Sales and Use Transportation Tax Implementation Plan

Freight Study

ADA Transition Plan

Asset Management

Complete Streets Policy

Cost Share Policy

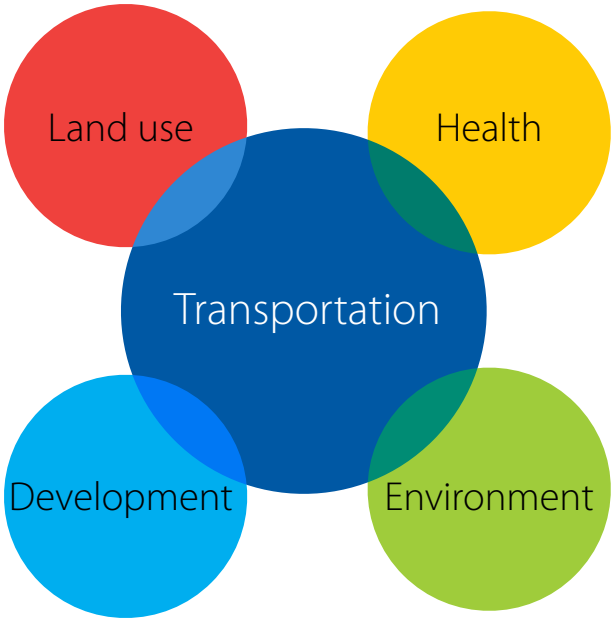
Full documents can be found at www.hennepin.us/your-government/projects-initiatives/comprehensive-plan

Beyond Transportation

Key supporting plans and initiatives

Through internal and external partnerships, Hennepin County uses multimodal transportation investments to leverage our investments in community and economic development, environment and natural resources, affordable housing, community health, and employment.

Leveraging investments to meet multiple goals maximizes our return on investment and moves us towards being a more prosperous, livable, connected, resilient and equitable county.



Land Use

Transportation facilities and services have enormous effects on land use patterns. The form, function, and location of land use development affects the need for transportation facilities. This is a long-standing relationship evidenced by the history of railroad towns and automobile-oriented suburban development. Strong integration and collaboration between transportation and land use will enable us to better manage growth, improve the efficiency of travel, and contain infrastructure costs.

Transit Oriented Development (TOD)

Established in 2003, the Hennepin County TOD program provides needed capital to housing and economic development projects along transit corridors. From 2003 to 2017, over $36 million has been awarded, leveraging over $1 billion in public and private investment.

Community Works

Hennepin County Community Works partners with cities and other agencies, businesses, neighborhood organizations and residents to build the long-term value of communities, create and sustain great places, and make quality investments in redevelopment, transportation, public works infrastructure, parks, trails and the environment. Over $89 million has been invested in Community Works program areas, leveraging $883 million in public and private investment.

Active Living

Active Living provides safe, desirable and convenient opportunities to integrate physical activity into daily routines through biking, walking or taking transit, while building healthier and safer communities. Since 2006, Hennepin County has been a national leader in developing an Active Living program. Success continues to grow through Active Living Hennepin County, a partnership with cities, community organizations and other agencies to address policy change through infrastructure planning, targeted workshops and supportive tools (model policies, guidelines, toolkits).

Health in All Policies

Health in All Policies (HiAP) institutionalizes the consideration of health, eliminating disparities, and sustainability into decision-making across all sectors and at all levels to improve the health of communities and people.

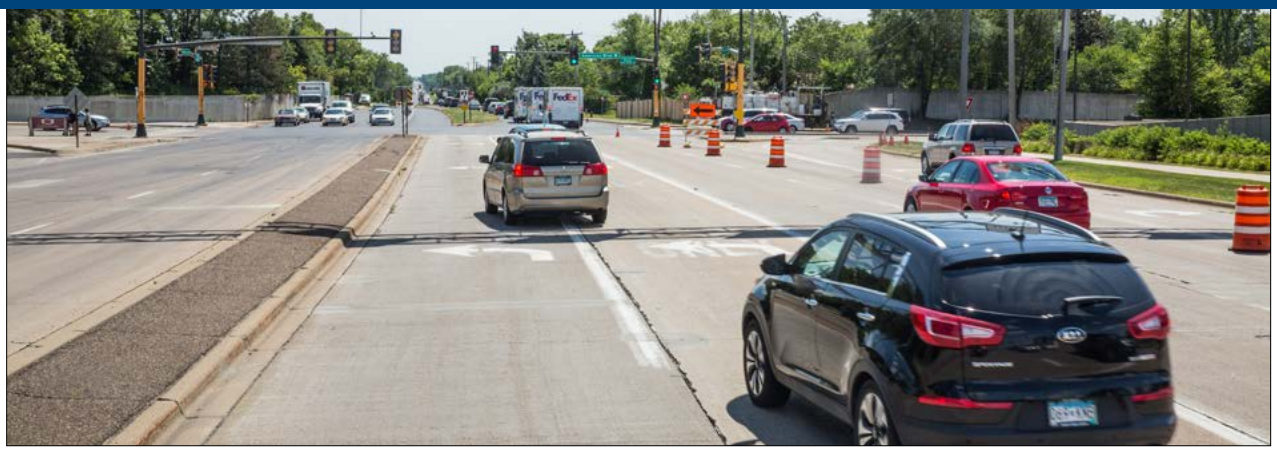
Natural Resources Strategic Plan

Hennepin County's natural resources strategic plan guides the county and its partners in responding to natural resource issues and developing internal and external policies, programs and partnerships that improve, protect and preserve natural resources.

What We Heard

To inform development of the Hennepin County Comprehensive Plan and Mobility 2040, the county invited internal staff and observers of local and regional affairs, or "thought leaders" to share their thoughts and perspectives about the key issues and challenges facing the county. Between September 2016 and January 2017, four special meetings were devoted to panel discussions, or "idea forums" where participants were asked to share key issues and challenges facing Hennepin County over the next 10 to 20 years — as well as what they would recommend Hennepin County do to address these issues and challenges to remain successful. For more information, visit: www.hennepin.us/your-government/projects-initiatives/comprehensive-plan

Goal: Preserve and modernize our transportation system



Objectives

- Preserve and maintain the existing system to ensure it is in a state of good repair
- Prioritize preservation and maintenance of the existing system over system expansion
- Consider life-cycle costs to ensure we can maintain what we build
- Maximize the efficiency and effectiveness of our system through technological innovation
- Utilize right-of-way to expand access to communications and improve the movement of information, goods, people, and services

Supporting plans, programs, projects and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Bridge Maintenance Program

Advanced Traffic Management System (ATMS)

Complete Streets Policy

Capital Improvement Program (CIP)

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Preservation				
	Bridge sufficiency rating (less than 50)	↓	5.4%	4%
	Pavement serviceability rating (PSR) (greater than 3.0)	↑	63.2%	67%
	Overlay lane miles (annual)	↓	149	110
Modernization				
	% of signals connected	↑	3%	100%
	Complete streets (projects inclusive of complete streets elements)	→	100%	100%

Goal: Improve safety, reliability and comfort for all transportation users

Objectives

- Improve safety and comfort for all system users, especially the disabled, elderly and youth
- Safely integrate modes through design, education, and enforcement
- Reduce congestion and improve travel time predictability and reliability for all system users to ensure the on-time delivery of goods and most efficient use of time
- Reduce the transportation system's vulnerability to natural and man-made incidents and threats

Supporting plans, programs, projects and partnerships

County Roadway Safety Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Advanced Traffic Management System (ATMS)

Capital Improvement Program (CIP)

Travel Demand Management programs

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Safety				
	Crash rates (per million vehicle miles)	↓	3.35	1.68
Reliability				
	Hours to plow snow — Rural	→	4:19 hours	5 hours
	Hours to plow snow — Urban	→	4:30 hours	5 hours
	Average commute time (minutes)	↓	22.2	Below national average
Congestion				
	Volume to capacity ratio (all roadways)	↓	TBD	v/c < 1
	Intersection (county) level of service (LOS)	↑	TBD	LOS D or better

Goal: Provide affordable transportation choices and convenient access to destinations

Objectives

- Expand multi-modal travel options for people of all ages and abilities to connect to jobs and other opportunities
- Operate our system to efficiently and cost-effectively connect people and freight to destinations
- Provide a transportation system that is affordable and available to all users, regardless of mode of choice, ability or economic status
- Create connectivity within and between transportation modes to improve mobility
- Reduce transportation costs, especially for people in areas of poverty

Supporting plans, programs, projects and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Sales and Use Transportation Tax Implementation Plan

Transit Oriented Development (TOD) Program

2040 Bicycle Transportation Plan

AHIF, HOME, CBDG

Hennepin County Consortium Consolidated Plan

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Affordability				
	Housing + Transportation Cost Index	→	44%	< 45%
Choices				
	Bike to work — percentage	↑	1.8% (2016)	3.4%
	Walk to work — percentage	↑	3.4% (2016)	5%
	Regional transit ridership	↑	27 million	Double
	Mode split (single occupant vehicles downtown Minneapolis)	↓	60%	< 60%
Access				
	Number of households within ½ mile of Blue and Green lines	↑	TBD	TBD

Goal: Improve our transportation system to enhance quality of life, health, livability, and competitiveness

Objectives

- Create healthy and livable communities by including pedestrian, bicycle, and transit facilities in roadway projects
- Strengthen the connection between land use planning and transportation to promote orderly growth and development
- Target our transportation investments to create opportunities for people to live active and healthy lifestyles
- Link transit, bicycle, pedestrian and road projects to housing, jobs and recreational opportunities
- Provide convenient, affordable access to destinations, especially for residents experiencing high transportation and housing cost burden
- Implement context-sensitive projects that respect cultural, historic and natural resources
- Use transportation investments to support broader county goals including growing our economy, reducing disparities, improving health, enhancing livability, and protecting the natural environment

Supporting plans, programs, projects and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Sales and Use Transportation Tax Implementation Plan

Transit Oriented Development (TOD)

AHIF, HOME, CBDG

Natural Resources Strategic Plan

Complete Streets Policy

Hennepin County Consortium Consolidated Plan

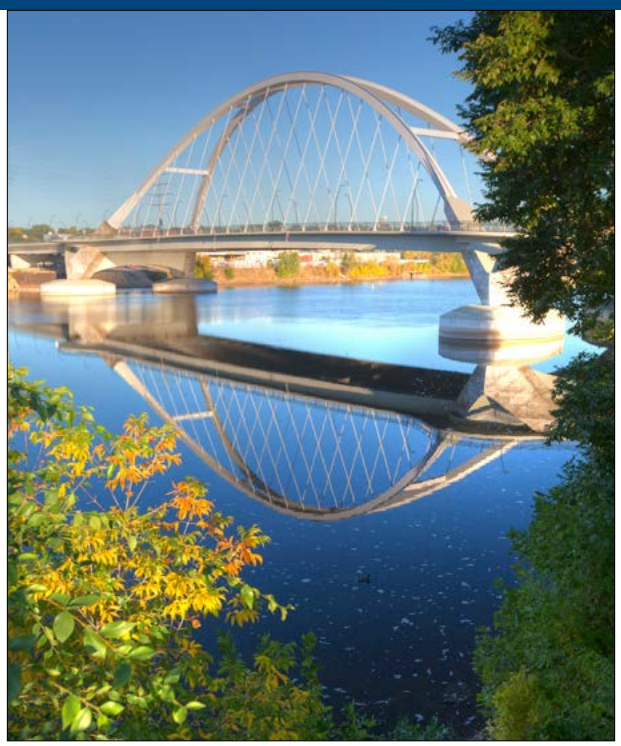
Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Quality of life/livability				
	ADA pedestrian ramps in compliance	↑	53%	100%
Health				
	Number of miles of bicycle facilities built/year	↑	18	20
Competitiveness				
	Number of jobs	↑	920,000 (2020)	1.03 million (2040)

Goal: Create a transportation system that protects and enhances the environment

Objectives

- Reduce energy use and/or use alternative power to reduce emissions and benefit air and water quality
- Decrease the risk of flooding for facilities through location and adaptive design
- Minimize exposure to natural and man-made hazards
- Mitigate the negative stormwater impacts that degrade the region's valuable gray and green infrastructure
- Use transportation projects as opportunities to restore or improve natural resource features and habitat
- Promote the installation of stormwater BMPs, sustainable landscapes and improve the tree canopy in transportation corridors
- Explore and implement road salt reduction strategies
- Improve air quality by encouraging alternate modes of transportation and shorter commutes



Supporting plans, programs, projects and partnerships

Natural Resources Strategic Plan

Sustainable Landscape Guidelines

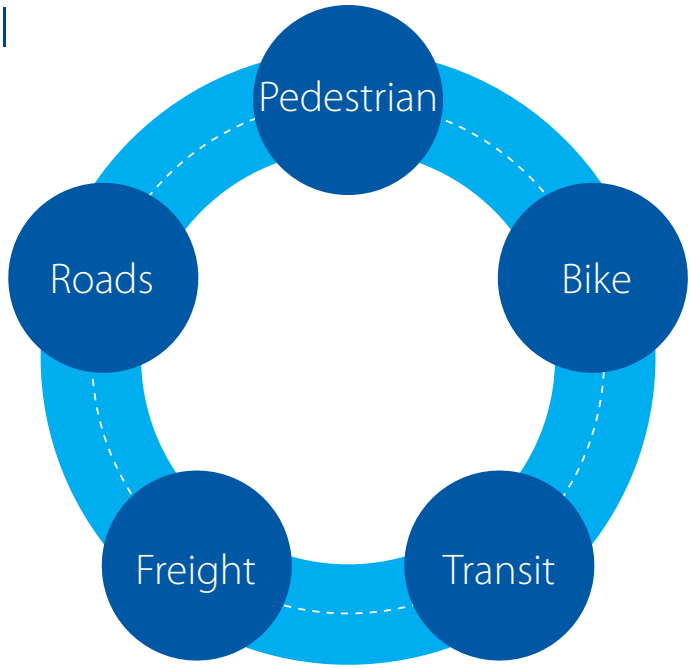
Cool County Initiative

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Environment				
	Wetland acres preserved/restored	↑	Under development	
	Roadway salt use	↓	Under development	
	Trees planted versus removed	↑	TBD	Planted > Removed
	National Ambient Air Quality Standards (NAAQS)	↑	Attained	Attainment
	Vehicle miles traveled (VMT)	↓	2.14 billion	2.06 billion (year 2000 level)

Integrated and Multimodal

People and goods move easily and safely throughout the county and the region, via an integrated system of transportation.



The county collaborates with partners to provide an integrated multimodal transportation system that is designed, built, operated, and maintained in a manner that provides mobility options for a wide range of users, contributes to safe communities for all, promotes economic competitiveness, and helps to safeguard and enhance our natural resources and environment. We do this by:

- Delivering a multimodal transportation system that is integrated, connects people to places, and leverages other investments to maximize return on investment
- Maintaining and preserving infrastructure that facilitates the efficient movement of people, goods, and information
- Employing technology and innovation
- Coordinating with cities to support density and growth in the urban area and meet the diverse transportation needs of our residents and businesses
- Providing opportunities for people to make active transportation choices by increasing the convenience, accessibility, safety, and comfort of taking transit, walking and biking
- Providing transportation choices and modes that use less energy, produce fewer pollutants and reduce greenhouse gas emissions
- Monitoring and measuring performance to continuously improve our transportation system

Role and Partners

Historically, the cities within Hennepin County have been primarily responsible for providing pedestrian facilities. Hennepin County has supported pedestrian movements by incorporating provisions into the design of county roadway facilities.

Often, individual cities within the county and Three Rivers Park District participate in the costs of new sidewalk and trail construction, and once constructed, these jurisdictions assume responsibility for the on-going maintenance and operation of these facilities.

https://metrocouncil.org/Transportation/Planning/Transportation-Behavior-Inventory.aspx

Plans, Programs and Initiatives

Hennepin County Pedestrian Plan, 2016

The Hennepin County Pedestrian Plan, includes strategies that support walking and pedestrian movements through infrastructure, facilities, enforcement, education and evaluation.

Figure 4-01 illustrates the priority locations for future pedestrian infrastructure throughout Hennepin County.

Americans with Disabilities Act (ADA) Transition Plan, 2015

We seek to make our roadways and pedestrian infrastructure more accessible to individuals with disabilities. In 2015, we developed a county-wide ADA Transition Plan, detailing how we will ensure that facilities are accessible to all individuals.

ADA Accessible Ramps

Our goal is to provide ADA-accessible pedestrian design features as part of all projects included in the capital improvement program (CIP) making it easier for persons of all ages and abilities to safely and efficiently use the pedestrian system as a means of transportation

Traffic Signals

County traffic signals are being upgraded with accessible pedestrian signals that audibly and visibly communicate to pedestrians with "WALK" and DON'T WALK" phases. The signal upgrades are scheduled based on priority and available funding in areas where improvements are needed.

Complete Streets Policy

Hennepin County has adopted a Complete Streets policy that complements pedestrian movements and solidifies the County's commitment to develop and maintain a safe, efficient, balanced and environmentally sound county transportation system that supports the County's Active Living initiatives.

Sidewalk Participation Program

The Sidewalk Participation Program was established in 2012 to expand and enhance the network of sidewalk along Hennepin County roads. Since the program began, 23 sidewalk projects at a total cost of $1.1 million have been implemented.

Southwest and Bottineau Community Works

Last mile connections, including sidewalks, were identified for implementation prior to open day of these transitway projects.

Pedestrian Education

Hennepin County administers Heath@Work, Step To It, Safe Routes to School, and Active Living Hennepin County to support pedestrian activity and educate users of our system.

Roads

Safely and efficiently moving people, goods and information

The Hennepin County roadway system, including bridges, is one of the most important public assets that the County owns and operates. The system includes, but is not limited to, items such as road rights of way, pavements, bridges, drainage features (culvert, pipes, ditches, ponds), traffic signal systems, and safety features (e.g., signage, guardrails).

Our roadway system is a multimodal network serving different transportation users including motorists, freight carriers, transit passengers, bicyclists and pedestrians. Roads and bridges connect these users to other transportation systems, such as transit networks, as well as state and city roadways. The efficiency and connectedness of a roadway system also plays a crucial role in economic development and growth and provides many important social benefits.

Figure 4-10 illustrates existing average annual daily traffic (AADT) volumes and heavy commercial truck volumes on the state highway and county highway systems.

Role and Partners

Hennepin County is responsible for the planning, design, construction, maintenance and operations of the County State Aid Highway (CSAH) system and County Road system.

Key partners include the Federal Highway Administration (FHWA), the Minnesota Department of Transportation (MnDOT), the Metropolitan Council, other counties, and cities and townships.

Plans, Programs and Initiatives

Metropolitan Council's Transportation Policy Plan (TPP)

The 2040 Transportation Policy Plan (TPP) presents the region's policies and plans to maintain and enhance existing transportation facilities, better connect people and communities, and provide more transportation choices that will make the region a better place to live.

The TPP includes identification of transit projects for implementation by 2040. The planned projects include a number of bus rapid transit (BRT) projects planned to be housed with county roadways, including Penn Avenue, Chicago Emerson-Fremont, W. Broadway Avenue, Nicollet Avenue, and Hennepin Avenue. This will require collaboration with Metro Transit to ensure that our county roadway design and operations can accommodate the proposed BRT projects.

Complete Streets Policy

Hennepin County was the first Minnesota County to adopt a Complete Streets policy. Adopted in 2009, it solidifies the County's commitment to plan, design, and operate roads to enable safe access for all users of all ages and abilities. Complete Streets also support the county's Active Living initiatives.

Hennepin County Capital Improvement Program (CIP)

The Hennepin County Five-Year Capital Improvement Program (CIP) identifies upcoming projects. The types of projects included in the plan are identified below.

Summary

Hennepin County is responsible for approximately 13,000 pedestrian ramps, 400 miles of sidewalk, and 800 traffic signals along county roads. To ensure compliance with the Americans with Disabilities Act (ADA), the county has inventoried the pedestrian ramps, sidewalks, and traffic signals to determine which need repair, modification, or replacement.

Approximately 47 percent of the ramps and 0.25 percent of the sidewalks were found to need some modification to be fully ADA compliant. The cost to bring these ramps and sidewalks fully into ADA compliance would be roughly $35 million in 2015 dollars. Approximately six percent of the traffic signals within county highway rights of way and along county roads include Accessible Pedestrian Signals (APS).

In the 2015–2019 Capital Improvement Program (CIP), Hennepin County allotted $600,000 annually to repair or replace pedestrian ramps as stand-alone projects (additional ramps may be repaired or replaced with roadway improvement projects, or as part of separate city projects). After evaluating sidewalks for obstructions and deficiencies, Hennepin County will estimate the cost of repair and replacement for those sidewalks with an identified need. The county has allotted $200,000 annually in the CIP for sidewalk related projects. Each local city assumes responsibility for all sidewalks along county roads once a corridor has been constructed, therefore, the available capital funding for sidewalks follows a solicitation process.

During the self evaluation, the ramp conditions were assessed and determined to be fully conforming; substantially conforming, or requiring modification. If capital projects are being completed in a location where there are ramps in need of upgrades, all of the ramps in that area will be replaced or improved as part of the project. Stand-alone ramp projects in areas without planned roadway improvements will be replaced or improved based on priority needs (existing defects, work required, pedestrian use, level of obstruction to users, etc.), as funds are available. A similar process will occur for sidewalks. The work will be scheduled based on priority and available funding in areas where improvements are needed.

Hennepin County has made significant efforts, through funding and construction, to improve accessibility and remove barriers through various programs within Public Works.

Introduction

The Americans with Disabilities Act (ADA) was enacted in 1990 and was intended to address and provide remedies for disability discrimination by employers, public services, public and private transportation providers, public accommodations, and certain telecommunications providers. Most provisions of the ADA took effect in 1992. While the ADA has five separate titles, Title II is the section specifically applicable to "public entities" (state and local governments) and the programs, services, and activities they deliver. Other applicable laws or guidance may be found in Appendix G.

As a result of the ADA and County Board Resolution No. 91-9-685R2, Hennepin County completed an ADA "self evaluation" in December 1992. Hennepin County then used this self evaluation to create a transition plan that detailed the methods to be used to remove the barriers and make all Hennepin County facilities and services accessible. Over the past 25 years, Hennepin County has spent millions of dollars in its efforts to comply with the ADA.

The intent of this ADA Program Access and Transition Plan is to guide the following efforts on the county highway system and county highway rights of way:

- Assist Hennepin County's efforts to comply with ADA
- Develop a procedure to record progress on ADA improvements
- Inform the public of the county's ADA compliance efforts and accomplishments
- Describe the Grievance Procedure for ADA concerns
- Inform the public how to communicate with county staff about issues related to ADA

The goals and purpose of this ADA Program Access and Transition Plan pertain to Hennepin County's highway system, including its roads, bridges, sidewalks, and multi-use trails adjacent to the county highway system and within county highway rights of way. This plan is not intended to address other areas of accessibility within the county.

This plan is part of the county's ADA compliance for its county highway system and the county highway rights of way. It supports the Hennepin County mission, vision, and overarching goal of **healthy** and **mobile** people. Additional information about the county's mission, vision, and goals can be found on the following website: http://www.hennepin.us/your-government/overview/mission-vision-goals.

Public Works Mission and Vision

To help users of this document better understand the context in which the county functions, the mission and vision for Public Works is provided below. Table 1 has a brief summary of the alignment between the Transition Plan and the Public Works strategic goals. Table 2 has a brief summary of the alignment between the Transition Plan and the Transportation Department strategic goals.

Mission

Public Works creates active and livable communities through economic development, environmental stewardship, and advancement of an intermodal transportation network.

Vision

Public Works engages communities by enacting sustainable solutions to advance the quality of life and livability in Hennepin County.

Hennepin County Highway System

Hennepin County, located in the Twin Cities Metropolitan area, has an area of 611 square miles and a population of approximately 1.16 million residents living in 45 cities. The cities range from Minneapolis (urban) in the east to Minnetrista and Independence (rural) in the western part of the county. The transportation system consists of approximately:

- 570 centerline miles
- 1,600 lane-miles of county highways
- 500 miles of bikeways (with more than 650 miles planned)
- 150 bridges
- 800 traffic signals
- 350 miles of concrete sidewalk
- 75 miles of bituminous sidewalk
- 100 miles of multi-use trails adjacent to county highways
- 13,000 pedestrian ramps

ADA Transition Plan Alignment with Other Public Works Plans, Initiatives, and Efforts

Complete Streets, Active Living, and Other County Initiatives

Hennepin County's Complete Streets policy (adopted by County Board on July 14, 2009), recognizes the importance of balancing transit, bicycle, pedestrian, and motorist needs. The county also has an Active Living initiative, which increases opportunities for people to integrate physical activity into their daily lives through policies and plans that encourage walkable communities and active transportation. The Complete Streets policy and Active Living initiative are complementary to the ADA and the Transition Plan to ensure accessible infrastructure and promote participation opportunities.

For continued alignment between the Transition Plan and Hennepin County's Complete Streets policy, Active Living, and other county initiatives, such as: transit-oriented developments, station area planning, health impact assessments, and Survey of the Health of All the Population and the Environment (SHAPE) studies; a recommended practice is for all related actions to follow the Transition Plan. This ensures accessibility is achieved by all county infrastructure along the county highway system and within county highway rights of way.

Hennepin County Transportation Systems Plan (2030 HC-TSP)

The Transition Plan supports and is aligned with goals 1, 2, 3, and 5 of the 2030 HC-TSP (adopted by County Board on June 28, 2011), and the overarching plan theme to develop, build, and maintain a transportation system; a system that includes an accessible and cohesive pedestrian system. Table 3, provides a brief summary of the alignment between the 2030 HC-TSP goals and the Transition Plan. More information on the Hennepin County Transportation Systems Plan (2030 HC-TSP) can be found at http://www.hennepin.us/business/work-with-henn-co/transportation-planning-design.

Incorporation of ADA Guidance for Capital Projects

With the design of each capital project, as identified in Hennepin County's CIP, the county uses current ADA guidance and best practices (see Appendix F). The project manager considers the pedestrian circulation route (PCR), which includes a pedestrian accessibility route (PAR), within the context of the existing regional and local infrastructure. In addition, regional and local planning documents and public input are considered to ensure that the PCR/PAR is well planned and addresses the needs of the local community. When the county constructs new pedestrian infrastructure, the goals include: providing accessibility, promoting the full participation of those with disabilities, and assuring the public all projects are consistent and compliant with the current ADA guidance and best practices.

Incorporation of ADA Guidance for Maintenance Projects

For maintenance projects, the county incorporates current ADA guidance to the maximum extent feasible, in accordance with applicable rules and regulations. Similar to capital projects, the county considers the PCR and PAR, within the context of the existing regional and local infrastructure, as it considers regional and local planning documents and public input.

Internal and Interagency Coordination

County staff routinely evaluates existing policies and practices to ensure they do not limit full participation or present any accessibility barriers for those with a disability. As a part of the evaluation process, staff recognize, update, and develop when needed: ADA design guidelines, internal practices, and methodologies. Intradepartmental (internal) coordination of design guidance and best practices for projects will help avoid inconsistencies in the pedestrian environment.

County staff meets with outside agencies (e.g. MnDOT, cities within Hennepin County, and adjacent counties) to discuss ADA design standards, agency practices, and methodologies. This interagency coordination includes administration and management working cooperatively to define practices and recommend policy. This also occurs as project managers coordinate with internal and external project managers and practitioners to collaborate and share lessons learned.

County and Minneapolis staff coordinate on each agency's approach to providing access and ADA conformance and implementing their ADA guidance, best practices, and Transition Plans. This coordination with Minneapolis is important since it is the largest city in the county based on geographic area and high population density. Staff also coordinates with other cities within Hennepin County and the region in the review and implementation of current ADA guidance, best practices and compliance efforts.

Staff Development

Hennepin County actively promotes ADA-related training. The continued education of staff is a priority. The internal and external knowledge exchange of existing, evolving, and new practices related to ADA and accessibility are vital to accomplishing the purpose of this document. Appendix I provides a listing of ADA-related training that have been attended by county staff.

Self Evaluation

Hennepin County is required, under Title II of the ADA and 28 CFR 35.105, to perform a self evaluation of its policies, practices, and programs. While Hennepin County performed a self evaluation in 1992, it did not focus on transportation infrastructure. The goal of this self evaluation is to verify that, in implementing the policies and practices, the county is providing accessibility and not adversely affecting the full participation of individuals with disabilities. The self evaluation identifies policies and practices that affect accessibility and examine county implementation of these policies. The self evaluation examines the condition of the county's PCR/PARs and identifies any existing infrastructure needs. **Accessibility barriers identified in the self evaluation are provided in Appendix C. A plan and schedule for removing these identified barriers is expected to be completed by the end of 2016.**

Policies

The policies include any Hennepin County policy, including any department or division policy, which directs staff in their daily work activities related to ADA conformance and accessibility within the public rights of way. **Discussion of these polices and the results of the self evaluation are included in Appendix C**. As new policies are developed and existing policies are revised, the county will verify that their guidance and implementation do not cause barriers to accessibility.

Practices

Practices include any methods that management endorses. As a normal course of operation, the county continually reviews and evaluates its practices, or "how we conduct business," to ensure that our actions do not negatively affect accessibility. This will also occur within the context of our self evaluation. **Appendix C provides information regarding identified accessibility issues related to practices and any proposed or implemented remedy.**

Programs (Inventory of built PCR/PAR environment)

Programs address the PCR/PAR environment that is planned, designed, constructed, or maintained by the county, and located along the county highway system and within county highway rights of way. In the context of ADA, this includes the county's built pedestrian environment (e.g. sidewalks, pedestrian ramps, trails, signals, transit shelters, benches, bicycle racks and crosswalks).

Assessment of System Accessibility

As part of the self evaluation process, the county annually identifies priority areas for pedestrian ramp and sidewalk accessible infrastructure improvements, based on identified accessibility deficiencies on the county's transportation system including the location and context of the identified deficiencies. These improvements will be funded with Pedestrian Ramp, Sidewalk Participation, and Pavement Preservation Plus funds provided through their respective Generic Line Items within the annual CIP.

Appendix E lists the capital funding for accessibility by year for each of the funding categories. Moving forward, the county will continue work on accessibility improvements based on anticipated category funding levels.

Transition Plan

The county, under Title II of the ADA and 28 CFR 35.150, is required to develop a transition plan to provide the opportunity for the full participation of individuals with disabilities. The Transition Plan presents the results of the self evaluation, provides contact information for key staff and responsible officials, and describes the grievance procedure. This Transition Plan for county rights of way supplements Hennepin County's Transition Plan that was created in 1992. This plan is focused only on transportation infrastructure in county rights of way. The appendix of this plan contains the following information related to accessibility and infrastructure on the county highway system and within county highway rights of way:

- The grievance procedure (Appendix A)
- Contact information for county officials and key Transportation Department staff responsible for the implementation of the Transition Plan (Appendix B)
- Proposed changes to portions of or entire policies and practices (if any), that may limit accessibility (Appendix C)
- Information on physical barriers that may limit accessibility (Appendix C)
- A description (plan) of how the county will make its programs accessible (remove physical barriers) (Appendix C)
- A schedule for the implementation of the county's plan to make its programs accessible (remove physical barriers) (Appendix C)

The county will regularly update information in the appendices of the Transition Plan as described in the Public Involvement for the Transition Plan section.

Public Involvement for the Transition Plan

When updating the body of the Transition Plan the public will be advised according to the Public Involvement Plan (Appendix H).

Plan Management

Hennepin County is committed to improving accessibility on the county highway system and within the county highway rights of way. The county is responsible for fulfilling the requirements of ADA rules, design guidance, and best practices. This is considered a starting point and should not be assumed to be all-inclusive.

Plan Implementers

The organizational chart on the following page lists the various divisions within the Transportation Departments that are involved with ADA related items. Specific contract information for each of the divisions may be found in Appendix B.

Executive Summary

Hennepin County recognizes that walking and pedestrian infrastructure provide numerous benefits to residents and communities. Walkable communities have a high quality of life, improve personal and environmental health, and promote strong and connected communities and economies.

Every person is a pedestrian at some point in their day, although the role of walking in the daily lives of county residents varies widely. For some residents, their walk is a short stroll from their parking space to their office building. Others walk one mile or more from their home to school or work. Some use a wheelchair to travel from their home to their bus stop. Others walk to exercise, socialize, and experience their neighborhood or park. Despite the diversity of pedestrians and the purpose of their trips, people share a common desire for a safe, comfortable, and convenient pedestrian experience.

This plan addresses Hennepin County's role in making walking a safe and easy choice for residents. The purpose of this document is to guide the implementation of improved opportunities for walking within Hennepin County, while remaining consistent with adopted policies and improving health outcomes. This plan provides recommendations to reach three goals:

GOAL 1 **Improve the safety of walking**

GOAL 2 **Increase walking for transportation**

GOAL 3 **Improve the health of county residents through walking**

RECOMMENDATIONS TO IMPROVE THE SAFETY OF WALKING

- Make it easier and safer for pedestrians to cross county roads
- Work strategically to reduce pedestrian-vehicle crashes
- Expand the network of sidewalks and trails along county roads

RECOMMENDATIONS TO INCREASE WALKING FOR TRANSPORTATION

- Review all county projects for opportunities to improve conditions for walking
- Create complete streets design guidelines for county roadways
- Enhance pedestrian connections to transit

RECOMMENDATIONS TO IMPROVE THE HEALTH OF COUNTY RESIDENTS THROUGH WALKING

- Focus our work on improving pedestrian safety and convenience in areas of the county with higher rates of chronic disease
- Improve pedestrian safety and access to schools

IMPLEMENTATION OF THIS PLAN

This plan identifies priority locations where the enhancement of pedestrian infrastructure has the greatest potential impact on pedestrian safety and rates of walking. The highest priority locations for plan implementation are in Minneapolis and its inner ring suburbs. Many of these locations currently have pedestrian facilities on both sides of the street, but these locations should be considered for pedestrian safety improvements such as pedestrian crossing improvements and sidewalk reconstruction.

In second ring suburban communities and western Hennepin County, high priority locations are identified around commercial and town centers, with most other areas identified as medium to low priority. There are fewer pedestrian facilities along county roads in most second ring suburbs and western Hennepin County. In these locations, the county should focus on the addition of sidewalks and trails to increase opportunities for walking.

The priorities identified are meant as a guide for the implementation of this plan and not as a substitute for field visits, community engagement, or other information gathering. There may be some locations identified as high priority that may have little to no demand for pedestrian facilities, while a location identified as low priority may actually benefit greatly from a pedestrian safety improvement.

Implementation of the Hennepin County Pedestrian Plan will be led by Hennepin County Public Works. This plan will guide the county's work through the year 2020. The county's work in the first year of implementation will focus on recommendations that have been identified as high priority, including:

- Formalize an internal procedure for evaluating pedestrian safety needs at specific locations.
- Evaluate and prioritize improvements to pedestrian crossings.
- Work with cities to encourage applications for the Sidewalk Participation Program funds to construct high priority sidewalks.
- Work with cities, school districts, and park districts to encourage the construction of pedestrian facilities along county roads within ½ mile of schools and parks.
- Establish an internal procedure for pedestrian-oriented review of county projects.
- Develop a comprehensive, county-wide strategy for improving pedestrian safety and access to schools.

Several Hennepin County funding sources will be used to implement this plan, including the county's Sidewalk Participation Program. The county will also seek funding from several state and federal funding sources.

2 Goals of This Plan

The recommendations of this plan are guided by the following goals:

1. INCREASE THE SAFETY OF WALKING

Improving pedestrian safety is the primary goal of this plan. This plan includes strategies to promote safe behavior by pedestrians and motorists through improvements to pedestrian infrastructure along and across Hennepin County roads. This goal supports Hennepin County's goal to improve safety for all users of the transportation system.

Measures:

- Number of pedestrian-vehicle crashes
- Severity of pedestrian-vehicle crashes

2. INCREASE WALKING FOR TRANSPORTATION

Walking has the potential to replace short auto trips and is the primary means of access to public transit. This plan includes strategies to encourage walking by making it easier and more comfortable to walk. These strategies include improvements to pedestrian infrastructure, improvements to the planning and design process, and enhancing pedestrian connections to transit.

Measures:

- Miles of sidewalk and trail along county roadways
- Percent of county residents who walk to work
- Percent of county residents who walk to other destinations
- Annual pedestrian counts

3. IMPROVE THE HEALTH OF COUNTY RESIDENTS

Walking for transportation and recreation is an easy way for children and adults to integrate regular physical activity into their routines. This plan prioritizes pedestrian projects, programs, and policies with the greatest potential to increase walking and in the geographic areas with the greatest needs for health improvements. Strategies under this goal also include Safe Routes to School programs and walking encouragement programs.

Measures:

- Percent of county residents who are overweight or obese

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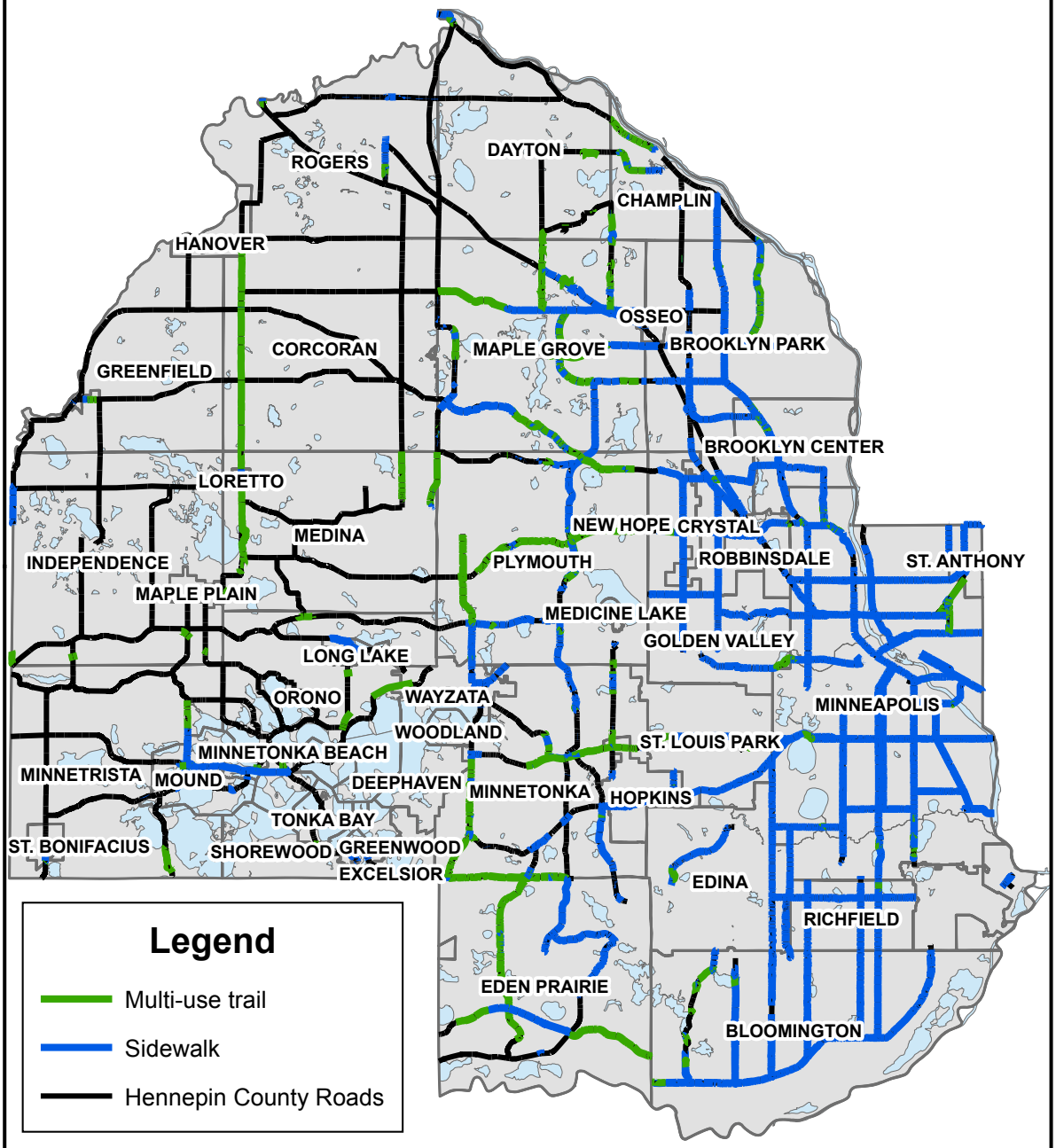
Existing Sidewalk and Trail along Hennepin County Roads



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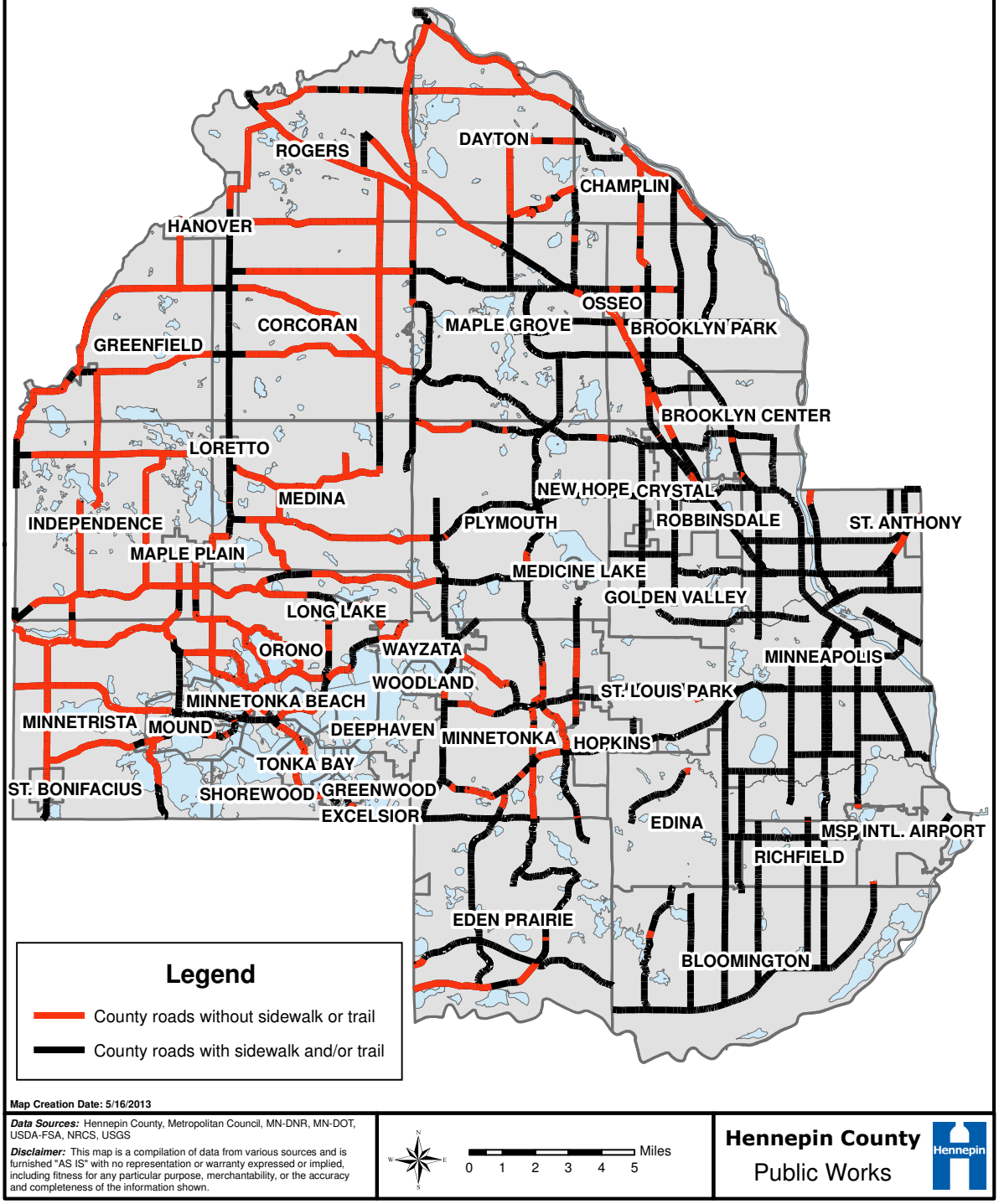
Hennepin County Roads without Sidewalk or Trail



Map Creation Date: 5/16/2013

Data Sources: Hennepin County, Metropolitan Council, MN-DNR, MN-DOT, USDA-FSA, NRCS, USGS

Disclaimer: This map is a compilation of data from various sources and is furnished "AS IS" with no representation or warranty expressed or implied, including fitness for any particular purpose, merchantability, or the accuracy and completeness of the information shown.

Miles
0 1 2 3 4 5

Hennepin County
Public Works

5 Key Findings From Community Engagement

The county provided a variety of opportunities for community input between July and October 2012. A total of 9 workshops gathered input from approximately 150 county residents. An online survey gathered 260 responses. Several common themes emerged from the workshops and surveys, including:

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IMPLEMENTATION

WALKING IS AN EVERYDAY, COMMON ACTIVITY FOR MANY COUNTY RESIDENTS

Most participants walk for transportation or recreation at least twice a week. Transit is an important walking destination.

THERE ARE MANY GREAT PLACES TO WALK

Participants consider parks, trails, and shopping areas among their favorite places to walk. Natural amenities, scenic views, retail businesses, and the presence of other walkers were some of the characteristics that participants found most valuable about these places.

SOME PEDESTRIAN FACILITIES ARE IN NEED OF IMPROVEMENT

Lack of sidewalks was mentioned as an important barrier to walking. Participants recommended providing buffers between sidewalks and moving vehicles in order to increase the comfort of walking. Difficulty crossing busy roads was mentioned as a barrier for walking. Participants mentioned that crossings were difficult at unsignalized intersections and at intersections where the walk signal timing is felt to be too short for seniors.

PEDESTRIAN CHALLENGES EXIST ON COUNTY ROAD CORRIDORS

In workshops, participants were asked to map assets for walking and identify the locations of difficult pedestrian conditions. 18% of assets were located within 100 feet of county roadway centerlines. 60% of locations identified as challenging for pedestrians were located in the same close proximity to county roadways. Participants identified particular county corridors and intersections as challenging because of lack of sidewalks, long waits for pedestrians waiting to cross, and difficulty of crossing an intersection within the timing allotted for the walk signal.

WINTER MAINTENANCE IS AN IMPORTANT CONCERN

Winter maintenance was mentioned as a deterrent to walking, especially for elderly populations and those with mobility impairments. A majority of participants walk less for transportation or recreation during the wintertime.

TRAFFIC SAFETY AND PUBLIC SAFETY ARE DETERRENTS TO WALKING

Participants at most workshops mentioned a concern about safety from motor vehicle traffic. Concerns included difficulty crossing streets, proximity to traffic, and lack of adequate pedestrian facilities such as sidewalks or trails. Some participants also noted that concerns about personal safety limited their walking activity, especially at night.

5.1 INFLUENCE OF COMMUNITY ENGAGEMENT ON THIS PLAN

The recommendations of this plan were cross-referenced with the community engagement results in order to ensure that community ideas and suggestions were included in the plan. Responses from the online survey were used to identify priorities for the implementation of this plan.

Workshop participants and online survey respondents identified three types of locations through the planning process: destinations for walking, places where they enjoy walking, and challenging locations for walking. Comments related to specific corridors and intersections have been compiled into a map for reference by county staff. As part of the implementation plan, county staff will evaluate each of these locations and consider improvements to these locations along county roads where feasible and appropriate (see strategy 1.3b).

For more information on the planning process and community engagement:
Appendix C: Planning Process and Community Engagement

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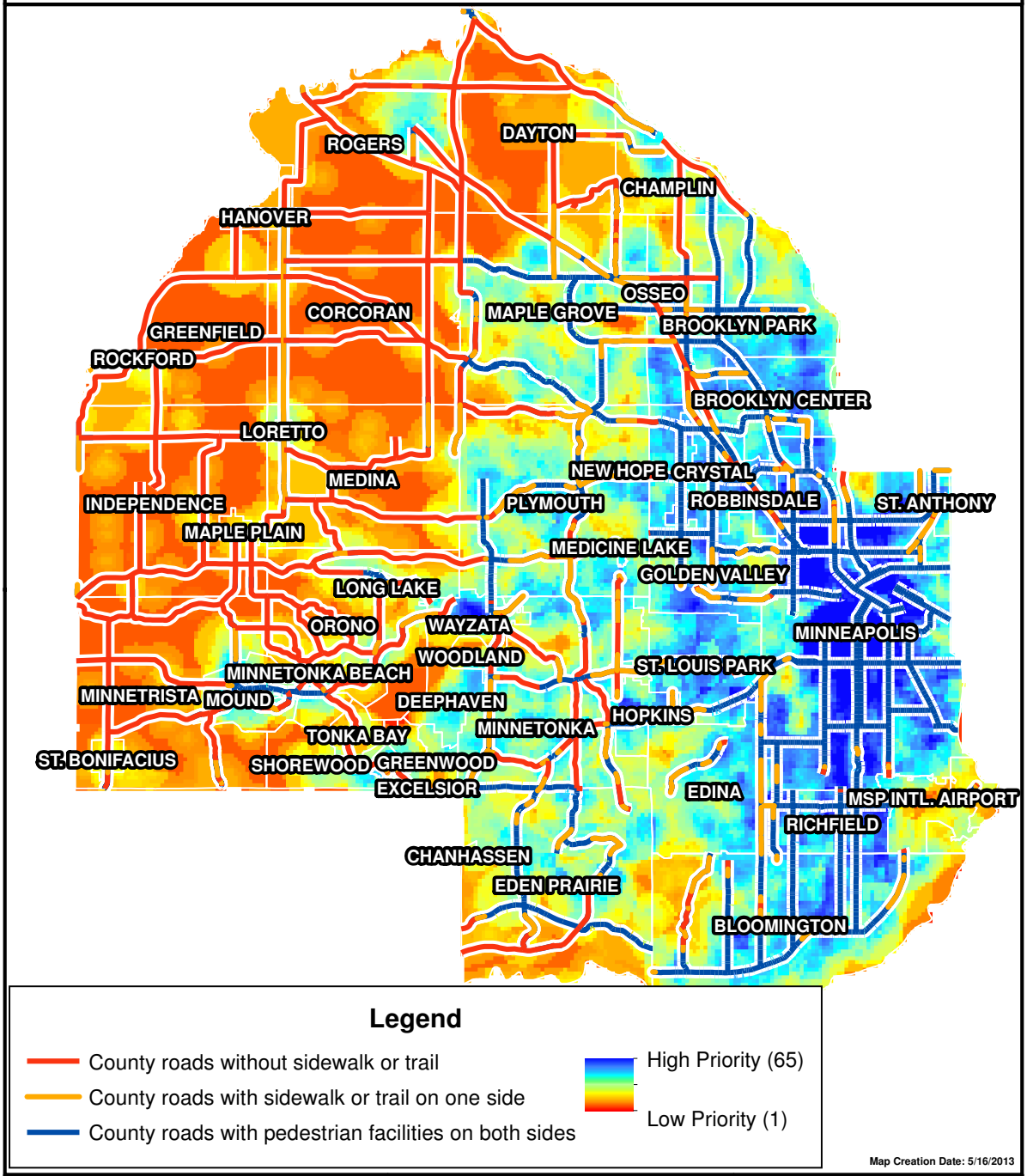
Priority Locations for Pedestrian Plan Implementation



HENNEPIN COUNTY
MINNESOTA

December 5, 2023

Elaine Koutsoukos - TAB Coordinator
Metropolitan Council
390 North Robert Street
St. Paul, MN 55101

Re: Support for 2024 Regional Solicitation Application
TH 47 (University Avenue NE) Reconstruction Project

Dear Ms. Koutsoukos,

Hennepin County has been notified that the City of Minneapolis is submitting a funding application as part of the Metropolitan Council 2024 Regional Solicitation. The proposed project is the TH (University Avenue NE) Reconstruction Project that extends from TH 65 (Central Avenue SE) to 27th Avenue NE. The project presents an opportunity to advance recommendations from the TH 47 Planning and Environmental Linkages (PEL) Study through infrastructure reconstruction and multi-modal safety improvements.

As proposed, this project is anticipated to impact CSAH 52 (Hennepin Avenue/1st Avenue), CSAH 66 (Broadway Street NE), and CSAH 153 (Lowry Avenue NE) that are currently under Hennepin County jurisdiction. At the time of application submittal, county staff would like to formally notify the city of the following recent and planned improvements – understanding that these improvements, and others not yet programmed, are subject to change.

- Hennepin and 1st Avenues multimodal improvements from Main Street (CSAH 23) to 8th Street, tentatively scheduled for 2024 (SP 027-652-042)
- Broadway Street signal replacement at University Avenue NE, completed in 2018 (SP 8825-630)
- Lowry Avenue NE reconstruction from CSAH 23 (Marshall Street) to Washington Street, tentatively scheduled for 2025 (SP 027-753-021)

Hennepin County supports this funding application and agrees to operate and maintain the impacted county roadway facilities for the useful life of the improvements. At this time, Hennepin County has no funding programmed for this project in its 2023-2027 Transportation Capital Improvement Program (CIP). Therefore, county staff is currently unable to commit county cost participation in this project. Additionally, we kindly request that the city includes county staff in the project development process to ensure success. We look forward to working together to improve the accessibility, safety, and mobility of people walking and biking in Minneapolis.

Sincerely,

Carla Stueve

Carla Stueve, P.E.
Transportation Project Delivery Director and County Engineer

cc: Jason Pieper, P.E. – Capital Program Manager

Hennepin County Public Works
1600 Prairie Drive | Medina, MN
612-596-0356 | hennepin.us

Hennepin

Minneapolis
City of Lakes

Public Works
350 S. Fifth St. - Room 239
Minneapolis, MN 55415
612.673.3000
www.minneapolismn.gov

December 4, 2023

Ms. Elaine Koutsoukos
Metropolitan Council
390 North Robert Street
St. Paul, Minnesota 55101

Re: 2024 Regional Solicitation Applications

Dear Ms. Koutsoukos,

The City of Minneapolis Department of Public Works is submitting a series of applications for the 2024 Regional Solicitation for Federal Transportation Funds. The applications and the required matching funds have been authorized by the Minneapolis City Council as described in the Official Proceedings of the Council meetings on November 16, 2023. The City is submitting applications for 12 projects, as listed in the table below, and commits to operate and maintain these facilities through their design life.

Project Name	Regional Solicitation Category
7th Street S from Park Avenue to 13th Avenue S	Roadway Reconstruction/ Modernization
University Avenue NE from Central Avenue to 9th Avenue	Roadway Reconstruction/ Modernization
Cedar Lake Road Bridge over the BNSF railroad	Bridge Rehabilitation/Replacement
Northside Greenway Phase 2 (Humboldt/Irving Avenue N from 26th Avenue N to 4th Ave N/Van White Blvd)	Multiuse Trails and Bicycle Facilities
34th St W/E neighborhood greenway from Hennepin Avenue to Hiawatha Avenue	Multiuse Trails and Bicycle Facilities
University Avenue/4th Street SE bikeway and safety improvements between Central Avenue and I-35W	Multiuse Trails and Bicycle Facilities
Nicollet Avenue from 14th Street to 46th Street pedestrian improvements	Pedestrian Facilities
26th Street E, 27th Street E, and 28th Street E pedestrian improvements	Pedestrian Facilities
Marcy-Holmes/ Dinkytown area pedestrian improvements	Pedestrian Facilities
Hayes Street NE neighborhood greenway	Safe Routes to School
Pleasant Avenue S neighborhood greenway	Safe Routes to School
Ramp A Mobility Hub	Unique Projects

The specific applications are described in the attached "Request for City Council Committee Action." Thank you for the opportunity to submit these applications.

Sincerely,

Margaret Anderson Kelliher

Margaret Anderson Kelliher
Director of Public Works

Council Action No. 2023A-0801 **City of Minneapolis** **File No. 2023-01077**

Committee: PWI Public Hearing: None Passage: Nov 16, 2023 Publication: NOV 25 2023

RECORD OF COUNCIL VOTE				
COUNCIL MEMBER	AYE	NAY	ABSTAIN	ABSENT
Payne	X			
Wonsley	X			
Rainville	X			
Vetaw	X			
Ellison	X			
Osman	X			
Goodman	X			
Jenkins	X			
Chavez	X			
Chughtai	X			
Koski	X			
Johnson	X			
Palmisano	X			

MAYOR ACTION

☑ APPROVED ☐ VETOED

MAYOR FREY

NOV 20 2023

DATE

Certified an official action of the City Council

ATTEST

CITY CLERK

Presented to Mayor: NOV 16 2023

Received from Mayor: NOV 20 2023

The Minneapolis City Council hereby:

1. Authorizes the submittal of a series of applications through Metropolitan Council's 2024 Regional Solicitation Program for federal transportation funds.
2. Authorizes the commitment of local funds to provide the required local match for the federal funding.

Grant applications for 2024 Metropolitan Council Regional Solicitation for federal transportation funds (RCA-2023-01091)

ORIGINATING DEPARTMENT

Public Works

To Committee(s)

#	Committee Name	Meeting Date
1	Public Works & Infrastructure Committee	Nov 9, 2023

LEAD STAFF: Ethan Fawley, Vision Zero Program Coordinator, Transportation Planning and Programming

PRESENTED BY: Ethan Fawley, Vision Zero Program Coordinator, Transportation Planning and Programming

Action Item(s)

#	File Type	Subcategory	Item Description
1	Action	Grant	Authorizing the submittal of a series of applications through Metropolitan Council's 2024 Regional Solicitation Program for federal transportation funds.
2	Action	Grant	Authorizing the commitment of local funds to provide the required local match for the federal funding.

Ward / Neighborhood / Address

#	Ward	Neighborhood	Address
1.	All Wards		

Background Analysis

Public Works will prepare a series of applications for the 2024 Regional Solicitation for Federal Transportation Funds in response to the current Metropolitan Council solicitation. This request includes a summary of the eligible project areas, a brief description of proposed City projects, estimate of requested amounts, and the minimum required local match. Each project requires a minimum 20% local match for construction in addition to the costs for design, engineering, administration, any right-of-way acquisition, and any additional construction costs to fully fund the project. These applications will maximize the use of federal funding. The funding is for projects to be constructed in federal fiscal years 2028 and 2029. Grant awards for these projects are expected to be announced in summer 2024.

This action does not include the package of projects being pursued by Metro Transit, Hennepin County, and MnDOT. Due to the increase in federal surface transportation funding available via the passage of the Infrastructure Investment and Jobs Act (IIJA) in 2021, as well as the availability of new Regional Sales Tax funds for counties and Metro Transit, partner agencies are aggressively pursuing larger packages of projects that is putting additional pressure on local agencies to financially participate on these projects via cost participation policies. Public Works is closely evaluating the proposed city applications and those of partner agencies to

understand the broader impact on and the overall capacity of the City's capital improvement program. Public Works is recommending the submittal of up to 12 applications, the final submittal will be influenced by the evaluation of the overall impact and capacity of the City's capital improvement program.

Public Works identifies projects that meet the eligibility requirements for federal funding and will be competitive, and closely evaluates which applications to submit in a manner that is consistent with the equity-based approach used to select and prioritize projects as a part of the Capital Improvement Program (CIP). Additional consideration is given to the criteria used in application scoring, such as: role in the regional transportation system and economy, equity, affordable housing, asset condition, safety, connectivity, cost-benefit, operational benefits, number of users and multimodal elements. Public Works also considers project readiness, cost, deliverability, and alignment with adopted plans, policies, and initiatives (e.g., *Minneapolis 2040, 20 Year Street Funding Plan*, the Transportation Action Plan, Complete Streets Policy, Vision Zero, and Racial Equity Framework for Transportation).

The 2024 Regional Solicitation for federal transportation funding is part of Metropolitan Council's federally-required continuing, comprehensive, and cooperative transportation planning process for the Twin Cities Metropolitan Area. The funding program and related rules and requirements are established by the U.S. Department of Transportation and administered locally through collaboration with the Federal Highway Administration, the Federal Transit Administration, and the Minnesota Department of Transportation.

Applications are grouped into three primary modal evaluation categories; each category includes several sub-categories as detailed below.

1. Roadways Including Multimodal Elements
    - Strategic Capacity (Roadway Expansion)
    - Roadway Reconstruction/Modernization
    - Traffic Management Technologies (Roadway System Management)
    - Bridge Rehabilitation/Replacement
    - Spot Mobility and Safety
2. Transit and Travel Demand Management (TDM) Projects
    - Arterial Bus Rapid Transit Project
    - Transit Expansion
    - Transit Modernization
    - Travel Demand Management
3. Bicycle and Pedestrian Facilities
    - Multiuse Trails and Bicycle Facilities
    - Pedestrian Facilities
    - Safe Routes to School (Infrastructure Projects)
4. Unique Projects

Public Works is recommending the submittal of up to 12 applications, which are summarized below. Public Works is not planning to submit in categories that don't align with our goals (Strategic Capacity), where we do not have timely priority projects that fit the category criteria well (Spot Mobility and Safety and Traffic Management Technologies) or where partner agencies will be submitting projects as the project sponsor (Transit and TDM).

Project Name	Category	Maximum Federal Amount (not every project will seek max)	Minimum Local Match Required for Maximum Award (20%)*
*Amounts shown indicate minimums only. Total project cost and local match anticipated to be higher for many projects.			
7th Street S from Park Avenue to 13th Avenue S	Roadway Reconstruction/ Modernization	$7,000,000	$1,750,000
University Avenue NE part of section between Central Ave and 27th Ave NE	Roadway Reconstruction/ Modernization	$7,000,000	$1,750,000 (match provided by MnDOT)
Cedar Lake Road bridge over the BNSF railroad	Bridge Rehabilitation/Replacement	$7,000,000	$1,750,000
Northside Greenway Phase 2 (Irving Avenue N/Humboldt Avenue N from 26th Avenue N to 4th Avenue N/Van White Blvd)	Multiuse Trails and Bicycle Facilities	$5,500,000	$1,375,000
34th Street W/E neighborhood greenway from Hennepin Avenue to Hiawatha Avenue and 35th Street E neighborhood greenway from Hiawatha Avenue to West River Pkwy	Multiuse Trails and Bicycle Facilities	$5,500,000	$1,375,000
University Avenue/4th Street SE bikeway and safety improvements between Central Ave and I-35W	Multiuse Trails and Bicycle Facilities	$5,500,000	$1,375,000 (match provided by MnDOT)
Nicollet Avenue from 14th Street to 46th Street pedestrian improvements	Pedestrian Facilities	$2,000,000	$500,000
26th Street and 28th Street E from Nicollet Avenue to Hiawatha Avenue pedestrian improvements	Pedestrian Facilities	$2,000,000	$500,000
Marcy-Holmes/ Dinkytown area pedestrian improvements	Pedestrian Facilities	$2,000,000	$500,000
Hayes Street NE neighborhood greenway from 22nd Avenue to 33rd Avenue - Safe Routes to School	Safe Routes to School	$1,000,000	$250,000
Pleasant Avenue S neighborhood greenway from 50th St to 34th St – Safe Routes to School	Safe Routes to School	$1,000,000	$250,000
Ramp A/Glenwood Ave improvements	Unique Projects	$2,500,000	$625,000 (match provided by MnDOT)
	Totals	$48,000,000	$12,000,000

Details of the proposed applications are described below.

<u>7th Street S from Park Avenue to 13th Avenue S</u>

The proposed project is a complete reconstruction of 7th Street North from Park Avenue to 13th Avenue South, approximately 0.4 miles. 7th Street South has been identified as a future reconstruction candidate, driven primarily by deteriorating and aging infrastructure conditions. This is also a High Injury Street, on the Pedestrian Priority Network, and a Transit Priority Project. This segment is not yet programmed in the City's Capital Improvement Program (CIP). The proposed project will reconstruct the pavement surface, curb and gutter, signage, storm drains, driveway approaches, traffic signals, striping, lighting, street trees, sidewalks, and pedestrian curb ramps. The project will also provide an opportunity for safety enhancements along the street, improvements to the pedestrian realm, and infrastructure to support transit.

Program Category: Roadway Reconstruction/Modernization

University Avenue NE portion of section between Central Ave and 27th Ave NE

This proposed project is a complete reconstruction of a portion of University Avenue NE between Central Ave and 27th Ave NE. University Avenue NE is a Minnesota Department of Transportation (MnDOT) roadway--Highway 47. MnDOT and Public Works are finalizing details on this project, including what section of University Ave NE will be included. University Ave NE has been identified as a reconstruction candidate due to aging and deteriorating infrastructure and safety challenges (it is a High Injury Street). The proposed project will reconstruct the pavement surface, curb and gutter, signage, storm drains, driveway approaches, traffic signals, striping, lighting, street trees, sidewalks, and pedestrian curb ramps, while adding safety and pedestrian realm improvements. MnDOT will provide the required local match for this project and the City may be required to cost participate per MnDOT policy.

Program Category: Roadway Reconstruction/Modernization

Cedar Lake Road bridge over the BNSF railroad

This project is a replacement of the Cedar Lake Road bridge over the BNSF railroad in the Bryn Mawr neighborhood. The current bridge was built in 1941 and is in need of replacement. It is also an opportunity to improve pedestrian and bicycle access across the bridge. This project is programmed in the City's CIP for 2027.

Program Category: Bridge Rehabilitation/Replacement

Northside Greenway Phase 2

The proposed project will create a Neighborhood Greenway along Irving/Humboldt Avenue N for approximately 2 miles in North Minneapolis, extending from 26th Avenue N to 4th Avenue N and Van White Memorial Blvd. This segment is currently a low traffic residential street that connects several schools and parks. The corridor will receive a range of different neighborhood greenway treatments (as identified in the City's Street Design Guide) from block to block, including bicycle boulevard treatments, intersection improvements, and trail segments. The project will also include some ADA improvements to intersections. The project will extend phase 1, which will be constructed in 2026 north of 26th Avenue N.

Program Category: Multiuse Trails and Bicycle Facilities

34th Street W/E & 35th St E neighborhood greenway from Hennepin Avenue to West River Pkwy

The proposed project will create a Neighborhood Greenway along 34th Street from Hennepin Avenue to Hiawatha Avenue and 35th Street E from Hiawatha Avenue to West River Pkwy. These segments are generally low traffic residential streets. The route connects numerous schools and parks across South Minneapolis and will address a major gap in the east-west bikeway network. The corridor may receive a range of different neighborhood greenway treatments (as identified in the City's Street Design Guide) from block to block, including bicycle boulevard treatments, intersection improvements, and trail segments. The project will also include some ADA improvements to intersections. This project will build on the Green Central Safe Routes to School project, which will be installed in 2024, and a bikeway connection over Interstate 35W planned in coordination with the 2027 reconstruction of 35th Street East.

Program Category: Multiuse Trails and Bicycle Facilities

University Avenue/4th Street SE bikeway and safety improvements between Central Ave and I-35W

The proposed project will include a curb protected bike lane, pedestrian safety and access improvements, and potentially some signal upgrades on University Avenue SE and 4th Street SE from Central Avenue to Interstate 35W. University Ave and 4th St SE in this section are MnDOT roadways. MnDOT and Public Works are collaborating on this project; MnDOT will provide the required local match and the City may be required to cost participate per MnDOT policy.

Program Category: Multiuse Trails and Bicycle Facilities

Nicollet Avenue pedestrian safety improvements

The proposed project would include the implementation of pedestrian focused safety and access improvements at select intersections along Nicollet Avenue between 14th Street and 46th Street. Nicollet Avenue is a High Injury Street and the improvements will build on other planned safety treatments in the area. Intersection improvements may include ADA-compliant pedestrian curb ramps, bump outs, medians, signage, traffic control devices, and pavement markings at select locations. Complimentary bikeway improvements may be considered as well. This street was also included as part of the City's 2023 Safe Streets for All federal grant application. If that application is successful, Public Works does not anticipate advancing this application in the Regional Solicitation.

Program Category: Pedestrian Facilities

26th Street and 28th Street E pedestrian improvements

The proposed project would improve pedestrian safety and access at select intersections along 26th Street and 28th Street from Nicollet Avenue to Hiawatha Avenue. Both streets are High Injury Streets and have many pedestrian curb ramps that are not fully ADA compliant. Intersection improvements may include ADA-compliant pedestrian curb ramps, bump outs, medians, signage, traffic control devices, and pavement markings at select locations. Complimentary bikeway improvements may be considered as well. These streets were included as part of the City's 2023 Safe Streets for All federal grant application. If that application is successful, Public Works will still advance the Regional Solicitation application with the intent of further augmenting that work.

Program Category: Pedestrian Facilities

Marcy-Holmes/Dinkytown area pedestrian improvements

The proposed project would improve pedestrian safety and access at select intersections in the Marcy-Holmes neighborhood near Dinkytown. Intersection improvements may include ADA-compliant pedestrian curb ramps, bump outs, medians, traffic circles, signage, traffic control devices, and pavement markings at select locations. This project will be coordinated with street resurfacing currently planned for 2027.

Program Category: Pedestrian Facilities

Hayes Street NE - Safe Routes to School

The proposed project will create a Neighborhood Greenway along Hayes Street Northeast from 33rd Ave NE to 22nd Ave NE. The project will connect to Pillsbury Elementary School, Waite Park Elementary School, and Northeast Middle School. Improvements may include ADA-compliant pedestrian curb ramps, traffic circles, speed humps, speed tables, bump outs, medians, diverters, signage, traffic control devices, protected bikeways, and pavement markings at select locations.

Program Category: Safe Routes to School

Pleasant Ave S - Safe Routes to School

The proposed project will create a Neighborhood Greenway along Pleasant Ave S from 34th Street to 50th Street. The project will connect to Lyndale Elementary School, Washburn High School, and Justice Page Middle School. Improvements may include ADA-compliant pedestrian curb ramps, traffic circles, speed humps, speed tables, bump outs, medians, diverters, signage, traffic control devices, protected bikeways, and pavement markings at select locations.

Program Category: Safe Routes to School

Ramp A/Glenwood Ave improvements

Ramp A is a State-owned parking ramp that goes over Glenwood Avenue between 10th St and 7th Street. Ramp construction was completed over 30 years ago and the State and City have a long-term contractual relationship for the City to manage, operate, and maintain the ramp. The proposed project is a renovation of the interior and exterior areas at the ground level of Ramp A at Glenwood Ave. It will improve interior environments by removing storage area walls, painting ramp undersides, improving pedestrian lighting, providing wayfinding to nearby destinations through ceiling and pavement gestures, designating carshare and motorcycle areas, adding bike lockers and secure storage, improving bike lanes, and adding wall art. Exterior improvements will be made to enhance pedestrian access, add landmark stair features for a sense of destination, and support 9th St. Plaza activation. The Minnesota Department of Transportation (MnDOT) will provide the required local match for this project.

Program Category: Unique Projects

The proposed projects were presented to the Pedestrian Advisory Committee on October 23, 2023, and to the Bicycle Advisory Committee on November 8, 2023.

Attachment: 2024 Regional Solicitation Project Map

FISCAL NOTE

- Grant applications for 2024 Metropolitan Council Regional Solicitation for federal transportation funds - Fiscal Note

Attachments

2024 Regional Solicitation Project Applications Map

MnDOT Metro District
1500 West County Road B-2
Roseville, MN 55113

11/29/2023

Margaret Anderson Kelliher
Public Works Director
350 S 5th St #203
Minneapolis, MN 55415

Re: MnDOT Letter for the City of Minneapolis
Metropolitan Council/Transportation Advisory Board 2024 Regional Solicitation Funding Request for TH 47 between TH 65 and 27th Ave in Minneapolis - Roadway Reconstruction/ Modernization

Dear Margaret Anderson Kelliher,

This letter documents MnDOT Metro District's recognition for City of Minneapolis to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2024 Regional Solicitation for TH 47 between TH 65 and 27th ave in Minneapolis - Roadway Reconstruction/ Modernization.

The proposed project includes resurfacing the road, installation of bike lanes near Hennepin and 1st Avenue, signals, and upgrading facilities to be ADA compliant. As the agency with jurisdiction over TH 47, MnDOT will allow the City of Minneapolis to seek improvements proposed in the application. If funded, details of how the project is delivered and any future maintenance agreement with the City will need to be determined during the project's development to define how the improvements will be maintained for the project's useful life.

MnDOT does not anticipate partnering on local projects beyond current agreements. If your project receives funding, continue to work with MnDOT Area staff to coordinate and review needs and opportunities for cooperation.

MnDOT Metro District looks forward to continued cooperation with the City of Minneapolis as this project moves forward and as we work together to improve safety and travel options within the Metro Area.

If you have questions or require additional information at this time, please reach out to your Area Manager at Ryan.Wilson@state.mn.us or 651-775-4216.

Sincerely,

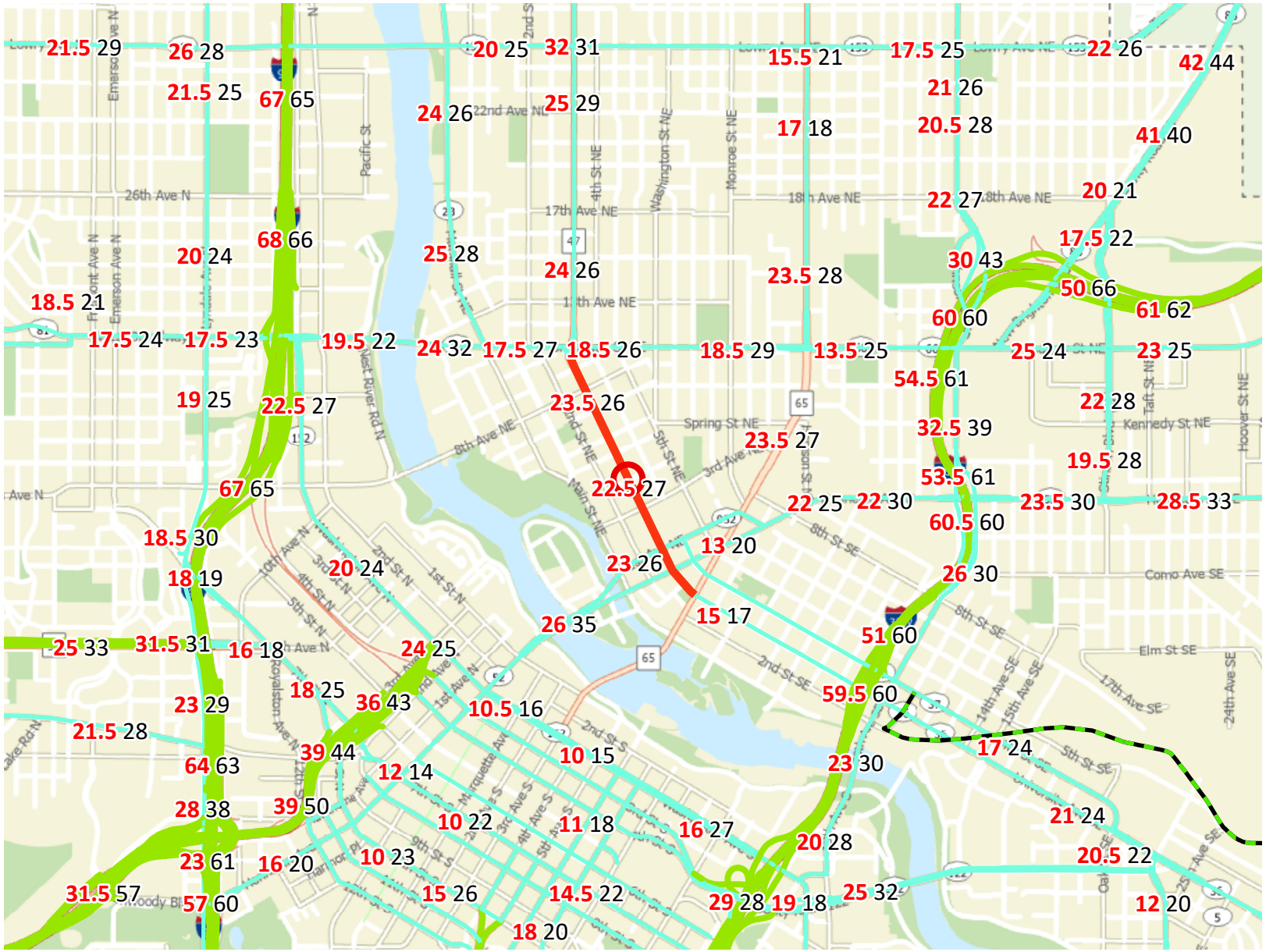
Sheila Kauppi
Digitally signed by Sheila Kauppi
Date: 2023.11.29 13:52:49 -06'00'

Sheila Kauppi, PE
Metro District Engineer

CC:
Ryan Wilson, Area Manager
Aaron Tag, Metro Program Director
Dan Erickson, Metro State Aid Engineer

Level of Congestion

Roadway Reconstruction/Modernization Project: University Avenue Complete Streets | Map ID: 1700498108991



Project Points
Project
Principal Arterials
A Minor Arterials
Principal Arterials Planned
A Minor Arterials Planned

0 0.3 0.6 1.2 1.8 2.4 Miles

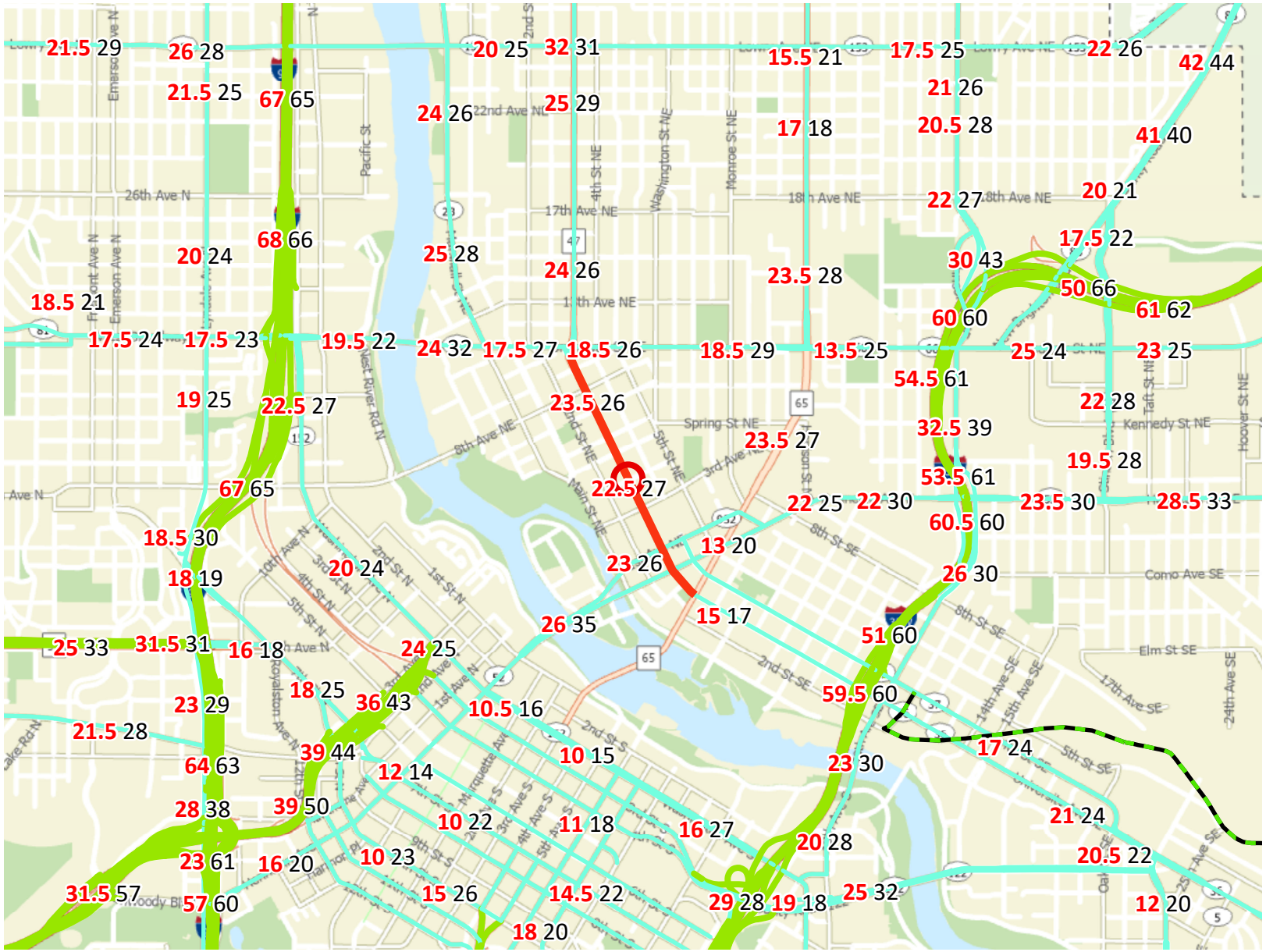
Created: 11/20/2023
LandscapeRSA1

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

METROPOLITAN COUNCIL

Level of Congestion

Roadway Reconstruction/Modernization Project: University Avenue Complete Streets | Map ID: 1700498108991



Project Points
Project
Principal Arterials
A Minor Arterials
Principal Arterials Planned
A Minor Arterials Planned

0 0.3 0.6 1.2 1.8 2.4 Miles

Created: 11/20/2023
LandscapeRSA1

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

METROPOLITAN COUNCIL

2040 Goals

The Minneapolis 2040 goals are intended to state the plan's intent as clearly as possible, so that we as a city know what we are working to accomplish through the policies of the Comprehensive Plan.

Using feedback from the public at the beginning of the planning process, the City Council adopted these goals to provide direction to staff in the development of draft Comprehensive Plan policies that guide the future of the city. Every policy in Minneapolis 2040 is intended to contribute to achieving one or more of the goals.

POLICY 15

Transportation and Equity

Ensure that the quality and function of the transportation system contributes to equitable outcomes for all people.

Achieving equity in transportation means that the quality of the transportation networks in the city creates fair and just opportunities and outcomes for all people. The City of Minneapolis ensures that the quality of the transportation system is held to the same high standard throughout the city. This is done by using quantitative analysis to prioritize street projects based on the physical condition of the streets as well as equity criteria, defined as both the demographics of the areas served by the streets as well as modal needs along each street. This process is detailed in the 20-Year Street Funding Plan, which was created in 2016 and outlines the methodology of selecting capital street projects for improvement -- with a focus on racial and economic equity.

Ensuring that the transportation system functions in a manner that contributes to equitable outcomes requires measuring the success of this goal. The purpose of transportation is to access employment, goods and services, nature and recreation, and to participate in social and civic life. Increased availability of transportation and land use data can facilitate a better understanding of how access to the necessities of life varies by mode and geography, and can help inform decisions about transportation and land use.

ACTION STEPS

The City will seek to accomplish the following action steps to ensure that the quality and function of the transportation system contributes to equitable outcomes for all people.

a. Prioritize equity considerations in transportation programming as outlined in the 20 Year Street Funding Plan and continue to refine plans as necessary.

b. Provide equitable and ample access to walking, bicycling, transit options, and a shared mobility economy.

c. Develop ongoing measurements to track the effectiveness of the transportation system in contributing to equitable outcomes.

d. Increase connections to isolated areas of the city that were created by historic inequities.

e. Support strategies to improve mobility for seniors and those with mobility challenges.

POLICY 17

Complete Streets

Plan, design, build, maintain, and operate the city's transportation system in a way that prioritizes pedestrians first, followed by bicycling and transit use, and lastly motor vehicle use. (Complete Streets Policy, adopted May 2016.)

The City's Complete Street Policy creates a modal hierarchy in the public right of way. The Policy prioritizes walking and pedestrians first, followed by bicycling and taking transit, and lastly driving motor vehicles. This policy framework guides all transportation-related decisions and encompasses all elements in the public right of way. The Complete Streets Policy vision is to improve the environment, the health and safety of residents, and support and strengthen the local economy.

ACTION STEPS

The City will seek to accomplish the following action steps to plan, design, build, maintain, and operate the city's transportation system in a way that prioritizes pedestrians first, followed by bicycling and transit use, and lastly motor vehicle use. (Complete Streets Policy, adopted May 2016.)

a. Implement the Complete Streets Policy throughout all phases of transportation projects and initiatives, including programming, planning, design, construction, operation, and maintenance.

b. Incorporate the Complete Streets Policy into all elements of the public right-of-way, including landscaping, transit shelters, lighting, signs, traffic lights, parking meters, bicycle parking, and furniture.

c. Document the implementation of the Complete Streets Policy for each individual project.

d. Prioritize projects that will improve the pedestrian, bicycle, and transit networks when developing the City's long-range Capital Improvement Program, focusing on an equitable distribution of resources and recognizing historical practices that led to inequitable pedestrian networks.

POLICY 18

Pedestrians

Improve the pedestrian environment in order to encourage walking and the use of mobility aids as a mode of transportation.

Walking and the use of mobility aids is an essential mode of transportation in Minneapolis. Everyone walks, whether young or old, whether on foot or using a mobility device, whether as a walking pedestrian trip alone or in conjunction with taking transit, bicycling, or driving. Pedestrians and pedestrian environments support the economy. The most successful commercial districts in Minneapolis rely on high levels of pedestrian traffic. Pedestrians also contribute to an active lifestyle, improving health outcomes. Increasing the number of pedestrians and improving the pedestrian environment are critical components of reducing greenhouse gas emissions, both directly and indirectly. Specific sidewalk design guidance, which is carefully planned according to accessibility standards, adjacent land uses, and street typology, is provided in the Street and Sidewalk Design Guidelines that are part of the City's Transportation Action Plan.

ACTION STEPS

The City will seek to accomplish the following action steps to improve the pedestrian environment in order to encourage walking as a mode of transportation.

a. Improve safety for pedestrians, and prioritize pedestrians over other road users, especially at street intersections; focus on signals, crosswalks, lighting, signage, visibility, and lowering vehicular speeds through street design and other measures.

b. Foster vibrant public spaces for street life.

c. Provide clearly-designated pedestrian areas in accordance with the City's Street and Sidewalk Design Guidelines.

d. Minimize the number of vehicle curb cuts that hinder pedestrian safety; be deliberate in the placement of drop-off zones and other curb side uses and evaluate the pedestrian benefits as a part of the decision-making process.

e. Deploy traffic calming measures.

f. Improve pedestrian connections across barriers such as freeways, highways, and busy streets.

g. Encourage sidewalk widths that reflect existing or expected volumes of pedestrian traffic, as guided in Street and Sidewalk Design Guidelines.

h. As opportunities exist, encourage and design for streetscape amenities, including street furniture,

POLICY 19

Bicycling

Improve and expand bicycle facilities in order to encourage bicycling as a mode of transportation.

Our City's network of on-street and off-street bikeways, totaling more than 250 miles, provide the opportunity for people from Minneapolis and elsewhere to enjoy the benefits of accessing daily needs, commuting, and recreating by bicycle. The US Census estimates that 5% of Minneapolis residents commute by bicycle. This is among the highest bicycle commute shares in the nation, and it has risen as the City has continued to invest in expanding and improving the bicycle network. If the city is to reach its goal of 15% bicycle mode share by 2025 (Climate Action Plan), this trend will need to continue. Making bicycling attractive to more people will improve health, support our local economy, and help reduce greenhouse gas emissions via reduced vehicle trips.

ACTION STEPS

The City will seek to accomplish the following action steps to improve and expand bicycle facilities in order to encourage bicycling as a mode of transportation.

a. Continue to build and maintain a network of bikeways including greenways and accessible protected bikelanes.

b. Develop guidance for selecting bikeway types when planning and designing streets.

c. Embrace and implement emerging best practices in bikeway design.

d. Implement and expand zoning regulations and incentives that promote bicycling, such as the provision of secured storage for bicycles near building entrances, storage lockers, and changing and shower facilities.

e. Minimize the number of vehicle curb cuts that hinder bicyclist safety; be deliberate in the placement of drop-off zones and other curb side uses, and evaluate the bicycling benefits as a part of the decision-making process.

f. Expand use of bicycles as part of the public fleet.

g. Explore ways to increase accessibility to new bicycle technologies.

POLICY 20

Transit

Increase the frequency, speed, and reliability of the public transit system in order to increase ridership and support new housing and jobs.

2016 marked the 6th consecutive year in a row that Metro Transit ridership surpassed 80 million annual rides. Metro Transit's system includes light rail, high frequency, rapid, commuter, and local bus lines as well as Metro Mobility and community partnerships that extend the reach of transit use to the outer edges of the metro area. In 2015, 13.1% of the working population over 16 in Minneapolis used public transportation to commute to work. In the core of downtown, transit carries 45-54% of peak period passenger trips. Approximately 18% of Minneapolis households are without access to a personal vehicle, making transit, car-sharing or carpooling, or non-motorized transportation a necessity for many in the city.

Public transit is essential to providing transportation and accessibility that aid in combating climate change and reducing economic disparities. As our city's population grows, it will be necessary to increase the frequency, speed, and reliability of the public transit system in order to increase ridership and support new housing and jobs.

ACTION STEPS

The City will seek to accomplish the following action steps to increase the frequency, speed, and reliability of the public transit system in order to increase ridership and support new housing and jobs.

a. Actively shape and define the City's transit vision and framework, with a focus on outcomes rather than modes.

b. Partner with Metro Transit and other agencies to pursue new transit projects of high impact.

c. Work with regional partners to make transit more effective at the local level on both major regional projects as well as the local network.

d. Support Metro Transit's efforts to install higher quality infrastructure (bus shelters, heating, lights) and coordinate these improvements with street improvement projects and new development.

e. Support Metro Transit's efforts to monitor and maintain transit facilities, including landscaping, trash removal, and cleaning of bus shelters.

f. Partner with Metro Transit and other transit providers to provide reliable service in Minneapolis through shorter transit headways and transit advantages, including priority transit lanes and signal priority and preemption.

g. Coordinate major transit projects with housing, economic development, and other transportation-related capital improvement investments, including connections to transit via walking pedestrian routes and bicycling facilities.

POLICY 26

Vision Zero

Eliminate fatalities and severe injuries that are a result of crashes on City streets by 2027.

The City aims to provide safe transportation networks and options for all users. In 2016, the state of Minnesota experienced 397 deaths related from motor vehicle crashes, with 60 of those being pedestrians. Hennepin County had 187 traffic fatalities between 2011 and 2015, with 9 pedestrian deaths and 2 bicyclist deaths in 2015. Minneapolis has experienced 22 traffic fatalities between 2013 and 2015. A holistic approach that explores the needs of all users and prioritizes safe interactions on city streets-- including safer speeds, design strategies, investment, and policy decisions -- will provide the building blocks towards creating safe streets for all.

ACTION STEPS

The City will seek to accomplish the following action steps to eliminate fatalities and severe injuries that are a result of crashes on city streets by 2027.

a. Working together with the community, develop a Vision Zero Action Plan, and implement prioritized measures that are identified through a robust planning process.

b. Include a broad range of approaches involving numerous disciplines including communications, law, engineering, and health when developing the Vision Zero Action Plan.

c. Pursue changes to state statute to allow reduction of speed limits on Minneapolis streets, and use existing statutory authority to reduce speed limits on streets with bicycle facilities.

d. Prioritize safety investments in line with the Complete Streets Policy.

Complete Streets Policy (2021)

The City of Minneapolis is committed to building a complete and integrated public right-of-way to ensure that everyone can travel safely and comfortably along and across a street regardless of whether they are walking, rolling, biking, taking transit, or driving. In 2016 the City of Minneapolis Complete Streets Policy was created to inform decision-making throughout all phases of transportation projects and initiatives. Several changes in the modal landscape have occurred in the years since, and the City has completed work on other relevant planning documents and policies as well, which are reflected in this update. The overarching policy purpose is the establishment of a modal priority framework that prioritizes public modal use in the following order:

1. walking and rolling;
2. biking, taking micromobility, and transit;
3. driving cars, trucks, and providing access for smaller freight vehicles; and
4. operating large freight vehicles,
5. Green stormwater infrastructure is incorporated into projects per Chapter 54 of City ordinances as determined through design.

1. Purpose and Vision

In the 20th century, transportation planning and infrastructure investments in Minneapolis – as in most US cities – became skewed towards providing more efficient movement for travel of cars and trucks. Minneapolis is committed to rebalancing its transportation network by clearly prioritizing walking, rolling, biking, and taking transit, over cars and trucks or providing access for freight vehicles. This approach is consistent with – and builds on – guidance that Minneapolis has already established in Minneapolis 2040 and the Transportation Action Plan.

Complete Streets are streets for everyone. They are designed and operated to prioritize safety, comfort, and access to destinations for all people who use the street, especially people who have experienced systemic underinvestment or whose needs have not been met through a traditional transportation approach, including older adults, people living with disabilities, people who cannot afford or do not have access to a car, and Black, Indigenous, and People of Color (BIPOC) communities. Complete Streets make it easy to cross the street, walk to shops, jobs, and schools, bicycle to work, and move actively with assistive devices. They allow buses to run on time and make it safe for people to walk or move actively to and from transit stations. There is no singular design prescription for Complete Streets; each one is unique and responds to its community context.

By adopting this Complete Streets Policy the City is committing to routinely design and operate the entire right of way to prioritize safer slower speeds for all people who use the road, over high speeds for motor vehicles. This means that every transportation project will make the street network better and safer for people walking, biking, riding transit, moving actively with assistive devices and driving, making Minneapolis a better place to live.[1]

. By implementing this Complete Streets Policy:

[1] The preceding two paragraphs are modified from the Smart Growth America definition of Complete Streets. Their original text and additional resources can be found at https://smartgrowthamerica.org/program/national-complete-streets-coalition/

- Transportation in Minneapolis will happen on a well-maintained network that is complete, comfortable, integrated, efficient, and safer.
- Safety will be improved through coordination with the Vision Zero policy, and improving conditions and outcomes for those most likely to be the victim of transportation-related crashes;
- Transportation-related decisions will align with Minneapolis 2040, which intends to: "support a multimodal network that prioritizes walking, rolling, biking and transit. The policies are intended to achieve outcomes that increase equity in our transportation system, address climate change and reduce carbon emissions, improve human health through improved air quality and increases in active travel, and enable the movement of people, goods, and services across the city.";
- The City will advance its goal of having 3 out of every 5 trips taken by walking, biking, or transit by 2030, as adopted in the Transportation Action Plan;
- The health of Minneapolis residents, workers, and visitors will be improved through walking, rolling, biking and micromobility;
- The environment, in terms of local greenhouse gas emission reduction, water quality and climate change, will be positively impacted by the City's transportation-related decision-making;
- Street design will support the local economy and attract and retain businesses through the provision of safer, efficient transportation options and vibrant public spaces;
- City streets and sidewalks – our largest public space – will foster livable, walkable, bicycle-friendly, green neighborhoods by including healthy trees, plants, permeable surfaces, and design features that help define the character of a street while providing added benefits of shade, summer cooling, reduced energy consumption, and improved water quality;
- Minneapolis will create an integrated transportation network that provides all residents access to employment, education, and other needs for daily living, regardless of their age, access to, or ability to operate a car or truck; and,
- The City will ensure private development contributes to the objective of this policy.

2. Policy Framework

Several City initiatives have changed the transportation planning and programming process since the adoption of the original Complete Streets Policy in 2016.

Important highlights include:

- In 2017 the City committed to Vision Zero, eliminating fatalities and serious injuries on City streets by 2027.
- A climate emergency was declared by the City Council in 2019 in response to the continued threat of climate change on city residents, businesses, systems, and infrastructure. The impacts of climate change remain a global concern with local impacts. Weather events have become less regular and have increased in severity. This has changed the impacts on the stormwater infrastructure and snow management needs.
- The Vision Zero Action Plan was first adopted in 2019 which set out specific activities to improve safety within three years, with updates on a regular basis.
- In 2019 the City adopted Minneapolis 2040, a comprehensive plan for growth and development which included transportation as a key element in achieving long-range goals.

- Racism was declared a public health emergency in mid-2020 following the death of George Floyd on a Minneapolis street. Racial injustice is experienced by residents of and visitors to Minneapolis while using public spaces, including the right of way.
- In late 2020 the City adopted the Transportation Action Plan which establishes a ten-year vision for the City to implement changes across all modes and transportation networks.

These policy statements and documents, along with the Complete Streets Policy, work together and reinforce complementary goals. Together, they advance the priorities set forth on how the right of way should be used.

Public right of way, in addition to serving a transportation role, is the largest public space in the City, comprising 22% of the land. To truly serve the highest-priority modes and reach the City's mode shift goal of 3 of 5 trips taken by walking, rolling, biking or transit by 2030, streets must be vital, healthy places, supporting safe travel by all modes, and include healthy trees, plants, permeable surfaces, public art, and other design features. These elements help define the character of a street, provide shade and cooling, reduce energy consumption, absorb and cleanse stormwater runoff, and support car and bicycle sharing, Because of the potential for these improvements to result in positive outcomes for street users, it is most important to implement these elements along busier streets with higher density land uses, identified as Urban Neighborhood Connectors, Mixed Use Community Connectors, Mixed Use Commercial Connectors, Mixed Use Regional Connectors, and Downtown Core in the Street Design Guide. .

The City establishes a modal priority framework that prioritizes people as they walk, roll, bicycle, and take transit over driving, deliveries, and parking. The modal priority framework will inform City transportation related decision-making. Minneapolis offers modal options through networks of interconnected routes, but there will be City streets that do not have specific accommodations for all modes, e.g., car-free streets, trails, interstate routes that prohibit walking and bicycling, streets without transit routes, or streets without dedicated bicycle facilities. The right of way is also needed for other uses than just transportation, such as stormwater management, snow storage, and community space.

Although not identified specifically, emergency service providers are unique users of the transportation system and require special consideration to allow for reasonable and efficient access to destinations in all parts of the city. Similarly, the movement of commercial goods and services will continue to be a priority for the City, with an understanding that larger vehicles may present challenges within constrained urban environments.

This modal priority framework is established for the following reasons:

1. To allocate space across modes and rebalance the network,
2. To significantly reduce space for cars as key to making walking, biking, and transit competitive and attractive options.
3. All trips begin or end with walking (with or without mobility device), regardless of the primary mode(s) of travel.
4. Each icon on the graphic represents the mode and any supportive features that accommodate their uses; e.g. the car graphic is inclusive of parked or traveling vehicles with any number of passengers. Similarly, bicycle and scooters are inclusive of parking for bicycles and scooters.
5. Transit extends the range of travel for people when they walk, roll or bicycle, provides greater efficiencies and operational benefits than cars and trucks, and is accessible to those rolling or unable to, bike, or drive.

6. Bicycling and using micromobility options extends the range of higher-speed non-motorized travel, while serving commuting, delivery, social, and other purposes.

7. Micromobility is a relatively new mode on city streets and includes various human-scaled vehicles – like bicycles and scooters, which are typically shared and can be electric or human-powered. Under various laws and ordinances these devices are treated similarly to bicycles, and therefore are given the same level of priority as bicycles in this framework.

8. Safety of the most vulnerable street users – those walking, rolling, and biking -- must be the highest priority, because they are the most at risk, as demonstrated through the Vision Zero reports and action plan.

9. The priority modes – those walking, rolling, biking, and taking transit -- have an important set of benefits that car and truck travel lacks, including health, the environment, land use patterns, economic development, and congestion reduction.

10. Transportation investments influence travel choices, such that greater investment in high-quality pedestrian, bicycle, and transit facilities facilitate less reliance upon cars and trucks.

11. The policy will enhance the safety, convenience, comfort, and efficiency of travel for people of all ages and abilities.

12. The City's highest priority modes have historically encountered underinvestment and rebalancing our transportation networks necessitates addressing the needs of those users.

13. Car-centric priorities and investments incentivize greater car usage, accelerate congestion, elevate parking demand, and increase pollution.

When interpreting the modal hierarchy, it is important to note:

1. Placing multiple modes on the same tier does not indicate an "either/or" approach. Each mode on a tier is equally valued.

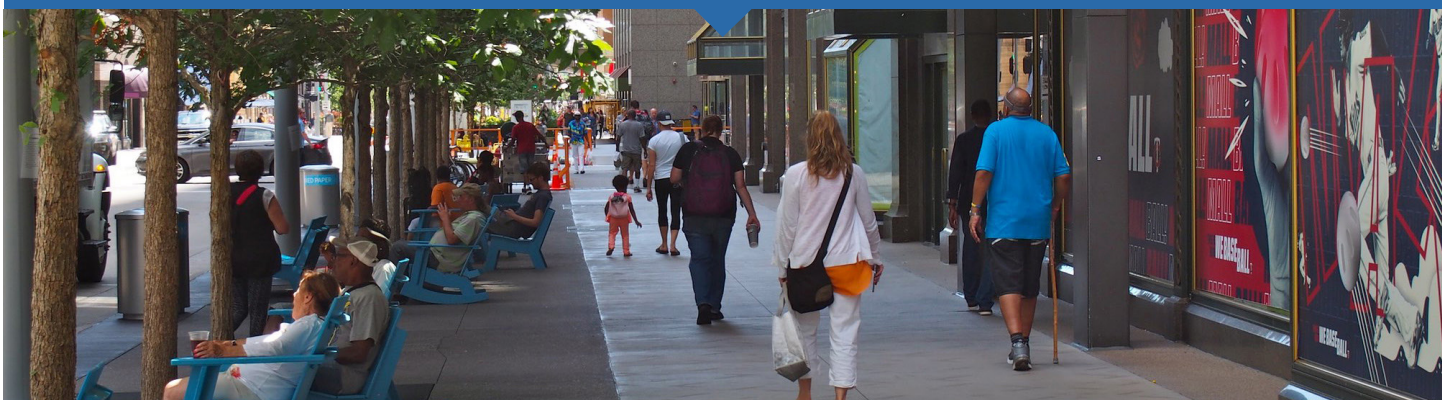
2. The range of needs and required elements that demand space along our City streets means that in some cases not everything can be accommodated within the constrained right of way. As the City implements projects it will prioritize the allocation of space for walking, rolling, biking, and transit.

3. The movement of goods is an important component of any urban environment. Freight vehicles are critical to the city's economy and there are designated corridors where the street designs ensure proper accommodation for these trucks. Large freight vehicles are often accommodated operationally through special permits, coordination with the hosts of special events, and other tools. The Street Design Guide has more detail of the specifications for streets that carry more large freight traffic.

4. There has been a significant increase in smaller vehicles delivering freight and individual pick ups and drop offs becoming more frequent, putting it on the same tier as car and truck traffic.

5. Green stormwater infrastructure (GSI) practices are essential to managing stormwater in a way that is efficient and effective while facilitating the movement of people and goods. Not all GSI tools are above ground but they are a necessarily component of the right of way. Depending on the scope of the project, GSI may or may not be incorporated. Chapter 54 of the City's ordinances provides detailed guidance on when GSI is required for various types of projects.

The TAP seeks to unlock the potential of our streets as places for people and as an invaluable asset for broader outcomes achieved by making the right investments in our transportation network.



The TAP outlines a vision for our streets in 2030. We did not constrain that vision with concerns about resources but rather articulated how, with additional partnerships, time, and funding, we can make our city reflect the vision for transportation laid out in Minneapolis 2040.

Transportation Goals

This plan is guided by six goals. These goals create the groundwork and will help guide transportation decisions by the City for the next 10 years. Every strategy and action will support one or more of these six goals:

Climate

Reshape the transportation system to address climate change, using technology, design and mobility options to aggressively reduce greenhouse gas emissions caused by vehicles

Safety

Reach Vision Zero by prioritizing safety for all people and eliminate traffic fatalities and severe injuries by 2027

Equity

Build and operate a transportation system that contributes to equitable opportunities and outcomes for all people, and acknowledge and reverse historic inequities in our transportation system

Prosperity

Provide mobility options that move people and goods through reliable connections; retain top talent and grow Minneapolis as the economic engine of the region

Mobility

Embrace and enable innovation and advances in transportation to increase and improve mobility and access options for all

Active Partnerships

Create and seize opportunities to achieve shared goals and responsibilities through partnering and leveraging funding opportunities with national and regional partners and others who invest in the city

Strategies and Actions

The strategies and actions in this action plan reflect a tension that exists in the street that results from competing uses for limited right of way. Reaching our transportation goals requires strategic action. Listed in this plan are 56 strategies and 304 actions that we plan to undertake in the next 10 years.

Each strategy is followed by several actions, detailing how we, along with our partners, will make tangible improvements on our streets. To reflect Minneapolis goals and values in our streets, the strategies and actions within this plan are focused on seven topics:

PROMOTE A SAFE AND INVITING WALKING AND ROLLING ENVIRONMENT

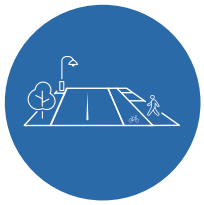
INCREASE THE AVAILABILITY AND SAFETY FOR BICYCLING AND MICROMOBILITY TRAVEL

DEFINE THE MINNEAPOLIS TRANSIT NETWORK

INVITE NEW TECHNOLOGY TO ADVANCE TRANSPORTATION OPTIONS

MANAGE INCREASED FREIGHT NEEDS WHILE PRESERVING THE STREET

IMPROVE STREET OPERATIONS AND ADDRESS COMPETING DEMANDS



DESIGN FOR PEOPLE

Plan Highlights

The TAP calls for action over the next 10 years to leverage our streets to reach citywide goals. When implemented, the actions in the TAP will help us create more travel options for more people.

1. **Reach a mode share goal** in pursuit of our climate goals where 3 of every 5 trips are taken by walking, rolling, bicycling or transit.

2. **Improve the experience of people walking and rolling** on our streets, with the creation of a plaza program, the inclusion of pedestrian lighting on all street reconstruction projects and actions focused on safer street crossings.

3. **Realize a City-led transit vision** that makes taking transit a more attractive and affordable option for more people.

4. **Expand transit coverage** so that 75% of residents are within a 5-minute walk of high frequency transit and 90% are within a 10-minute walk; **implement transit advantages** along all the high frequency transit corridors.

5. Use street design to **provide a more comfortable and healthier environment** for people – including more green infrastructure and trees in street projects.

6. **Act quickly to improve our streets**, focusing on paint and lower-cost infrastructure improvements to make change that improves street design and operations.

7. **Increase the All Ages and Abilities Network nearly twofold**, focusing on a low-stress and protected bicycle and micromobility network for all system users.

8. **Update the Complete Streets Policy** to incorporate freight, micromobility and green infrastructure.

9. **Adopt a strong curbside management policy** to prioritize space for people and value the competing demands for curb space.

10. **Implement a network of mobility hubs** where people can connect to multiple shared transportation options – like transit, bikes, scooters and cars.

EQUITY

Build and operate a transportation system that contributes to equitable opportunities and outcomes for all people, and acknowledge and reverse historic inequities in our transportation system.

Equity translates to fair and just opportunities and outcomes for all people. The City is committed to the development of policies, practices and strategic investments to reverse racial disparity trends, eliminate institutional racism, and ensure that outcomes and opportunities for all people are no longer predictable by race.[14] Transportation is a critical part of this work.

Not all people have the same access to transportation. More than one of every six people in Minneapolis (16.5%) live in a household without an automobile.[15] In some neighborhoods as many as 40-50% of households don't have access to a vehicle. Over three in ten people of color households do not have access to a car.[16] While some households choose not to own a car, there are many households that cannot afford to do so. Transportation is one of the top two household costs, accounting for approximately 16% of household income in Minneapolis.[17]

One of the goals of this plan is to reduce single occupancy and high-carbon motor vehicle trips, but the current transportation network affords more opportunities to those who can purchase a car, such as access to more jobs. To design, build and operate an equitable transportation system, it is imperative that we focus on underserved communities that are in need of expanded, improved and affordable mobility options. As it currently stands, people of color spend two minutes more on their commutes than white residents[18]; this adds up to over 17 hours more per year spent commuting.

Additionally, 11% of Minneapolis residents self-report a disability, which may present mobility challenges.[19] Given these realities, the existing transportation system results in different challenges for different people. The approach to our work recognizes these realities and will help address them.

[14] City of Minneapolis (2017)
[15] National Equity Atlas, 2017
[16] Household Size by Vehicles Available, U.S. Census Bureau, 2013-2018 American Community Survey 5-Year Estimates
[17] Center for Neighborhood Technology Housing and Affordability Index (July 2018)
[18] National Equity Atlas, 2017
[19] Disability Characteristics, U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimate

Structure of the TAP

RELATIONSHIP TO OTHER PLANNING EFFORTS

To reflect Minneapolis goals and values in our streets, the strategies and actions within this plan are focused on seven topics:

PROMOTE A SAFE AND INVITING WALKING AND ROLLING ENVIRONMENT: The plan identifies actions to make it easier, safer and more comfortable for people to get around walking or rolling using a wheelchair, stroller or other assistive mobility device. Actions are focused on a Pedestrian Priority Network. All future references to "walking" in this document are inclusive of "walking and rolling" as defined above.

INCREASE THE AVAILABILITY AND SAFETY FOR BICYCLING AND MICROMOBILITY TRAVEL: With an emphasis on establishing a low-stress network for all ages and abilities, the plan focuses on making the choice to bike or take other micromobility options easier for more people, as well as improving safety and comfort for those who ride.

DEFINE THE MINNEAPOLIS TRANSIT NETWORK: A quarter-million transit trips begin, end or travel through Minneapolis each weekday. Transit is a critical part of the City's transportation network; the plan outlines strategies and actions to support a reliable, convenient and comfortable public transit network.

INVITE NEW TECHNOLOGY TO ADVANCE TRANSPORTATION OPTIONS: Technology is changing the way we travel. The plan defines how to integrate technology and new business and service models. Shared scooters, bicycles and electric vehicles are examples of new mobility options.

MANAGE INCREASED FREIGHT NEEDS WHILE PRESERVING THE STREET: Freight is a critical component of our economy. The plan considers how raw materials, food and packages are delivered to people and businesses every day in our city with strategies and actions to improve the sustainable and efficient movement of freight to, from and through Minneapolis.

IMPROVE STREET OPERATIONS AND ADDRESS COMPETING DEMANDS: This topic further defines how the City's Complete Streets Policy, commitment to Vision Zero and transportation goals come together into daily operations and transportation system planning. It provides a foundation for evaluating competing demands within limited street space by taking a comprehensive, people-first approach.

DESIGN FOR PEOPLE: Streets are important community public spaces where we live, gather, travel, shop or wait for the bus, on a daily basis. We aim to design, build and maintain streets that are safe, functional and support the movement of people and goods throughout the city. Actions in this topic focus on the many ways streets need to serve people through design. The City's Street Design Guide (to be released in 2020) is a companion document to the TAP and will identify street typologies and provide guidance for how we approach design on all streets within the city, with the exception of freeways.

VISION ZERO MINNEAPOLIS

VISION ZERO

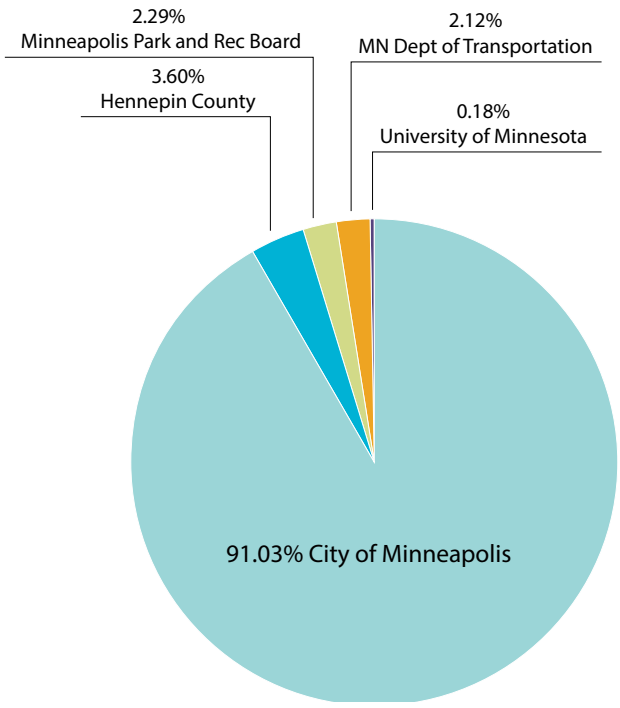
In 2017, the City adopted a Vision Zero Policy that committed to ending fatal and severe injuries on our streets within 10 years. This steadfast commitment to safety permeates throughout our plan; the work we do aims to reach Vision Zero and focus on those who are disproportionately impacted by traffic crashes (e.g., those walking, biking, Native Americans and those in ACP50 areas - areas of concentrated poverty with the majority of residents people of color).

Key partnerships

AGENCY PARTNERSHIPS

The City cannot reach our goals without the support of other key agencies who own, operate and manage streets within the city. Hennepin County, the Minnesota Department of Transportation, the Minneapolis Park and Recreation Board and the University of Minnesota all hold critical roles in the way our streets function. We partner at both the project level and the system-wide planning level with these agencies. While the reach of the TAP covers all streets within the city regardless of ownership, we acknowledge the jurisdictional roles and responsibilities of our partners regarding their streets.

Figure 10: Roadway jurisdiction



Source: Minneapolis Public Works, 2019

Shifting modes by 2030

Mode split measures the percentage of travelers using a particular type of transportation (walk, bike, transit, car) for a particular trip (work, school, errands). Mode split data is collected from the Metropolitan Council through the Travel Behavior Inventory, which has been collected every 10 years but will be collected more frequently moving forward. This dataset accounts for all trips taken by all people in a household.

Reflecting a reduction of car trips and an increase of walking, biking and transit trips is important to frame the strategies and actions of this plan, which is expressed as shifting modes.

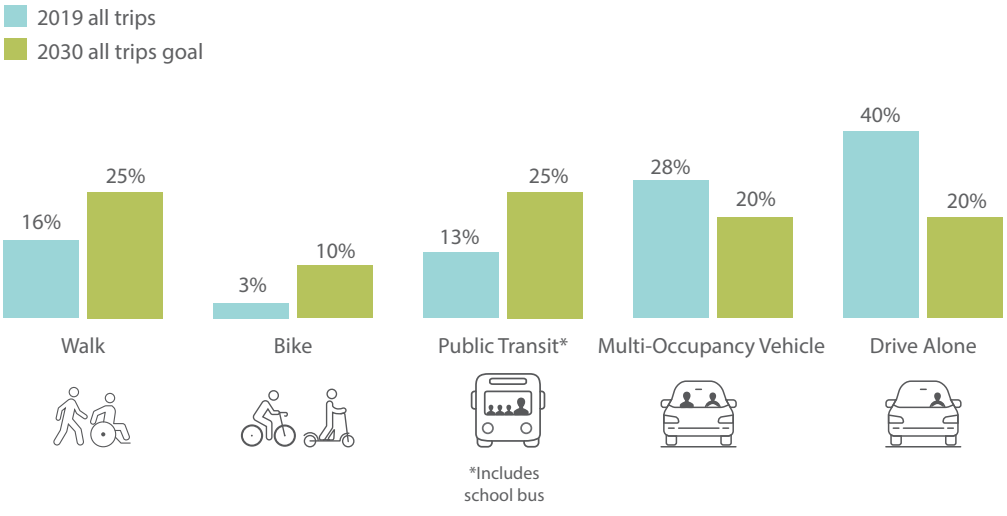
There are six key reasons to set a 2030 mode shift goal:

1. Reduce greenhouse gas emissions and improve air quality
2. Allocate space across all modes equitably
3. Reduce crash impacts from large vehicles
4. Improve quality of life related to trip time and congestion
5. Capture new trips from new residents in ways other than cars
6. Reduce costs for more residents through improved access to lower cost transportation options

2019 data shows that 68% of all trips that start or end in Minneapolis are taken by car – either individually (40%) or with other people (28%). Walking, biking, transit and school bus trips account for just under a third of all trips (32%).[35]

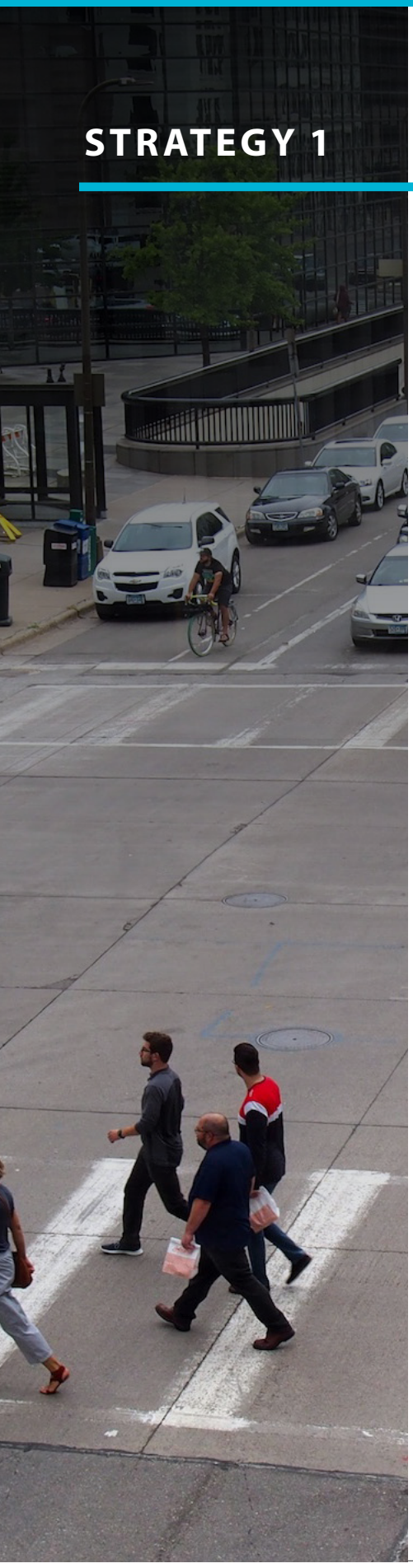
We've set a goal of having 60% of trips taken by means other than a car – 35% by walking and biking and 25% by transit.

Figure 20: All trips starting and ending in Minneapolis; mode split (2019) and mode split goal (2030)



Source: Metropolitan Council, Travel Behavior Inventory, 2019.

[35] Metropolitan Council, Travel Behavior Inventory, 2019.



STRATEGY 1

Focus pedestrian improvements along and across the Pedestrian Priority Network.

The Pedestrian Priority Network is a grid of streets that represent where people frequently walk and will be used to focus investments to improve the ease, comfort and safety of people walking throughout the year. The network is 298 miles and will be the focus of planning, design, operations and maintenance improvements for pedestrians across the city, replacing all existing network maps.

The Pedestrian Priority Network was developed by studying numerous factors that influence where people walk, including transit services, high density areas, commercial activity, land use, connections to schools and High Injury Streets for pedestrians. Trails are also noted on the Pedestrian Priority Network; a large portion of trails are owned and managed by the Minneapolis Park and Recreation Board and provide important connections for the network as they are key walking places.

Figure 30: Typical street on Pedestrian Priority Network

STRATEGY 2

Prioritize visibility and safety of pedestrians at intersections and midblock crossings.

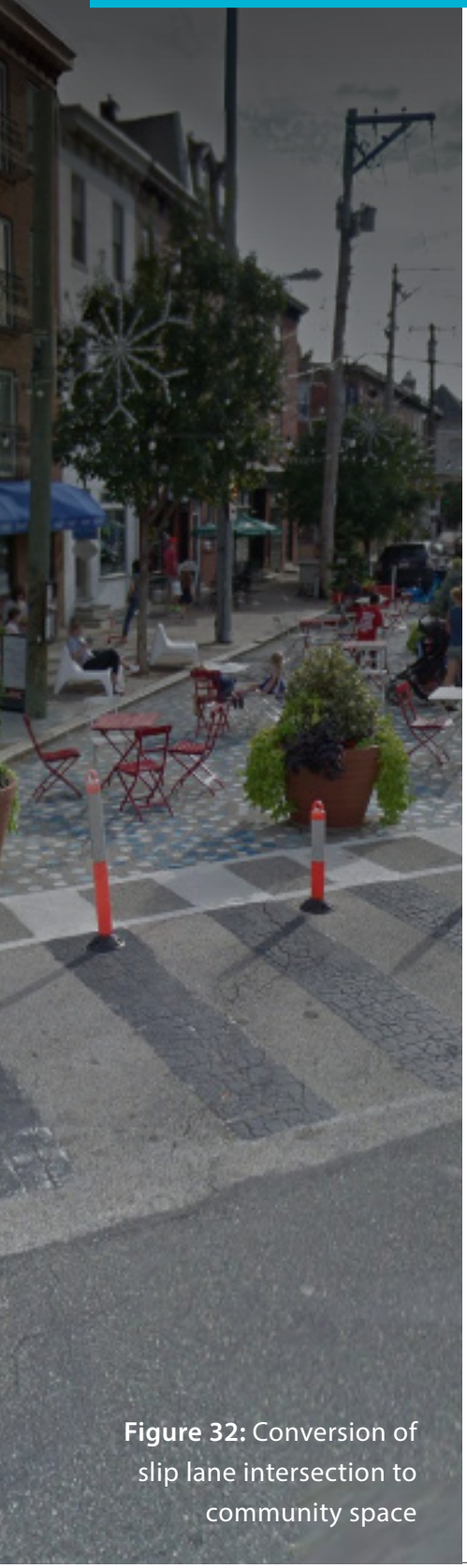
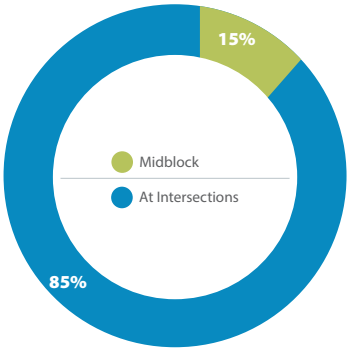


Figure 32: Conversion of slip lane intersection to community space

85% of crashes involving pedestrians happen at intersections. Of these, 68% of crashes happen at signalized intersections, while 30% happen at unsignalized or stop-controlled intersections.[45] While midblock crossings are not the norm in Minneapolis, where they exist, it is important to prioritize treatments that slow motor vehicle speed and provide visual cues for drivers to look for people crossing, particularly because drivers may not be anticipating people crossing midblock.

Figure 31: Locations of pedestrian crashes



Source: 2017 City of Minneapolis Pedestrian Crash Study

There are several operational improvements that help increase safety but may sometimes appear at odds with one another. Longer walk signals, for example, support walking speeds for those who have a slower pace, but shorter walk signals allow opportunities for people to cross more frequently. Assessing when and where to use these various treatments is important and most effective on a project by project basis.

[45] Minneapolis Pedestrian Crash Study, 2017. 2% are at no or unknown control.

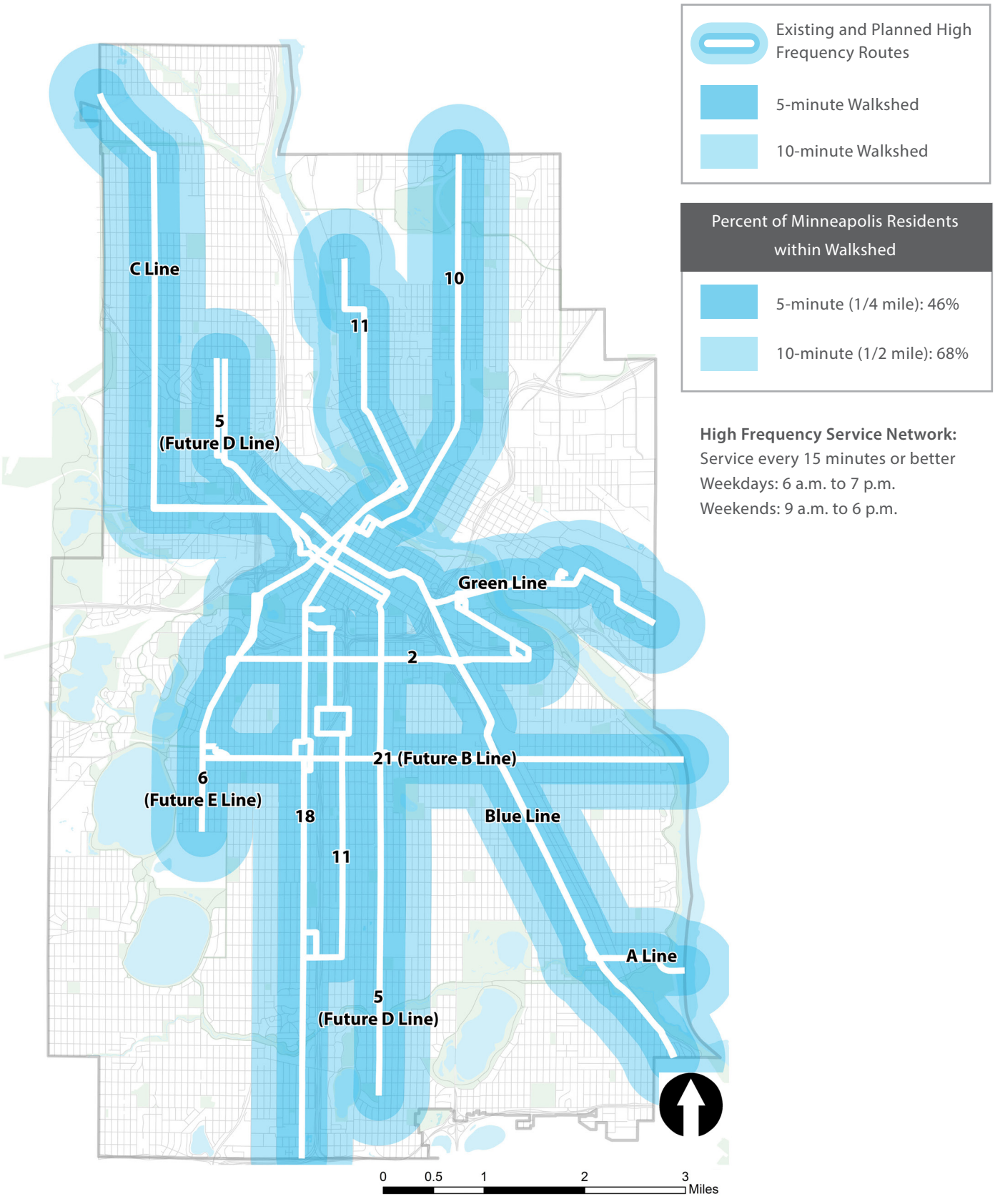
BICYCLING STRATEGIES

1. **Complete the All Ages and Abilities Network.**
2. **Build bikeway connections that overcome significant physical barriers during the buildout of the All Ages and Abilities Network.**
3. **Prioritize a network of neighborhood greenways during the buildout of the All Ages and Abilities Network.**
4. **Enhance intersection design and safety during the buildout of the All Ages and Abilities Network.**
5. **Plan and implement bikeway connections to and between regional destinations and adjacent city networks.**
6. **Maintain the All Ages and Abilities Network to provide year-round access.**
7. **Provide wayfinding to help people navigate the All Ages and Abilities Network.**
8. **Design bikeways using best practices that reflect the community and serve as an asset to people who may not currently ride a bike or use micromobility.**
9. **Update bicycle and micromobility parking practices to support demand and diversity of vehicles to significantly expand bicycle racks in the right of way.**
10. **Expand safe biking and micromobility education and encouragement.**
11. **Measure biking and micromobility ridership levels and user comfort.**

SEE ALSO STRATEGIES:

- **Street Operations Strategy 3** — Plan for efficient and practical operations of people walking, biking and taking micromobility or transit throughout the street design process
- **Street Operations Strategy 4** — Leverage City resources and partnerships to promote, educate and encourage walking, biking and transit as alternatives to driving
- **Street Operations Strategy 5** — Price and manage use of the curb to encourage walking, biking and using transit, and to discourage driving alone
- **Street Operations Strategy 6** — Induce regional mode shift by prioritizing pedestrian, bicycle and transit facilities and operations into capital transportation projects

Figure 77: 5- and 10-minute walksheds to existing high frequency transit



STRATEGY 5

Expand multimodal access to transit.

Ensuring that a connected multimodal system feeds into the transit network will expand people's ability to rely on transit and lessen dependency on the automobile. Supporting technological advancements to integrate payment options and partner with shared mobility providers are key to increasing access to transit while reducing friction.

Figure 84: New vehicle type: autonomous shuttle

Figure 85: Mobility hubs bring transit and shared mobility services together

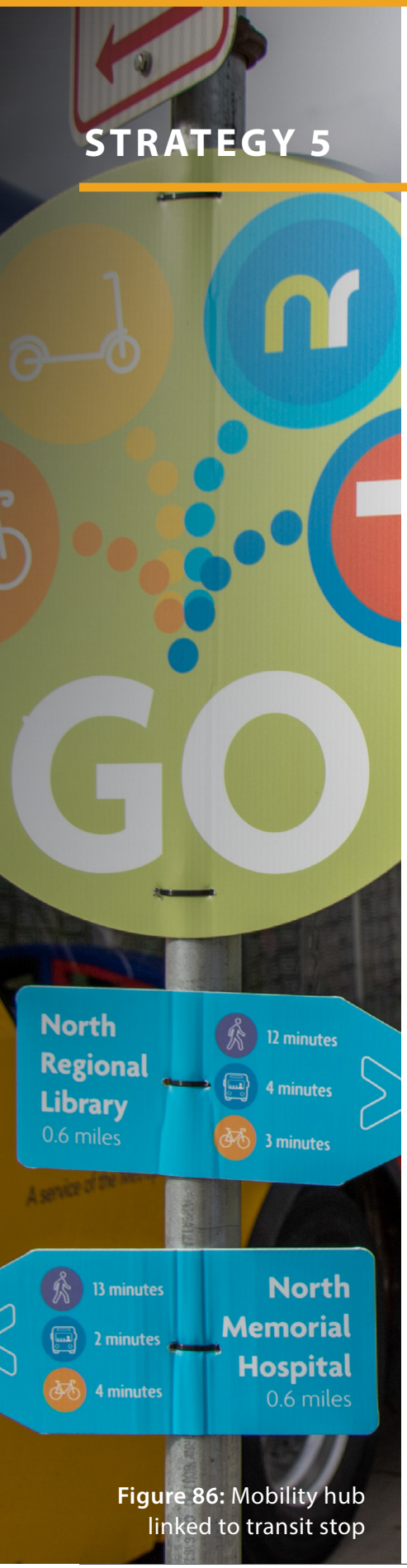


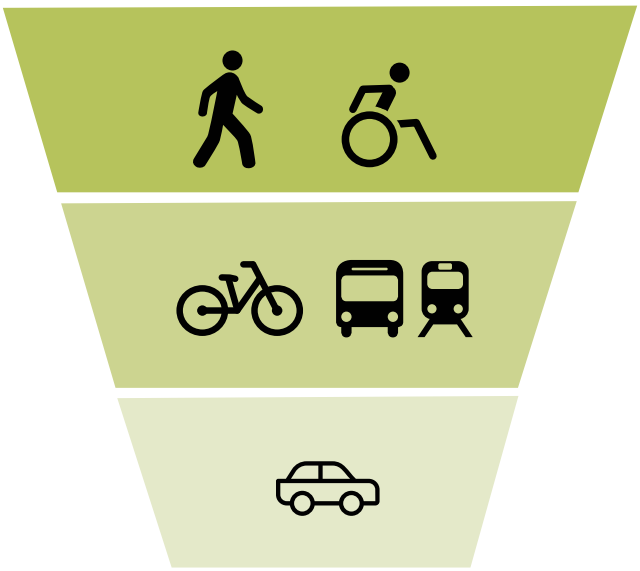
Figure 86: Mobility hub linked to transit stop

STRATEGY 1

Update the City's Complete Streets Policy.

The City adopted a Complete Streets Policy in 2016 that has successfully driven the design and operations of numerous streets in the city since its passage. Given the pace of change on our streets, we recognize the need to update the policy to incorporate more fully the complex and often competing needs within the right of way.

Figure 128: Complete Streets hierarchy



ACTIONS

Actions to update the City's Complete Streets Policy.

	Actions	Supports	Difficulty
DO	**ACTION 1.1** *2020-2023 (YEARS 0-3)* Incorporate freight, micromobility and green infrastructure into the City's existing Complete Streets Policy. *See Freight Action 2.1, Design Strategy 4*	Climate, Safety, Equity, Prosperity, Mobility, Active partnerships	Medium

ACTIONS

Actions to use quick-build tools to eliminate traffic related deaths and severe injuries on city streets.

Actions	Supports	Difficulty
DO **ACTION 2.1** *2020-2023 (YEARS 0-3)* Complete all Safe Streets strategies and actions in the Vision Zero Action Plan and any updates of the 2020-2022 plan, with a focus on reducing speeds, reconfiguring road space to support safer travel and encourage more people to walk, bike and take transit and install safety improvements at intersections along High Injury Streets. *See Technology Action 1.11*	Safety	High
DO **ACTION 2.2** *2020-2023 (YEARS 0-3); ON-GOING* Prepare final evaluation of 4-lane undivided streets for safety conversions; potential design solutions include 4-to-3 lane conversions. Current 4-lane undivided streets for evaluation include: • Lyndale Ave N between Plymouth Ave and West Broadway • Hennepin Ave S between Franklin Ave and 31st St • 3rd Ave S between 1st St S and 12th St S • 31st St E between 1st Ave S and Park Ave • Harmon Pl between Spruce Pl and 10th St S • Johnson St NE between Broadway Ave NE and I-35W freeway entrance ramp • Huron Blvd SE between Fulton St SE and Delaware St SE • Hawthorn Ave from 8th St to 11th St • Lowry Ave N between Queen Ave N and Oliver Ave N and Lowry Avenue N and NE between 4th St N and Central Ave NE • Broadway Ave N and NE segments between Fremont Ave N and University Ave NE • Washington Ave N segments between 14th Ave N and 26th Ave N • Lyndale Ave S between Franklin Ave and 31st St • Cedar Ave S between 24th St and 38th St and between 7th St S and 9th St S • Franklin Ave between Aldrich Ave S and Chicago Ave • Lake St segments between Dupont Ave and West River Pkwy • Excelsior Blvd between France Ave and Abbott Ave S • University Ave SE segments between Oak St SE and St. Mary's Ave SE • Marshall St NE from 30th Ave NE to St. Anthony Pkwy • Hennepin Ave E segments between 8th St SE and 33rd Ave SE • Central Ave NE segments between 2nd St SE and 27th Ave NE • University Ave NE and SE between Central Ave and 27th Ave NE	Climate, Safety, Equity, Prosperity, Mobility, Active partnerships	High

Regional Solicitation

Figure 1

Hennepin County
Minneapolis, Minnesota

University Avenue Complete Streets
Date: 11/2023; Project: 174560

University Ave NE (TH 47) Complete Streets Project

Central Ave NE to 9th Ave NE

Roadway Modernization

Minneapolis

Est. Project Cost: $3.5 Million

Requested Amount: $2.8 Million

Project Background

The project will reconstruct a 0.9-mile section of University Ave NE (TH 47), between Central Ave (TH 65) and 9th Ave NE. This area connects pedestrians, bicyclists, transit users, and drivers to important local and regional destinations. The proposed TH 47 Complete Streets Project will apply a four- to three-lane conversion (also known as a road diet) to improve safety and access for all travelers.

The road diet will eliminate weaving traffic, calm traffic speeds, and shorten the distance that pedestrians and bicyclists must cross at TH 47. The lane reduction will also provide additional space to accommodate enhanced pedestrian and bicycle facilities, as well as furnishings to improve the public realm.

Older traffic signals are being updated to include enhanced pedestrian features (e.g., countdown timers, leading intervals, audible push buttons, etc.).

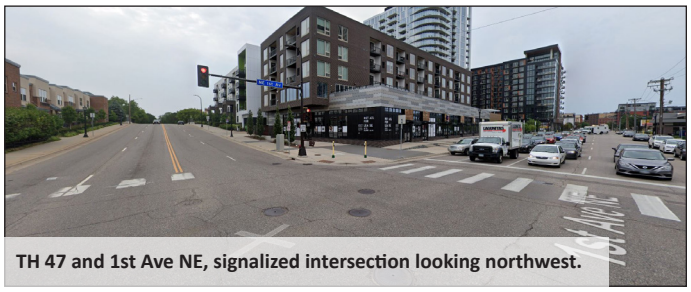
Project Benefits

- Reduced road width
- Reduced crossing distance for pedestrians at TH 47
- Calmed traffic speeds and eliminated lane weaving
- Updated traffic signals to include enhanced features (APS modifications, countdown timers, etc.)
- Increased visibility for pedestrians and bicyclists
- Additional space to accomodate enhanced pedestrian and bicycle facilities
- Improved transit stops
- ADA accessibility improvements
- Enhanced pedestrian-level lighting
- Separated bike facilities between Central Ave and 1st Ave NE

Project Area

Issues to Be Addressed

- Lane weaving, vehicle speed, dual lane threats
- Wide crossing distances
- Outdated crossing signals
- Poor safety and comfort for bicyclists



TH 47 and 1st Ave NE, signalized intersection looking northwest.

Unsignalized intersection of TH 47 and 7th Ave, looking east.

TH 47 west of 1st Ave NE, looking northwest from railroad bridge.

Saint Anthony West Neighborhood
Small Area Plan: Volume 2

Preface

This volume, Volume 2 of the *Saint Anthony West Neighborhood Small Area Plan* presents the Saint Anthony West neighborhood's plan document and policies. Volume 1 presents findings from background research and base-level information that supports conclusions and recommendations discussed in this volume of the plan.

Plan directions and policies presented in Volume 2 supplement, support and sometimes modify the *City of Minneapolis Comprehensive Plan*. Consequently, many key ideas of the city plan are reaffirmed, but a few changes or additions are recommended. Where this plan departs from the city plan, the difference is noted.

This plan serves as the official statement by the Saint Anthony West Neighborhood Organization (STAWNO) regarding how to apply the *Minneapolis Comprehensive Plan* in its neighborhood. STAWNO intends that this plan will be incorporated by reference into the city's *Comprehensive Plan,* as many other small area plans have been. This will help city staff understand how the *Comprehensive Plan* should be interpreted and applied in the Saint Anthony West neighborhood.

This volume of the plan is arranged to include and address "Necessary Components of a Small Area Plan," as outlined by the City of Minneapolis in its *Neighborhood Guide for Developing Planning Documents.* Some of the necessary components that are addressed in this volume of the plan are:

- Technical Areas:
  - Future land use plan
  - Urban character and design
  - Transportation
  - Public realm
- Analysis of Opportunity Sites
- Goals, Objectives, and Policies
- Implementation Plan
- Neighborhood Vision and Goals
- Recommended Comprehensive Plan Amendments

Planning and Economic Development for a mandatory 45-day public comment period before coming back to the City Planning Commission and City Council for formal adoption.

Neighborhood Vision and Goals

The neighborhood's vision and goals are the broad aspirations of the Saint Anthony West Neighborhood.

Neighborhood Vision Statement

The St. Anthony West neighborhood will build on its assets (its history, quality housing stock, sound urban infrastructure, and supportive social networks) to usher in a rebirth in the neighborhood's appeal as a choice location for urban living. These characteristics, which made the neighborhood successful in the past, will serve the neighborhood's future, ensuring a welcoming environment for a diverse community of seniors, single adults, and families with and without children.

The neighborhood will be viewed as an attractive area by people who want to become part of a cohesive and healthy community. New comers to St. Anthony West will value the neighborhood's historical and cultural resources, location within the region, proximity to downtown Minneapolis and the Mississippi River, accessible transportation options, preservation of traditional land use and neighborhood development pattern, support and promotion of the business climate, sustainability-focused new development, and parks.

Neighborhood Goals:

Attract Families
Re-balance the neighborhood, improve the housing stock and strengthen the community by increasing the number of families with school-age children.

Protect Traditional Appearances
Maintain the predominant, traditional appearance of the neighborhood.

Revitalize the Housing
Renovate and rehabilitate the current housing stock. Build new housing that is visually compatible with the rest of the housing on the block face.

Improve Appearances
Improve the maintenance of private yards, building exteriors and public boulevards between the sidewalk and the street.

Take Back the Streets
Soften the effect of traffic through the neighborhood with road re-design and land redevelopment.

Future Land Use and Built Form Plans

This section of the plan presents two closely related elements:

- The **land use plan**, including a map, policies and opportunity locations
- The **built form plan**, including a map addressing heights and shop fronts, and graphic guidelines addressing building frontages.

All of these plan elements should be used by the city and STAWNO to review development applications and to guide amendments to the zoning map.

Key Objectives of the Land Use and Built Form Plans

The land use and built form plans were prepared to respond to STAWNO stakeholders' desires to accommodate growth (redevelopment and development) while protecting the structure of the traditional neighborhood and its appearance and values. Agreement was reached where stakeholders found common ground in identifying future land uses and future controls that would regulate the form of buildings. Thus, the future land use plan and the future built form plan are intended to operate in concert, and key objectives of the two plans are to provide the neighborhood and the Minneapolis Department of Planning and Economic Development (CPED) with a construct for promoting land development that:

- ✓ Protects the established low- to medium-density pattern of housing and small businesses
- ✓ Maintains the predominate, traditional appearance of the neighborhood, which is residential buildings of two to four stories with front porches, gables, rear garages and small front lawns. Any new building should follow the design guidelines of this plan.
- ✓ Allows new residential buildings that are compatible in size and appearance with their neighbors while accommodating architectural innovation
- ✓ Promotes residential and/or commercial redevelopment along the Broadway Street frontage and along both sides of University Avenue while protecting nearby housing
- ✓ Supports walking and bicycling
- ✓ Protects and honors community heritage as expressed through its buildings, particularly the churches.

Future Land Use Plan

As indicated by Figure 1, Future Land Use Plan, the neighborhood reaffirms most of the city's Land Use Plan map, but notes community-supported changes and/or important provisions.

Figure 1
Future Land Use Plan

The Mixed-Use land use plan classification is shown both within and outside the Broadway-Marshal Activity Center.[1] STAWNO proposes that the Mixed-Use land use plan category should be expanded along Broadway Street to promote redevelopment of underutilized or obsolete properties along that high-traffic, arterial street. Please refer to Figure 1.

Transitional Industrial Category:
The GRACO, Inc. property is shown on the Future Land Use map of the *Minneapolis Comprehensive Plan* as Transitional Industrial because it is not located in an "Industrial Employment District." Thus, the City is saying that this property may be allowed to evolve to a non-industrial land use some day in the future, if that is the desire of the property's owners.

Because GRACO is a good neighbor and provides many well-paying jobs, STAWNO hopes that GRACO remains and thrives for a long time. If GRACO's owners should ever decide to leave, a wide range of possible land uses would be allowed based on market preferences except that the site should not be used for more intensive or visually incompatible industry.

Parks Category:
The former site of Sherer Brothers Lumber will be developed as a major new riverfront park and sheltered swimming beach, per plans prepared by the Minneapolis Park and Recreation Board (MPRB). The northeastern corner of that site, near Sibley Street and 10th Avenue, may be leased by the MPRB to a private entity for a yet-unknown commercial use. STAWNO advocates for including a permanent, enclosed space for the Northeast Minneapolis Farmers Market in the mix of commercial uses that will be developed.

A trail corridor is expected to be acquired along the riverfront from Broadway Street to 10th Avenue, crossing the GRACO land, as previously negotiated. The design and use of those lands is the responsibility of the MPRB.

Dickman Park should remain in its present size and its current general use, which is a mixture of active and passive recreation with generous and well-maintained plantings. Dickman Park is the center of the Saint Anthony West neighborhood and the closest thing to its "town square." Therefore, it is worthy of a high level of improvement and maintenance.

Community Corridor Feature:
According to the *Minneapolis Comprehensive Plan*, Community Corridors are designated as streets with a high level of transit activity, where the predominant land use is residential, where the density ranges between 20 and 50 dwelling units per acre, and where businesses are clustered near the major street intersections. The commercial enterprises along these streets should be primarily small retail and service-oriented businesses that serve the immediate neighborhood. The *Minneapolis Comprehensive Plan* shows the Community Corridor designation along Broadway Street, University Avenue, Marshall Street south from Broadway to 8th Avenue, and 2nd Street. However, STAWNO recommends that the Community Corridor designation be removed from 2nd Street in this neighborhood.

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[1] An Activity Center is defined in the *Minneapolis Comprehensive Plan* as a location of higher-density development, usually oriented toward business but possibly including housing. It attracts users from across the city or the region, is served by transit and is easily walkable.

Rationales for this recommendation are the neighborhood's visions for University Avenue, which is immediately east of 2nd Street, and 2nd Street as they passes through Saint Anthony West. The neighborhood envisions University Avenue, already designated as a Community Corridor, as the appropriate and preferred street for comparatively higher density land uses (both residential and commercial). Second (2nd) Street, by comparison, has a lower daily traffic volume, no truck traffic, lower average traffic speed, and an adjacent park. These factors contribute to its character as a low-intensity street. It is this character the neighborhood wishes to protect.

Field reconnaissance and scoping further showed that the character of 2nd Street in Saint Anthony West is entirely different than the character of 2nd Street north of East Broadway Street and south of the railroad right-of-way that forms the neighborhood's southern border. North of East Broadway Street and up to 14th Avenue, high density residential and business uses front on 2nd Street, and low density residential uses do not even appear on 2nd Street until it intersects 15th Avenue. South of the railroad right-of-way, 2nd Street enters an area that is fully developed with high density residential uses. Thus, the Community Corridor designation, which is appropriate for segments of 2nd Street outside the neighborhood, does not ensure the neighborhood's goals. The two goals are: 1) directing comparatively higher density growth to University Avenue and 2) maintaining the existing character of 2nd Street as a comparatively lower density, low activity street.

Regarding transit service along 2nd Street and University Avenue, it should be added that it is the neighborhood's desire that:: 1) Metro Transit Route 11, which runs on 2nd Street, should not be relocated to another street; even if 2nd Street is no longer designated a community corridor; 2) Route 824 on University Avenue should be maintained and a stop for this route should be added in the neighborhood; and 3) an additional bus route on University Avenue, with service to Stadium Village should be considered.

The *Minneapolis Comprehensive Plan* indicates that businesses may be permitted along Community Corridors on a case-by-case basis, according to their effect on nearby housing. STAWNO believes, however, that the only appropriate locations for businesses along these corridors in this neighborhood are those shown as either Neighborhood Commercial Node or Mixed Use on Figure 1 or as Shop Front on Figure 2, Built Form Plan.

STAWNO endorses the following Community Corridor policies from the *Minneapolis Comprehensive Plan*:

- Support the continuation of the current small businesses along the Community Corridors;
- Support new small retail or service businesses and mixed uses where Community Corridors intersect the Broadway Street Mixed-Use Activity Center;
- Disallow [change: not just "discourage"] land uses that diminish the transit-and pedestrian-oriented character of the Community Corridors, such as automobile services and drive-up window service;
- Discourage the conversion of existing housing to businesses outside of the Mixed-Use plan classification;

- Protect strong blocks, street character and neighborhood institutions
- Focus the most intense investment along transit lines
- Encourage small, neighborhood-serving shop fronts at key intersections
- Strengthen the walking experience in the neighborhood

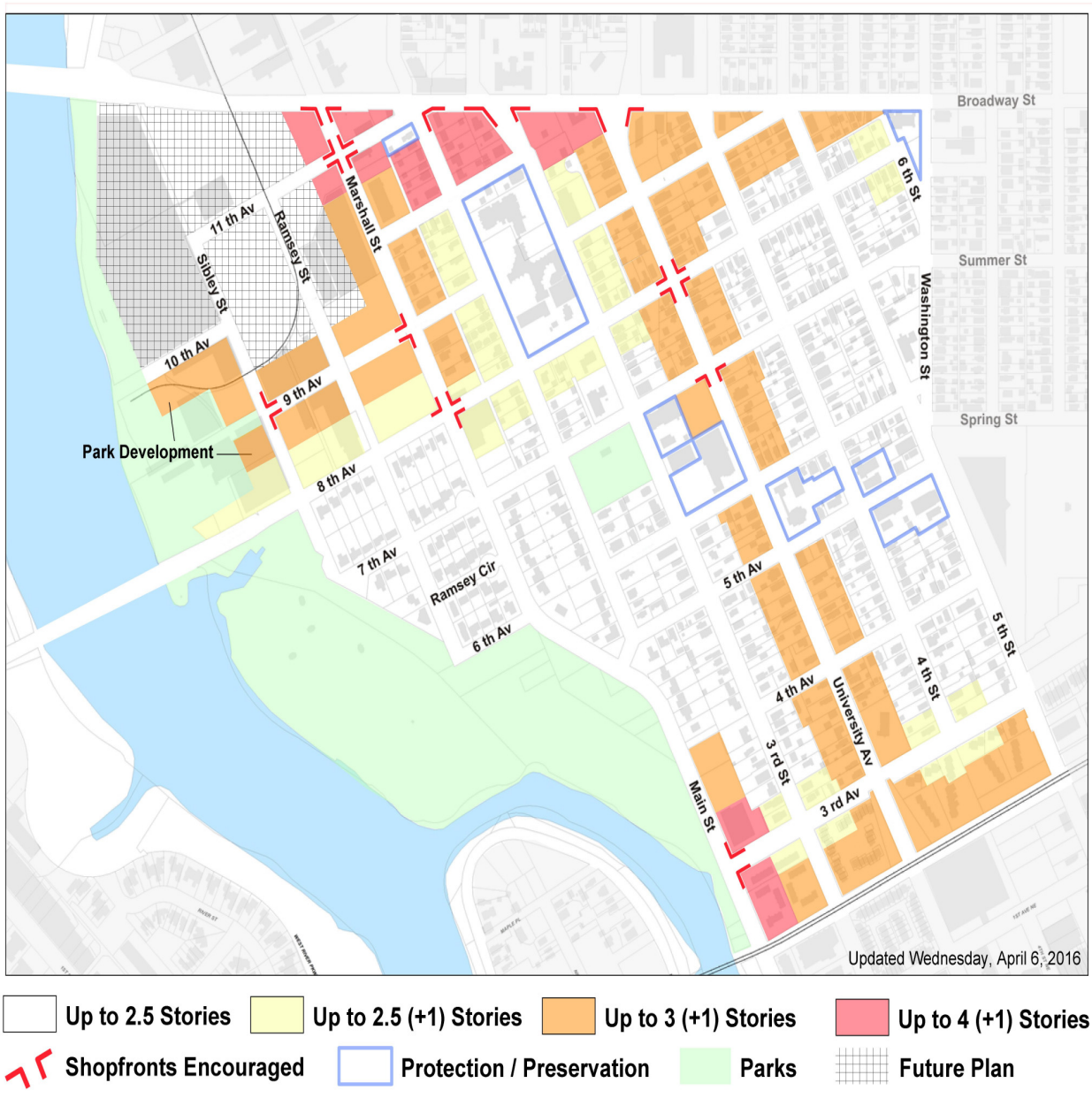


Figure 2:
Future Built Form Plan

7. Neighborhood Entrances and Edges

Highlight the principal passages through the Neighborhood – Marshall, Main and Second Streets and 8th Avenue -- with landscaping, lighting, sidewalks and building orientation Announce and celebrate neighborhood entrances and passages with monuments, signs, landscaping, lighting and private site design.

8. Neighborhood Passages and Center

Improve the appearance of the major streets through the neighborhood and calm the traffic. These streets include Broadway Street, University Avenue, and Marshall and 2nd Streets.

8.a Broadway Street:

Request that the City prepare a plan to install trees in the right-of-way behind the sidewalk to the extent that space and underground utilities allow. To complement the public plantings, encourage the city to require improved plantings on the private property between the front property line and either the parking lot or the building as redevelopment occurs along both sides of the street. Figures 5 and 6 show some of the possible planting space along Broadway Street. The faint yellow lines are the front property lines, the outer edges of the public street property.

Figure 5: Broadway between 5th and 6th Streets

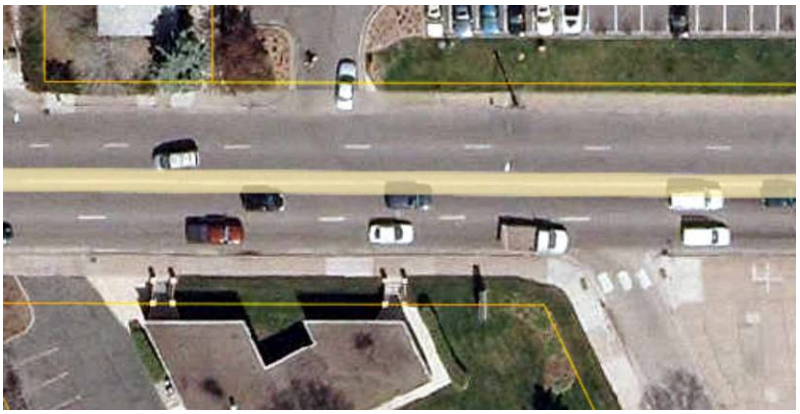


Figure 6: Broadway West of University Avenue

8.b University Avenue:

Request that the city plan for and install additional trees in the right-of-way, either between the curb and the sidewalk (the narrow space where they are now) or between the sidewalk and the property line. There is public property available on the house side of the sidewalk but it is perceived as being private land even though it is not. See Figure 7, on the following page. The blue outline shows the position of a typical house lot relative to the sidewalk.

Figure 7: University Avenue between 7th and 8th Streets

8.c Marshall Street:

Redesign and rebuild Marshall Street as more of a "parkway," as recommended by the *Above the Falls* master plan. Please refer to the Movement Plan section for a further description of this proposal.

8.d Second Street:

Request that the city fill the gaps in the street trees along 2nd Street. Second Street complements University Avenue as a north-south passage into and through the neighborhood, although 2nd Street has two rather than four traffic lanes, lower traffic volumes, and lower traffic speeds than University Avenue. It also has a more consistent set of street trees, probably because of its wider boulevards. Second Street also works with Main Street to visually bracket Dickman Park, the focal point of the neighborhood.

Movement Plan

Movement Objectives

The road system that serves the St. Anthony West Neighborhood consists of a Mn/DOT highway, two Hennepin County roads, and many City of Minneapolis streets. In addition to being organized by jurisdiction, roads and streets are functionally classified to describe the role they play in delivering transportation service to an area. Figure 10 highlights jurisdiction and functional classification of streets in the neighborhood.

The highest order facilities are classified as Arterials and Minor Arterials. Mid-level facilities are classified as collectors, and the lowest order facilities are classified as local streets. The highest order facilities are located and design to ensure the movement of traffic. The lowest order facilities are designed and located to ensure that private properties can be accessed from the street system. The mid-level facilities -- collectors -- are designed and located to provide for both through movement and accessibility.

As shown on Figure 10, on the next page, Broadway Street, University Avenue, and Marshall Street are each functionally classified as Minor Arterials. As cited, the strict definition of this functional class focuses on the movement of traffic through an area and places secondary priority on accessibility to adjacent land uses. Because the St. Anthony West neighborhood is in a heavily urbanized area, the definition cannot be strictly applied, and competing interests can lead to conflicts. Where the State, the County and the Metropolitan Council see these three roads as arterials, residents see them and wish to use them as neighborhood (*complete*) streets where access and multi-modal transportation are of primary importance.

General movement objectives addressed in the *Saint Anthony West Neighborhood Small Area Plan* are to:

- Ensure safety and convenience of travel
- Support all modes of travel
- Promote a livable and sustainable environment

More specifically, these can be divided into objectives for the regional roads and objectives for local, neighborhood streets.

Regional Road Objectives:

- Reduce vehicle speed
- Calm the flow of traffic
- Reduce the volume of truck traffic
- Improve safety for vehicles, pedestrians, and cyclists

City Street Objectives:

- Reduce use of local streets by regional traffic
- Ensure safety for pedestrians
- Ensure convenient and safe routes for cyclists
- Support complete streets

University Avenue:
Major concerns for University Avenue are:

- Traffic calming
- The volume of daily traffic (14,300 vehicles per day through the neighborhood) and its negative impact on quality of life
- Daily truck volumes at 400 heavy commercial vehicles per day

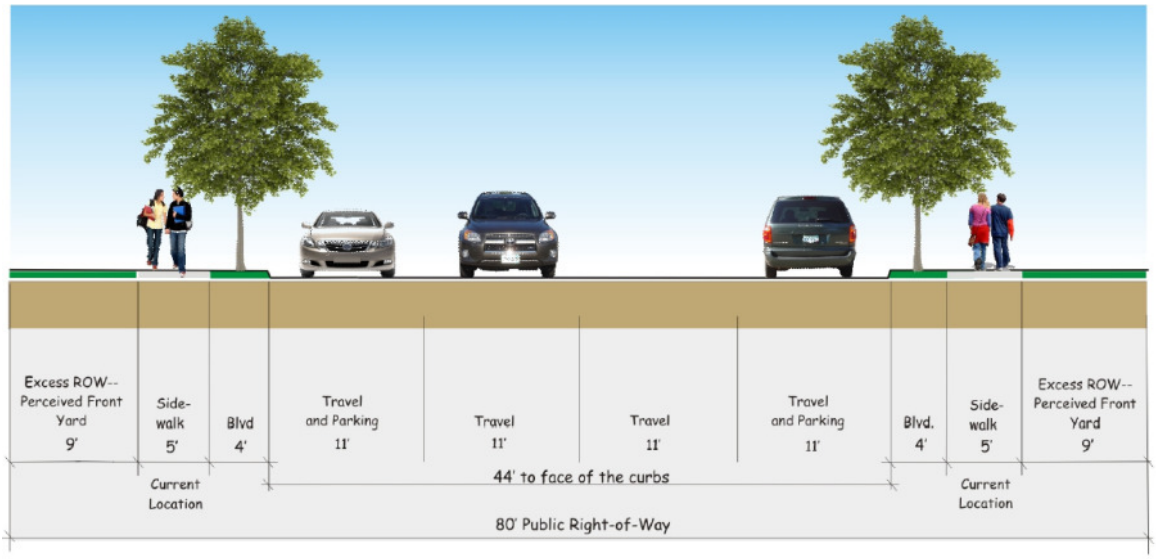
Because University Avenue is designated as a State of Minnesota Highway (Trunk Highway 47), a ban on truck traffic is not feasible. With 14,100 vehicles per day, there is too much traffic for successful implementation of a three-lane section. Analysis showed that in order to implement a three-lane section, on-street parking for residents would have to be eliminated.

It was agreed that a traffic calming and beautification strategy that includes planting trees in the public right-of-way would best serve the needs of residents along University Avenue. Figure 13 on page 39 shows the existing and recommended conditions. The recommended condition utilizes public right-of-way, which extends approximately 9 feet outside the sidewalk edge toward residences, for additional tree planting. This area, which is within the public realm, is likely viewed as private property by property owners.

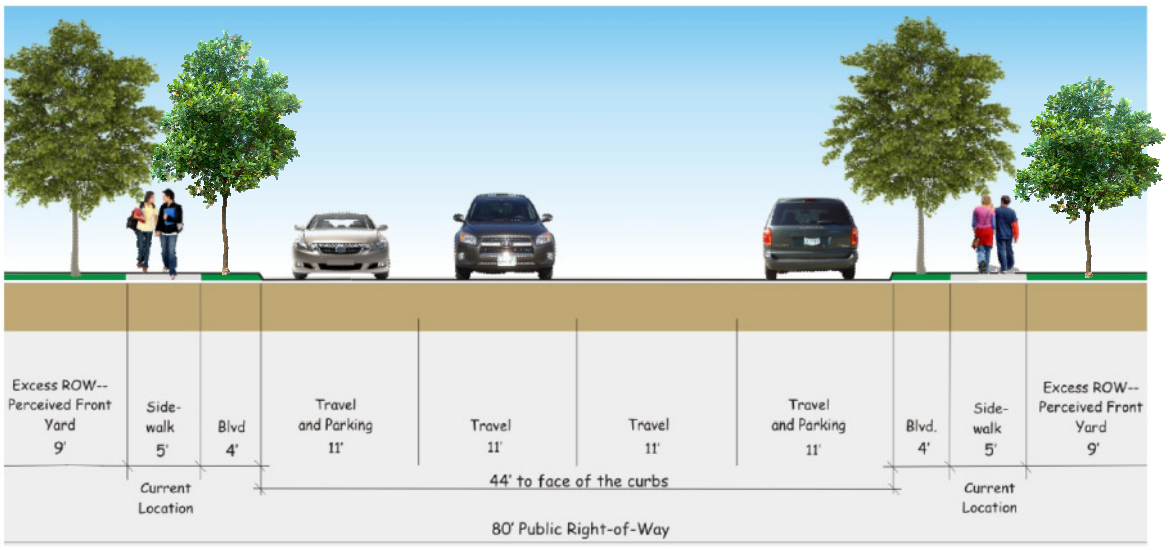
The existing boulevard on University Avenue is approximately 4 feet wide. Consistent with the above recommendation to plant trees in the right-of-way, the boulevard could be widened to a minimum of 6 feet, per design guidance provided in *Access Minneapolis: Ten Year Transportation Action Plan* (2005 -2012).

It is additionally recommended that in order to control and calm truck traffic, the city should re-engage Shoreham Yards in discussions that were held three years ago to encourage heavy commercial vehicles to find direct access to/from I-694 rather than circulating on University Avenue. A Citizens Advisory Committee consisting of Saint Anthony West community members should be included in any discussions the city has with Shoreham Yards.

Figure 13:
University Avenue Extensive Tree Planting in the Public Right-of-Way



Existing Condition
Looking North on University Avenue



Recommended Condition
Looking North on University Avenue