Application

17063 - 2022 Roadway Modernization

17480 - TH100 / Vernon Avenue / 50th Street Diverging Diamond Interchange

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	04/14/2022 11:12 AM

Primary Contact

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

Organization Information

Name:	EDINA,CITY OF

Jurisdictional Agency (if different):	
Organization Type:	City
Organization Website:	
Address:	PUBLIC WORKS DEPARTMENT 7450 METRO BLVD
*	EDINA (City) / Minnesota (State/Province) / 55428 (Postal Code/Zip)
County:	Hennepin
Phone:*	952-826-0411 Ext.
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PeopleSoft Vendor Number	0000020940A5

Project Information

Project Name	Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Interchange Reconstruction Project
Primary County where the Project is Located	Hennepin
Cities or Townships where the Project is Located:	City of Edina
Jurisdictional Agency (If Different than the Applicant):	Hennepin County

CSAH 158 (Vernon Avenue) is functionally classified as an A-Minor Arterial Reliever. The CSAH 158 Bridge over TH 100 carries a divided four-lane roadway with a sidewalk on the north side meant to serve pedestrians and cyclists. Over 22,000 vehicles travel over this bridge daily, which is projected to increase to 24,000 vehicles per day by 2040. The size of the sidewalk and the lack of separation from heavy traffic make this bridge uncomfortable for many pedestrians, creating a significant barrier within the Grandview commercial district. Additionally, the interchange with TH 100 is a complicated and redundant system of six unique access ramps that connect to four different streets within the district.

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

The project will reconstruct a 0.2-mile section of CSAH 158 from Grange Road to Arcadia Avenue. The existing bridge over TH 100 will be reconfigured and the on- and off-ramps will be reconstructed to create a diverging diamond interchange (DDI). DDIs are similar to standard diamond interchanges with the exception that traffic crisscrosses at either end of the bridge. This design works extremely well for interchanges with high turning volumes as the left turn movements operate similar to free rights. Pedestrian access over the bridge will be provided by a wide, barrier-protected median that connects to new sidewalks on either side of the bridge. This project will improve safety and mobility for all users, eliminate redundant access ramps and will not require replacing the existing bridge.

(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.

RECONSTRUCTION OF THE CSAH 158 (VERNON AVE) AND TH 100 INTERCHANGE TO A DDI, CONSTRUCTION OF SHARED-USE PATHS, SIGNALS, LIGHTING, STORM SEWER, ADA PED RAMPS

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)

0.2

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 $4,213,200.00

Match Amount $1,053,300.00

Minimum of 20% of project total

Project Total $5,266,500.00

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

Match Percentage 20.0%

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

Source of Match Funds Local

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

Preferred Program Year

Select one: 2026, 2027

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

Additional Program Years: 2024, 2025

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

Project Information-Roadways

County, City, or Lead Agency City of Edina

Functional Class of Road A-Minor Arterial Reliever

Road System CSAH

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

Road/Route No. 158

i.e., 53 for CSAH 53

Name of Road Vernon Avenue

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55436

(Approximate) Begin Construction Date 03/01/2026

(Approximate) End Construction Date 11/30/2026

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

From: **(Intersection or Address)**	Grange Road
To: **(Intersection or Address)** *DO NOT INCLUDE LEGAL DESCRIPTION*	Arcadia Avenue
Or At	
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of Trail (nearest 0.1 miles)	0
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	0
Primary Types of Work *Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.*	ROADWAY RECONSTRUCTION -GRADING, AGG BASE, BITUMINOUS BASE & SURFACE, CURB & GUTTER, STORM SEWER, SIGNALS, LIGHTING, SHARED USE PATHS, ADA CURB RAMPS

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:	27102
New Bridge/Culvert No.:	27102
Structure is Over/Under **(Bridge or culvert name):**	CSAH 158 (Vernon Avenue) over Trunk Highway 100

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, Objectives A & B, Strategies A1 & A2 (pages 2.2 & 2.3)

Goal B - Safety and Security, Objectives A & B, Strategies B1 & B6 (pages 2.5 & 2.8)

Goal C - Access to Destinations, Objectives A, B, D & E, Strategies C1, C2, C9, C15, C16 & C17 (pages 2.10, 2.11, 2.17, 2.18, 2.22, 2.23 & 2.24)

Goal D - Competitive Economy, Objectives A, B & C, Strategies D3 (pages 2.27 & 2.28)

Goal E - Healthy and Equitable Communities, Objectives A, B, C & D, Strategies E1, E2, E3, E4, E5, E6 & E7 (pages 2.30, 2.31, 2.32, 2.33 & 2.34)

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.

Edina Comprehensive Bicycle Transportation Plan (2007) - Pages 14, 21, 26, 27, 34, 35, 36, & 39 (See Attachment)

Edina Comprehensive Plan Update (2008) - Pages 4-16, 4-31, & 4-33 (See Attachment)

Grandview District Small Area Guide Plan Process Report (2010) - Pages 4, 5, 8, 9, 10, 12, 13, 14, 17, 18, 19, 25, 27, & 28 (See Attachment)

Grandview District Development Framework (2012) - Pages 3, 4, 7, 11, & 40 (See Attachment)

Hennepin County Pedestrian Plan (2013) - Pages 3, 15, 16, 20, & 21 (See Attachment)

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

Edina Grandview District Transportation Study (2016) - Pages vii, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 19, & 48 (See Attachment)

Edina Pedestrian and Bicycle Master Plan (2018) - Pages 1, 16, 17, 18, 20, 21, 33, 36, 38, 39, 42, 43, 63, & 67 (See Attachment)

Edina 2018 Comprehensive Plan Update (2020) - Pages ii, 3-1, 3-9, 3-10, 3-22, 3-23, 3-24, 3-26, 5-6, 5-7, 5-8, 5-9, 5-29, & 5-30 (See Attachment)

Grandview East Area Transportation Study (2021) - Pages 1, 2, 3, 6, 15, 34, 39, 40, 41, 42, 43, 47, 52, & 53 (See Attachment)

Hennepin County ADA Transition Plan (2015) - Pages 4, 9, 10, & 12 (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 2022 funding cycle).
Strategic Capacity (Roadway Expansion): *$1,000,000 to $10,000,000*
Roadway Reconstruction/Modernization: *$1,000,000 to $7,000,000*
Traffic Management Technologies (Roadway System Management): *$500,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

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

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

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

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

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

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

Date plan completed: 03/01/2022

Link to plan: www.edinamn.gov/DocumentCenter/View/12305/ADA-Transition-Plan-Policy-2022-PDF

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

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

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

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

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

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

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

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

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

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

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

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

Roadways Including Multimodal Elements

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

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

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

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

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

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

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. Yes

Bridge Rehabilitation/Replacement projects only:

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

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

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

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

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

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

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

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$202,600.00
Removals (approx. 5% of total cost)	$117,700.00
Roadway (grading, borrow, etc.)	$298,100.00
Roadway (aggregates and paving)	$400,500.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$235,200.00
Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$427,500.00
Traffic Control	$202,600.00
Striping	$29,400.00
Signing	$29,400.00
Lighting	$480,000.00
Turf - Erosion & Landscaping	$58,800.00
Bridge	$1,104,800.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$600,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$810,200.00
Other Roadway Elements	$58,800.00
Totals	**$5,055,600.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$0.00
Sidewalk Construction	$102,900.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$108,000.00
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	**$210,900.00**

Specific Transit and TDM Elements

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

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	$0.00

Subtotal	$0.00
Other Costs - Administration, Overhead,etc.	$0.00

Totals

Total Cost	$5,266,500.00
Construction Cost Total	$5,266,500.00
Transit Operating Cost Total	$0.00

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

Existing Employment within 1 Mile:	8259
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	999
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1649880280849_HennCSAH158&TH100_RegnlEconomyMap_April2022.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

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

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

Measure A: Current Daily Person Throughput

Location	West of Grange Road
Current AADT Volume	22500

Existing Transit Routes on the Project	46

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

Upload Transit Connections Map	1649862967779_HennCSAH158&TH100_TransitConnectnsMap_April2022.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	29250.0

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:

Response:

City and County staff have gathered public input on the preferred CSAH 158 design for 15+ years. Open house meetings, focus groups, site tours, design charrettes, developer/business/property owner roundtables, pop-up events, Community Advisory/Steering Teams and Bike Edina Task Force (BETF) meetings have all been utilized. Public websites have shared updates on engagement and plan information. Online surveys and interactive maps have been used to engage stakeholders. The BTE website (bettertogetheredina.org) continues to provide residents with the ability to learn about projects like CSAH 158, connect with staff and stay informed.

In 2007, Edina began its efforts toward becoming a more walkable/bikeable community through the development of its first Bike Plan. CSAH 158 is the main route through the Grandview District, which is an 80-acre commercial node focused primarily on the needs of local residents. The 2007 Plan designated CSAH 158 as a secondary bike route. Principles guiding the selection of routes were derived from BETF and public input. A survey conducted in 2006 showed that 89% of respondents were supportive of the City developing walk/bike facilities.

All populations referenced above are served by the District and many depend on walking/biking/rolling to reach destinations and transit. Project area residents are both older (22%) and younger (24%) than the County average (14% & 22%, respectively). County residents are more diverse (31% vs 11%), with a higher percentage of residents with low-income (23% vs 14%).

In 2008, the Grandview area was designated as a "Potential Area of Change" in the City's Comp Plan. In 2009, the Council approved a process to engage the public in the planning for the District. The

process was led by an 18-person Community Advisory Team and included 2 open house meetings. The process concluded in 2010 and resulted in adoption by the Council of 7 Guiding Principles for the redevelopment of the District. In 2012, the City completed a development framework plan for the District. The process was led by a diverse 52-member Steering Committee. One of the main issues expressed during plan development was the lack of safe ped/bike areas. The plan contemplates a "complete streets" treatment on CSAH 158. In 2016, a transportation study was completed for the District. The study process included 3 phases, each culminating in an intensive week of design and stakeholder engagement. In 2018, Edina completed a Ped/Bike Plan. Plan recommendations were incorporated into the 2018 Comp Plan Update process, along with the approved small area plan for Grandview. See attached plan excerpts for details. Additional engagement occurred as part of the County's 2013 Ped Plan and 2015 Bike Plan.

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

Measure B: Equity Population Benefits and Impacts

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

Response:

The project benefits equity populations through improvements to and prioritization of multimodal transportation facilities, on which these equity populations heavily rely. The width of the sidewalk on the CSAH 158 bridge and the lack of separation from heavy traffic makes this bridge uncomfortable for many pedestrians, creating a significant barrier within the Grandview commercial district. The proposed DDI improves the safety for pedestrians and bicyclists crossing the new and widened shared-use facilities, the ADA-compliant curb ramp designs, improved lighting, high-visibility crosswalks, two-stage crossing maneuvers, and pedestrian refuge islands. The new traffic signal systems at the TH 100 west and east ramps on CSAH 158/W 50th St will include full ped accommodations (APS, countdown timers, etc.). All roadway markings and crosswalk markings will be high-visibility. These improvements will enhance the accessibility and safety in the area for all users. Populations with disabilities will use the ADA-compliant ramps to make comfortable crossings and focus on only one direction of vehicle travel at a time. The non-motorized improvements will expand opportunities for low-cost and active modes of transportation, equating to various economic and health benefits.

This RBTN Tier 2 corridor provides connections to regional job concentrations and the regional transit system. Addressing the deficient non-motorized conditions along CSAH 158 is strongly reflected in the attached plans. Upon project completion, non-motorized users will be able to make seamless connections between regional and local destinations.

The project does not impose adverse human health or environmental effects on equity populations. 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 and will ensure that access to important services and transportation will be maintained. The City has a specialized communications team who are responsible for managing a phone hotline and project website during the planning, design, and construction phases of the project. The team will be responsible for responding to questions and concerns from residents, business owners, and employees who live and work in the area. Metro Transit will be involved in this process to ensure that any changes to the transit system needed during this time will be conveyed to transit riders along the corridor. For all modes, 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 developmentsexisting, under construction, or plannedwithin ½ mile of the proposed project. The applicant should note the number of existing subsidized units, which will be provided on the Socio-Economic Conditions map. Applicants can also describe other types of affordable housing (e.g., naturally-occurring affordable housing, manufactured housing) and under construction or planned affordable housing that is within a half mile of the project. If applicable, the applicant can provide self-generated PDF maps to support these additions. Applicants are encouraged to provide a self-generated PDF map describing how a project connects affordable housing residents to destinations (e.g., childcare, grocery stores, schools, places of worship).

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

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

Response:

The number of existing subsidized units within ½ mile of the project as provided on the Socio-Economic Conditions map is 33. In particular, there are three affordable housing locations within 1,400' of the CSAH 158 project limits. According to STREAMS, Summit Point (5010 Summit Ave) contains 29 affordable units and Spotless Lodge (5141 Williams Ave) contains 6 affordable units (see attached profiles). Avidor (5220 Eden Ave) is a six-story, 165-apartment unit building for residents 55+ and contains 18 affordable units (see supplemental map). The project benefits residents of affordable housing through improvements to and prioritization of multimodal transportation facilities.

Many residents of affordable housing depend on walking/biking/rolling to reach destinations and transit. This project will reconfigure the CSAH 158 bridge and reconstruct the on- and off-ramps to create a diverging diamond interchange. Pedestrian access over the bridge will be provided by a wide, barrier-protected median that connects to new sidewalks on either side of the bridge. This project will improve safety and mobility for all users, eliminate redundant access ramps and will not require replacing the existing bridge. All pedestrian infrastructure will meet ADA requirements. This RBTN Tier 2 corridor provides connections to regional job concentrations and the regional transit system. Addressing the deficient non-motorized conditions along CSAH 158 is strongly reflected in the attached plans. Upon project completion, non-motorized users will be able to make seamless connections between regional and local destinations.

The CSAH 158 corridor is served by Metro Transit local bus route service (Route 46) and includes several nearby stops. This route provides access to and from neighborhoods in Edina, as well as commute, school, and leisure destinations in

Minneapolis and St. Paul. The uninviting walk environment makes it difficult for pedestrians to access the nearby stops on CSAH 158. The proposed non-motorized 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:	
Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	Yes
Upload the Socio-Economic Conditions map used for this measure.	1649856850572_HennCSAH158&TH100_SocioEconomicMap_April2022.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1970	0.2	394.0	1970.0
	0	**394**	**1970**

Total Project Length

Total Project Length (as entered in "Project Information" form)	0.2

Average Construction Year

Weighted Year	1970

Total Segment Length (Miles)

Total Segment Length	0.2

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements: Yes

Response:

The project will improve access to TH 100, a north-south Principal Arterial and a Tier 1 route classified in the Met Council's Regional Truck Highway Corridor Study (2021 Update). The arterial extends over 15 miles through the western side of the Metro. The project will rehabilitate the pavement on the bridge deck and improve ramp geometrics to accommodate large commercial vehicles from CSAH 158 (Vernon Ave)/W 50th St. Freight haulers will benefit from improved emissions and fuel economy, reduced delay, and improved safety (up to 44% crash reduction compared to standard diamond interchange).

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines: Yes

Response:

The existing interchange will be reconfigured to provide 2-phase signals at each ramp and improve sight distance at the turn locations, which is significant since it is anticipated that 70%-85% of entering volumes will make a left or right-turn at the ramps. These improvements will reduce conflict points and potential for crashes at the interchange. The shared-use facilities are located at the center of the bridge, with crossings at the ramp crossovers. The center shared-use path and median allow for more efficient use of the bridge deck and adequate sight lines for non-motorized users and drivers. Clear zone and sight distance requirements will be met during the design phase.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics: Yes

Response:

The current interchange with TH 100 is a complicated and redundant system with 6 access ramps connecting to 4 streets in the area. The DDI will simplify the system to 2 signalized ramps on CSAH 158/W 50th St. A DDI only has 14 conflict points compared to 26 conflict points at a standard diamond interchange. The yield-controlled right-turn movement at the SB off-ramp will be realigned and signalized as an additional safety improvement. Ped/bike access will be provided over the bridge with a wide, barrier-protected median connecting to new sidewalk facilities on both sides of the bridge. The simple signal phasing will provide efficient coordination with adjacent signal systems.

(Limit 700 characters; approximately 100 words)

Access management enhancements:

Yes

Response:

The DDI interchange will simplify the existing complicated and redundant system by reducing the 6 access ramps onto 4 different streets to 2 signalized ramps on 1 street (CSAH 158/W 50th St). The existing ramps to and from Grange Rd will be eliminated and a new northbound exit ramp will be constructed at the east ramp. The separated on and off ramps on CSAH 158/W 50th St will be consolidated at the two ramp locations. By this significant consolidation of access points, the interchange will operate more efficiently and safely. The project will improve access and mobility for ped/bike users through the wide, barrier-protected median connecting to sidewalk facilities.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements:

Yes

Response:

The DDI design will rehabilitate the bridge over TH 100 and maintain the vertical and horizontal alignment requirements. The consolidation of the existing ramp locations to the 2 proposed ramps will significantly improve horizontal alignments seen in the system today. The horizontal alignment for the current yield-controlled right-turn lane at the SB off-ramp limits sight distance and encourages high exiting speeds for vehicles accessing CSAH 158. The project will relocate the SB right-turn lane to the west ramp for an improved alignment and control. The design will provide consistent and desired roadway design to maximize user safety and driver expectation.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation:

Yes

Response:

There is one known area near the SE quadrant of TH 100 & W 50th St that is susceptible to flooding as identified by Met Council's Localized Flood Map Screening Tool. The design process will investigate the most appropriate storm water mitigation strategies for this area. The project will replace storm sewer and curb and gutter to properly manage stormwater runoff and drainage. It is anticipated that the proposed impervious surface conditions will be less than the existing conditions due to the ramp consolidation. 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:

The DDI will incorporate new traffic signal systems at the TH 100 west and east ramps on CSAH 158/W 50th St with full pedestrian accommodations (APS, countdown timers, etc.). The design will evaluate the photometrics of the existing and new lighting fixtures along the bridge segment, at the two ramp locations, and for the shared-use facilities to improve the safety and comfort for all users during any time of the day. All roadway markings and crosswalk markings will be high-visibility.

(Limit 700 characters; approximately 100 words)

Other Improvements

Yes

Response:

Sidewalk facilities currently exist primarily on the north side of CSAH 158 over the TH 100 bridge. The project will locate a wider sidewalk facility in the center of the bridge with signal-controlled crossings at the ramp crossovers to allow for a more efficient use of the existing bridge deck and improve the pedestrian facility. The project will directly tie into the shared-use paths included in the Hennepin Co. project between Interlachen Blvd and TH 100, programmed 2023/2024 construction. All ped/bike infrastructure will meet ADA requirements. The improvements support the City's goals outlined in the Comprehensive Plan, Living Streets Plan, and Pedestrian and Bicycle Master Plan.

(Limit 700 characters; approximately 100 words)

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports

14.6	9.7	4.9	10113	9342	49553.7	45775.8	NA	1649881729685_HennCSAH158&TH100_SynchroReports_April2022.pdf
						45776		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	49553.7
Total Peak Hour Delay Reduced	45775.8

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):
9.59	8.08	1.51
10	**8**	**2**

Total

Total Emissions Reduced:	1.51
Upload Synchro Report	1649881882705_HennCSAH158&TH100_SynchroReports_April2022.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:	Crash Modification Factor ID: 10765 (Convert a Diamond Interchange to a Diverging Diamond Interchange or Double Crossover Diamond) Crash Modification Factor ID: 10761 (Convert a Diamond Interchange to a Diverging Diamond Interchange or Double Crossover Diamond)
(Limit 700 Characters; approximately 100 words)	
Rationale for Crash Modification Selected:	The CMF ID: 10761 and CMF ID: 10765 were used as the existing Diamond Interchange is being reconstructed as a Diverging Diamond Interchange. Both CMF's were used since 10761 applies to "All Crash" types and 10765 applies to angle/left-turn crash types.
(Limit 1400 Characters; approximately 200 words)	
Project Benefit ($) from B/C Ratio	$400,079.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	13
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	0
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	5
Worksheet Attachment	1649857856853_HennCSAH158&TH100_BCworksheet_April2022.pdf
Please upload attachment in PDF form.	

Roadway projects that include railroad grade-separation elements:

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

Measure A: Pedestrian Safety

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

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

SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements and Risk Elements

To receive maximum points in this category, pedestrian safety countermeasures selected for implementation in projects should be, to the greatest extent feasible, consistent with the countermeasure recommendations in the Regional Pedestrian Safety Action Plan and state and national best practices. Links to resources are provided on the Regional Solicitation Resources web page.

Please answer the following two questions with as much detail as possible based on the known attributes of the proposed design. If any aspect referenced in this section is not yet determined, describe the range of options being considered, to the greatest extent available. If there are project elements that may increase pedestrian risk, describe how these risks are being mitigated.

1. Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, midblock locations, and roundabouts.

Treatments and countermeasures should be well-matched to the roadways context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links.

The DDI will improve pedestrian and bicycle safety along CSAH 158/W 50th St by providing dedicated shared-use facilities parallel to the road. The facility widths vary between 8' and 10' off the bridge with a 12' facility in the center of the bridge. Locating the shared-use facility in the center of the bridge enhances the visibility between pedestrians and drivers and the proposed median barrier will provide further separation and comfort for users. Currently, there is a lack of sidewalk facility on the south side of the bridge. This project will allow pedestrians to cross TH 100 from the proposed facilities on both sides of CSAH 158/W 50th Street. Pedestrians will be able to cross to the other side of the road easily and safely by using the center sidewalk facility. These facilities will tie in directly with existing and future pedestrian and bicycle facilities along CSAH 158 and W 50th Street to expand the community's connectivity over TH 100.

Response:

The existing interchange does not provide any control for pedestrians crossing the NB on-ramp and SB right-turn off-ramp locations, which exposes pedestrians to free-flowing vehicles entering and exiting a high-speed facility. This project will significantly improve pedestrian safety by providing controlled, signalized locations at each crossing. The DDI design forces traffic to flow one-way in both directions, which reduces the number of conflict points between vehicles and pedestrians crossing the roadway. Identified by FHWA as a Proven Safety Countermeasure, the implementation of pedestrian refuge islands will reduce the likelihood of pedestrian injuries and fatalities.

Additional improvements seen in the DDI interchange include ADA ramps and crossings with adequately sized refuge islands to enhanced mobility for users with all abilities. Photometric analysis will determine the appropriate light levels

for the interchange, including the addition of pedestrian-scale lighting to effectively light the crossings and sidewalk facilities for all hours of the day, including at night and early morning.

(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: No, the distance between signalized intersections is decreasing by adding signals at both ramp terminals for the DDI configuration.

(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: Yes

If yes,
How many intersections will likely be affected?

Response: 1

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

Response:

Yes, the existing east ramp terminal provides one marked crosswalk for pedestrians on the north side of W 50th St. The DDI configuration and improvements will implement multi-phase crossing for pedestrian and bicyclists. At both ramp terminals, pedestrians/bicyclists traveling in one direction on the same side of the road over TH 100 will cross at four signal-controlled crossings. The crossing time will remain similar at the east ramp terminal since the existing conditions require pedestrians/bicyclists to cross in two stages. Additional crossing locations will be added to accommodate the new shared-use facilities on the south side of CSAH 158/W 50th Street.

Pedestrian refuge islands will be provided to offer a safe and comfortable location for pedestrians/bicyclists to wait before crossing. Delay will be minimized due to the two-phase signal timing at each signal. ADA ramps and high-visibility crosswalks will be implemented at each crossing to improve safety and comfort for all users.

(Limit 1,400 characters; approximately 200 words)

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

Response:

Not Applicable

(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:

Within the project area, crossing locations are spaced approximately 300' between the ramp terminals. At these locations, pedestrians and bicyclists can make safe and comfortable crossing maneuvers once given a walk signal at the at the two-stage signals. Due to the closely spaced ramp terminals and inside median shared-use path over TH 100, uncontrolled mid-block crossing activity within the project area will be reduced.

(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 design of the DDI includes several elements that will further manage speeds in the project area. One significant element is the horizontal alignment creating the two crossovers. These crossovers establish a traffic-calming feature that may influence slower and more consistent speeds on the bridge over TH 100. Additionally, the DDI design removes the uncontrolled, high-speed right-turn movement from W 50th Street onto NB TH 100 and realigns/signalizes the high-speed right-turn movement from the SB TH 100 exit ramp onto CSAH 158. The center raised medians will provide physical separation from opposing traffic and offer visual narrowing throughout the roadway segment. These geometric elements and signalization in the DDI design will encourage safer turning movements and more consistent speeds.

Pedestrian refuge islands at each of the ramp terminals provide a comfortable and safe location for pedestrians to wait for the walk indication at each signal. The added marked crosswalks, additional shared-use facilities, and pedestrian refuge islands establish a more multimodal, complete street network that can lead to a reduction in vehicle speeds on the roadway.

(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	
Existing road has AADT of greater than 15,000 vehicles per day	Yes
List the AADT	22500

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

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

Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes. If service was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 service for this item.)	Yes
Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays. If service frequency was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 frequency for this item.)	
Existing road is within 500 of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)	Yes
If checked, please describe:	CSAH 158 is located within 500' of Caribou Coffee (5000 Vernon Ave), Davanni's Pizza & Hot Hoagies Restaurant (5124 Gus Young Ln) and The Hilltop Restaurant (5101 Arcadia Ave). All of these destinations are located within Edina's Grandview commercial district and are depicted on the attached map.

(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:	CSAH 158 is located within 500' of Edina City Hall (4801 W 50th St), Tupa Park (4918 Eden Ave), and Hawthorne Place Condominiums (5113 W 49 St). All of these destinations are located within Edina's Grandview commercial district and are depicted on the attached map.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The CSAH 158 bridge over TH 100 carries a divided four-lane roadway with a sidewalk on the north side meant to serve pedestrians and cyclists. Over 22,000 vehicles travel over this bridge daily, which is projected to increase to 24,000 vehicles per day by 2040. The size of the sidewalk and the lack of separation from heavy traffic makes this bridge uncomfortable for many pedestrians, creating a significant barrier within the Grandview commercial district. Additionally, the interchange with TH 100 is a complicated and redundant system of six unique access ramps that connect to four different streets within the district.

The project will reconfigure the CSAH 158 bridge and reconstruct the on- and off-ramps to create a diverging diamond interchange (DDI). DDIs are similar to standard diamond interchanges with the exception that traffic crosses over at either end of the bridge. This design works extremely well for interchanges with high turning volumes as the left turn movements operate similar to free rights. Pedestrian access over the bridge will be provided by a wide, barrier-protected median that connects to new sidewalks on either side of the bridge. This project will improve safety and mobility for all users, eliminate redundant access ramps and will not require replacing the existing bridge. All pedestrian infrastructure will meet ADA requirements. The project will also directly tie into the shared-use paths included in the Hennepin Co. project between Interlachen Blvd and TH 100, programmed 2023/2024 construction. The City has identified this section of CSAH 158 as a secondary bike route. CSAH 158 is also a Tier 2 RBTN corridor. The CSAH 158 corridor is served by Metro Transit local bus route service (Route 46).

The design of the DDI will decrease the number of conflict opportunities between pedestrian and vehicular traffic while crossing CSAH 158. A DDI

allows one-way traffic flow in both directions, reducing conflict points for vehicles and pedestrians crossing the roadway. The pedestrian refuge islands constructed as part of the interchange are included in the "Proven Safety Countermeasures" as a suggested method to reduce the potential for pedestrian injuries and fatalities.

The new traffic signal systems at the TH 100 west and east ramps on CSAH 158/W 50th St will include full pedestrian accommodations (APS, countdown timers, etc.). The design will evaluate the photometrics of the existing and new lighting fixtures along the bridge segment, at the two ramp locations, and for the shared-use facilities to improve the safety and comfort for all users during any time of the day. All roadway markings and crosswalk markings will be high-visibility.

(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.

A virtual public meeting with residents was held on April 4th from 5-6pm (18 participants). The meeting was advertised ahead of time through press releases, social media, and through the project webpage on the City's Better Together Edina (BTE) website. The refined concept for CSAH 158 was presented to the public for feedback. Questions and comments submitted in the chat were responded to during the presentation and discussion. Those unable to attend the meeting were given an equal opportunity to review the proposed concept design and project details through the BTE website. A layout of the project is available in the document library. Residents were asked to submit feedback by April 8th to allow time for staff to prepare this response for this application.

www.bettertogetheredina.org/grandview-district-transportation-grant-funding-applications

Response:

For over 15 years, City and County staff have gathered public input on CSAH 158 through various policy plans and studies. The attached plan excerpts fully capture the engagement activities with Edina residents.

In 2008, the Grandview area was designated as a "Potential Area of Change" in the City's Comp Plan. In 2009, the Council approved a process to engage the public in the planning for the District. The process was led by an 18-person Community Advisory Team and included 2 open house meetings. The process concluded in 2010 and resulted in adoption by the Council of 7 Guiding Principles for the redevelopment of the District. In 2012, the City completed a development framework plan for the District. The process was led by a diverse 52-member Steering Committee. One of the main issues expressed during plan development was the lack of safe ped/bike areas. The plan contemplates a "complete streets"

treatment on CSAH 158. In 2016, a transportation study was completed for the District. The study process included 3 phases, each culminating in an intensive week of design and stakeholder engagement. In 2018, Edina completed a Ped/Bike Plan. Plan recommendations were incorporated into the 2018 Comp Plan Update process, along with the approved small area plan for Grandview. Edina's 2018 Comprehensive Plan is available online at: www.edinamn.gov/1669/View-Comprehensive-Plan.

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

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

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

Yes

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.

25%

Layout has not been started

0%

Attach Layout

1649882612639_HennCSAH158&TH100_ConceptLayout_April2022.pdf

Please upload attachment in PDF form.

Additional Attachments

1649882604248_HennCSAH158&TH100_MnDOTSupportLtr_April2022.pdf

Please upload attachment in PDF form.

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

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

Yes

100%

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

100%

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

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

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

0%

Project is located on an identified historic bridge

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

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

100%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - plat, legal descriptions, or official map complete

Yes

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

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):	$5,266,500.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$5,266,500.00
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
HennCSAH158&TH100_1PgProjectSumm_April2022.pdf	One-Page Project Summary	427 KB
HennCSAH158&TH100_EdinaBikePlanExcerpt2007_April2022.pdf	Edina Bicycle and Pedestrian Plan Excerpt (2007)	850 KB
HennCSAH158&TH100_EdinaCompPlanExcerpt2008_April2022.pdf	Edina Comprehensive Plan Excerpt (2008)	708 KB
HennCSAH158&TH100_EdinaCompPlanExcerpt2018_April2022.pdf	Edina Comprehensive Plan Excerpt (2018)	5.4 MB
HennCSAH158&TH100_EdinaPed&BikePlanExcerpt2018_April2022.pdf	Edina Pedestrian and Bicycle Plan Excerpt (2018)	2.0 MB
HennCSAH158&TH100_EdinaResolution_April2022.pdf	Edina Resolution	197 KB
HennCSAH158&TH100_EJSCREEN2015-2019ACSSummaryReport_April2022.pdf	EJSCREEN ACS Summary Report	1.4 MB
HennCSAH158&TH100_EquityDestinationsMap_April2022.pdf	Equity Destinations Map	601 KB
HennCSAH158&TH100_ExistingPhotos_April2022.pdf	Existing Photos	4.0 MB
HennCSAH158&TH100_GrandviewDistrictDevelopmentFrameworkExcerpt2012_April2022.pdf	Grandview District Development Framework Excerpt (2012)	243 KB
HennCSAH158&TH100_GrandviewDistrictSmallAreaGuidePlanExcerpt2010_April2022.pdf	Grandview District Small Area Guide Plan Excerpt (2010)	1.6 MB
HennCSAH158&TH100_GrandviewDistrictTransStudyExcerpt2016_April2022.pdf	Grandview District Transportation Study Excerpt (2016)	3.4 MB
HennCSAH158&TH100_GrandviewEastAreaTransStudyExcerpt2021_April2022.pdf	Grandview East Area Transportation Study Excerpt (2021)	1.0 MB
HennCSAH158&TH100_HennCo2040BikePlanExcerpt2015_April2022.pdf	Hennepin County 2040 Bicycle and Pedestrian Plan Excerpt (2015)	2.5 MB
HennCSAH158&TH100_HennCoADAPlan2015Excerpt_April2022.pdf	Hennepin County ADA Plan Excerpt (2015)	564 KB
HennCSAH158&TH100_HennCoPedPlanExcerpt2013_April2022.pdf	Hennepin County Pedestrian Plan Excerpt (2013)	3.3 MB
HennCSAH158&TH100_HennCoSupportLtr_April2022.pdf	Hennepin County Letter of Support	111 KB
HennCSAH158&TH100_HousingLinkProfile_April2022.pdf	Housing Link Profile Summary	669 KB

HennCSAH158&TH100_LvlOfCongestionMap_April2022.pdf	Level of Congestion Map	2.0 MB

Regional Economy

Roadway Reconstruction/Modernization Project: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Intercha |

Results

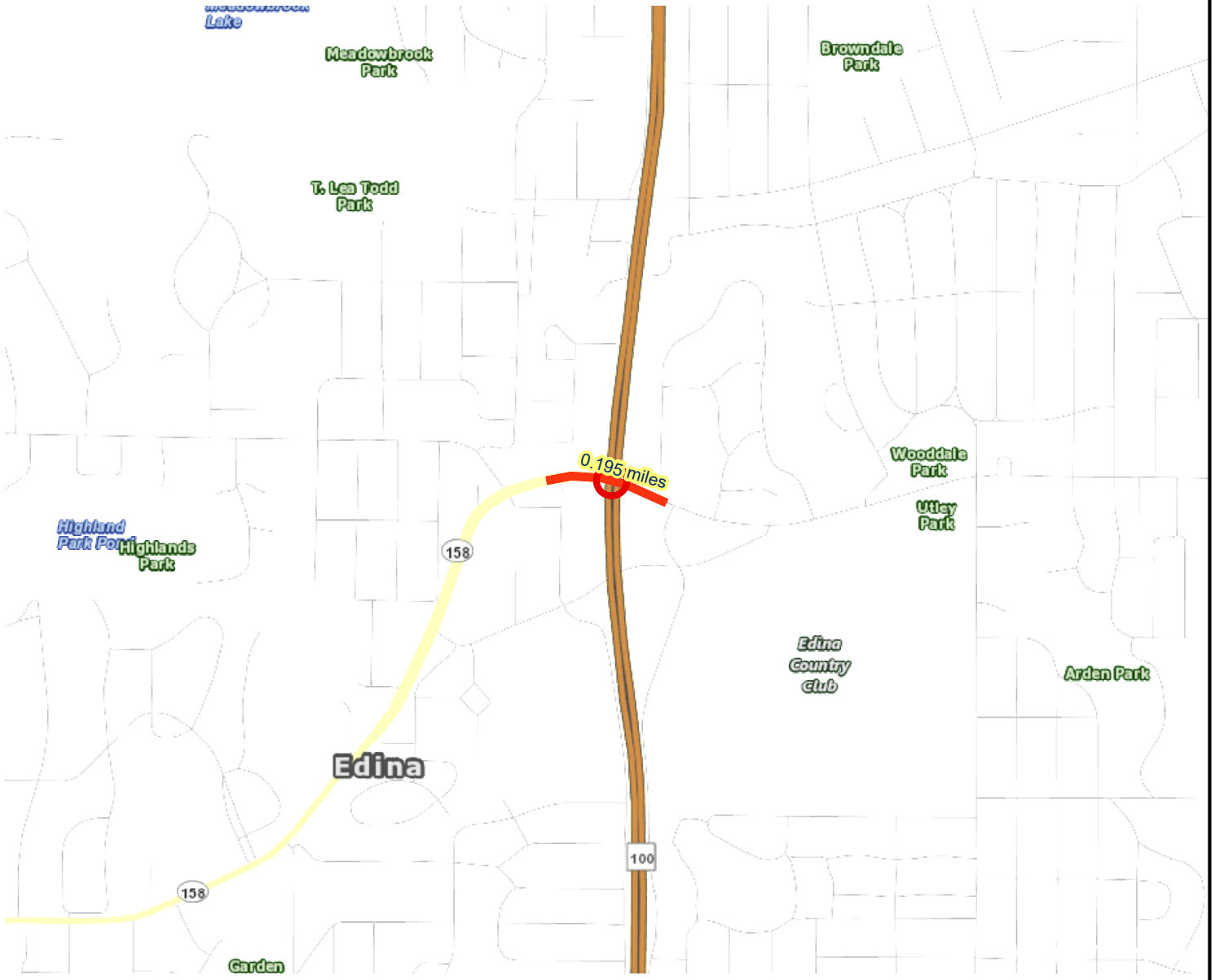
WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:

Edina
Population: 16372
Employment: 6631
Mfg and Dist Employment: 275

Hopkins
Population: 1069
Employment: 877
Mfg and Dist Employment: 702

St. Louis Park
Population: 2944
Employment: 751
Mfg and Dist Employment: 22



Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.15 0.3 0.6 0.9 1.2 Miles

Created: 3/18/2022
LandscapeRSA5

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

METROPOLITAN COUNCIL

Transit Connections

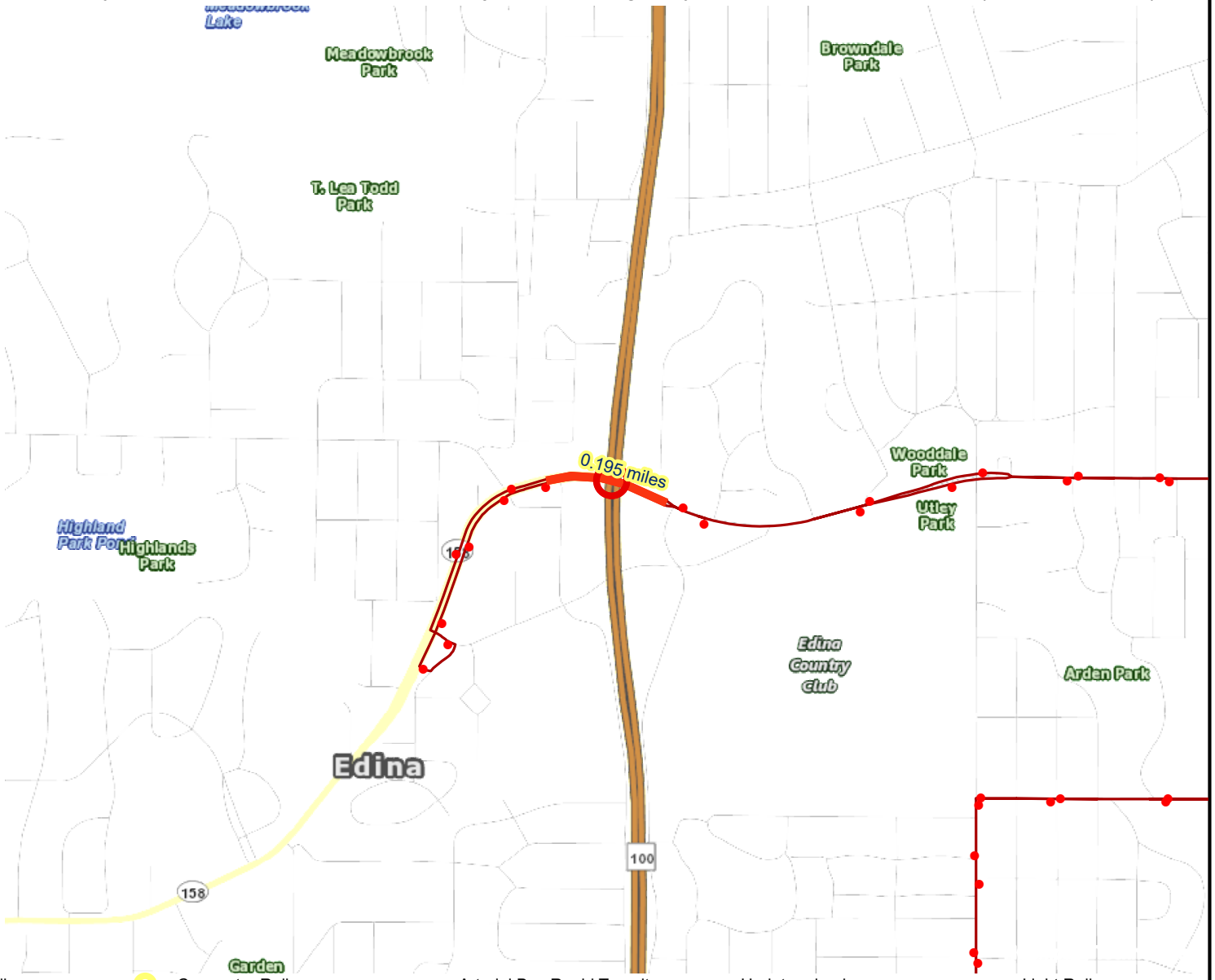
Roadway Reconstruction/Modernization Project: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Intercha

Results

Transit with a Direct Connection to project: 46

**indicates Planned Alignments*

Transit Market areas: 3



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: 3/18/2022
LandscapeRSA3

METROPOLITAN COUNCIL

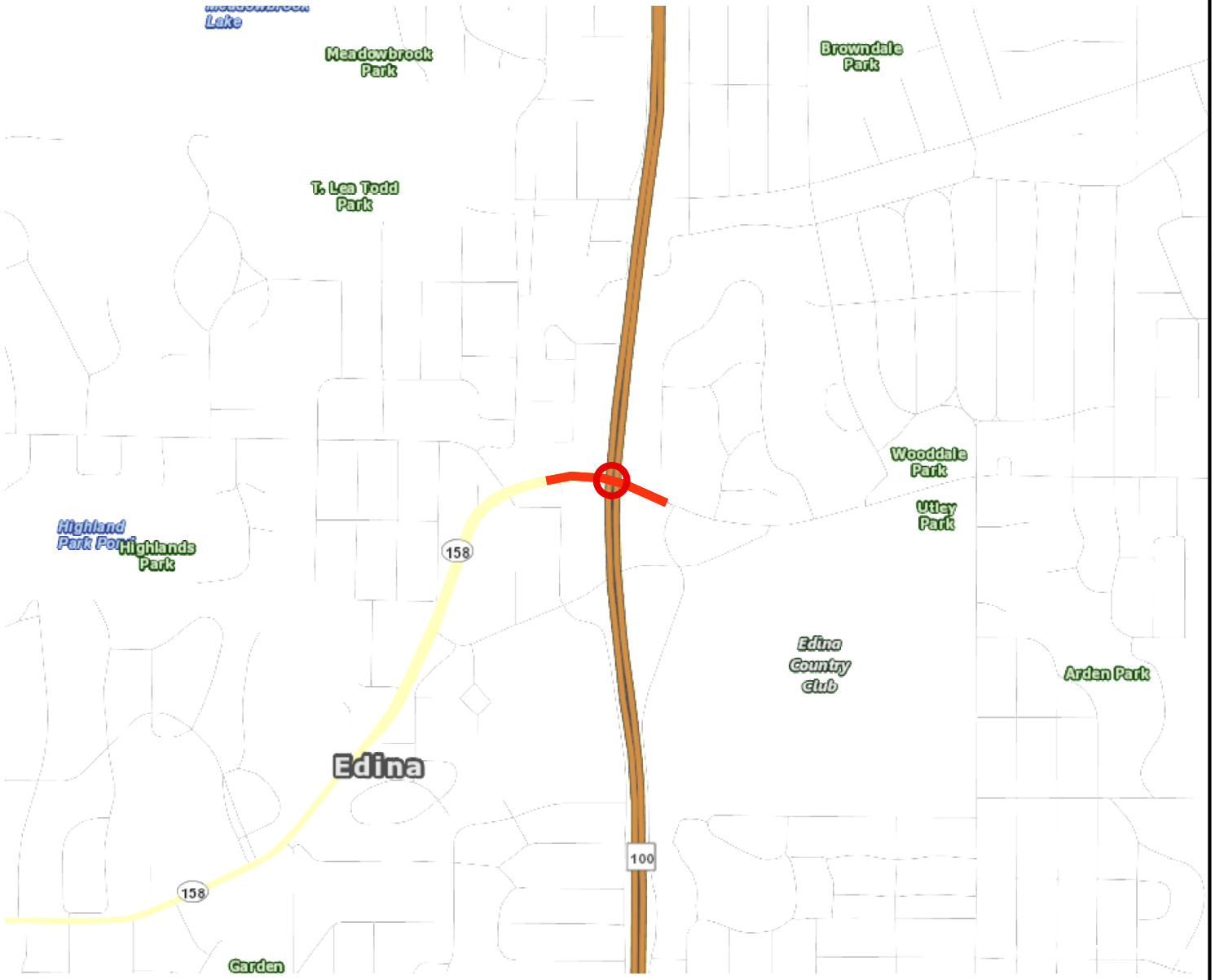
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Intercha | Map ID:

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 33

Project located in census tracts that are BELOW the regional average for population in poverty or population of color.



Points

Area of Concentrated Poverty

Lines

0 0.15 0.3 0.6 0.9 1.2 Miles

Created: 3/18/2022
LandscapeRSA2

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METROPOLITAN COUNCIL

TH 100 at Vernon Ave/50th Street
DDI Interchange Build

ID #	Intersection
21	Vernon at SB TH 100 Ramps
25	50th St at NB TH 100 On Ramp
22	50th St at Grange Road
34	Grange Road at NB TH 100 Ramps*

*removed in Build Conditions

Existing Conditions

Intersection #	21	25	22	34	Total
Volumes (vph)	3505	2963	2842	803	--
Delay (sec/veh)	28	0	15	8	--
Total Delay (seconds)	98140	0	42630	6424	147194

Emissions					
CO (kg)	3.72	0.61	1.97	0.43	6.73
NOx (kg)	0.72	0.12	0.38	0.08	1.30
VOC (kg)	0.86	0.14	0.46	0.10	1.56
			Emissions Total		9.59

Proposed Build Conditions

Intersection #	21	25	22	34	Total
Volumes (vph)	3505	3163	2674	0	--
Delay (sec/veh)	11	13	4	0	--
Total Delay (seconds)	38555	41119	10696	0	90370

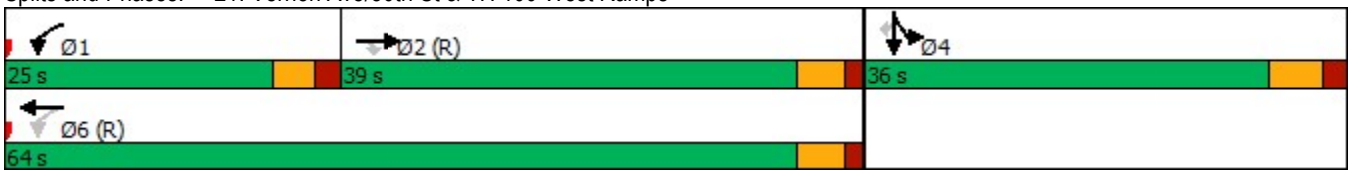
Emissions					
CO (kg)	2.38	2.05	1.24	0	5.67
NOx (kg)	0.46	0.40	0.24	0.00	1.10
VOC (kg)	0.55	0.47	0.29	0.00	1.31
			Emissions Total		8.08

Delay Reduction (seconds)	56824
Emissions Reduction (kg)	1.51

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	906	446	326	750	0	0	0	0	649	76	352
Future Volume (vph)	0	906	446	326	750	0	0	0	0	649	76	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	0		0	400		550
Storage Lanes	0		1	0		0	0		0	1		1
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	3539	1583	0	3486	0	0	0	0	1681	1702	1583
Flt Permitted					0.528					0.950	0.962	
Satd. Flow (perm)	0	3539	1583	0	1869	0	0	0	0	1681	1702	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			485									200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		641			460			769			1156	
Travel Time (s)		14.6			10.5			17.5			26.3	
Lane Group Flow (vph)	0	985	485	0	1169	0	0	0	0	409	379	383
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Total Split (s)		39.0	39.0	25.0	64.0					36.0	36.0	36.0
Total Lost Time (s)		5.0	5.0		5.0					6.0	6.0	6.0
Act Effct Green (s)		34.6	34.6		60.0					29.0	29.0	29.0
Actuated g/C Ratio		0.35	0.35		0.60					0.29	0.29	0.29
v/c Ratio		0.80	0.56		0.81					0.84	0.77	0.64
Control Delay		36.0	5.1		19.5					50.0	44.0	19.4
Queue Delay		0.0	0.0		0.0					0.0	0.0	0.0
Total Delay		36.0	5.1		19.5					50.0	44.0	19.4
LOS		D	A		B					D	D	B
Approach Delay		25.8			19.5						38.1	
Approach LOS		C			B						D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 35 (35%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

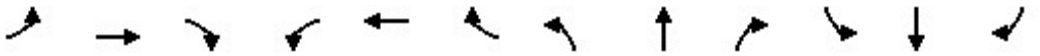
Splits and Phases: 21: Vernon Ave/50th St & TH 100 West Ramps



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1167	69	4	1182	226	194
Future Volume (vph)	1167	69	4	1182	226	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3511	0	0	3539	1770	1583
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	3511	0	0	3376	1770	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	8					
Link Speed (mph)	30			30	30	
Link Distance (ft)	285			749	272	
Travel Time (s)	6.5			17.0	6.2	
Lane Group Flow (vph)	1343	0	0	1289	246	211
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Total Split (s)	51.0		19.0	70.0	30.0	30.0
Total Lost Time (s)	5.0			5.0	5.5	5.5
Act Effct Green (s)	51.2			70.2	19.3	19.3
Actuated g/C Ratio	0.51			0.70	0.19	0.19
v/c Ratio	0.75			0.54	0.72	0.69
Control Delay	8.8			8.9	49.5	49.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.8			8.9	49.5	49.0
LOS	A			A	D	D
Approach Delay	8.8			8.9	49.3	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 22: Grange Rd & 50th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1236	319	0	1076	332	0	0	0	0	0	0
Future Volume (vph)	0	1236	319	0	1076	332	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		25	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		460			285			413			821	
Travel Time (s)		10.5			6.5			9.4			18.7	
Lane Group Flow (vph)	0	1343	347	0	1170	361	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	155	155	155	265	63	10
Future Vol, veh/h	155	155	155	265	63	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	200	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	168	168	288	68	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	698	74	79	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	407	988	1519	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	362	988	1519	-	-	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	534	-	-	-	-	-

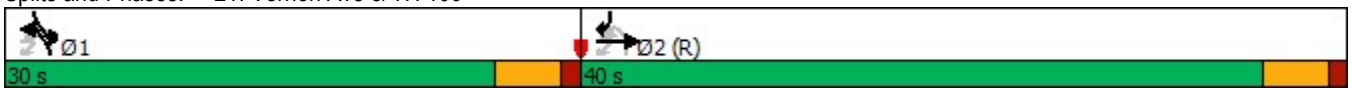
Approach	EB	NB	SB
HCM Control Delay, s	16.3	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1519	-	362	988	-	-
HCM Lane V/C Ratio	0.111	-	0.465	0.171	-	-
HCM Control Delay (s)	7.7	-	23.3	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	2.4	0.6	-	-

Lane Group	EBT	EBR2	NBL2	NBL	SBL	SBR2
Lane Configurations						
Traffic Volume (vph)	906	446	326	750	649	428
Future Volume (vph)	906	446	326	750	649	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)				100	500	
Storage Lanes				1	1	
Taper Length (ft)				50	50	
Satd. Flow (prot)	3539	1583	1770	3433	3433	1583
Flt Permitted			0.950	0.950	0.950	
Satd. Flow (perm)	3539	1583	1770	3433	3433	1583
Right Turn on Red		Yes	Yes		Yes	No
Satd. Flow (RTOR)					160	
Link Speed (mph)	30					
Link Distance (ft)	645					
Travel Time (s)	14.7					
Lane Group Flow (vph)	985	485	354	815	705	465
Turn Type	NA	custom	D.Pm	Prot	Prot	Prot
Protected Phases	2			1	1	2
Permitted Phases		2 1	1 2			
Total Split (s)	40.0			30.0	30.0	40.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Act Effct Green (s)	35.5	70.0	70.0	25.5	25.5	35.5
Actuated g/C Ratio	0.51	1.00	1.00	0.36	0.36	0.51
v/c Ratio	0.55	0.31	0.20	0.65	0.52	0.58
Control Delay	13.2	0.5	0.2	11.8	14.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	0.5	0.2	11.8	14.8	15.7
LOS	B	A	A	B	B	B
Approach Delay	9.0					
Approach LOS	A					

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 40 (57%), Referenced to phase 2:NBEB, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 55.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Vernon Ave & TH 100



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1367	69	4	1098	70	66
Future Volume (vph)	1367	69	4	1098	70	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	200		0	100
Storage Lanes		1	1		1	1
Taper Length (ft)			50		50	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		39				72
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			797	552	
Travel Time (s)	7.6			18.1	12.5	
Lane Group Flow (vph)	1486	75	4	1193	76	72
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2			4	4
Total Split (s)	30.5	30.5	10.0	40.5	29.5	29.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.5	5.5
Act Effct Green (s)	51.2	51.2	5.0	53.2	10.4	10.4
Actuated g/C Ratio	0.73	0.73	0.07	0.76	0.15	0.15
v/c Ratio	0.57	0.06	0.03	0.44	0.29	0.24
Control Delay	2.5	0.6	31.0	4.8	29.6	9.7
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	2.8	0.6	31.0	4.9	29.6	9.7
LOS	A	A	C	A	C	A
Approach Delay	2.6			4.9	19.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 52 (74%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Grange Rd & 50th St

Lane Group	WBT	WBR2	NBL	NBR2	SBL2	SBL
Lane Configurations						
Traffic Volume (vph)	836	332	240	200	319	1236
Future Volume (vph)	836	332	240	200	319	1236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)			0			100
Storage Lanes			1			1
Taper Length (ft)			50			50
Satd. Flow (prot)	3539	1583	1770	1583	1770	3433
Flt Permitted			0.950		0.950	0.950
Satd. Flow (perm)	3539	1583	1770	1583	1770	3433
Right Turn on Red		Yes	Yes	Yes	Yes	
Satd. Flow (RTOR)			38	30		
Link Speed (mph)	30					
Link Distance (ft)	335					
Travel Time (s)	7.6					
Lane Group Flow (vph)	909	361	261	217	347	1343
Turn Type	NA	custom	Prot	Prot	D.Pm	Prot
Protected Phases	6		5	6		5
Permitted Phases		6 5			5 6	
Total Split (s)	30.0		40.0	30.0		40.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Act Effct Green (s)	25.5	70.0	35.5	25.5	70.0	35.5
Actuated g/C Ratio	0.36	1.00	0.51	0.36	1.00	0.51
v/c Ratio	0.71	0.23	0.28	0.36	0.20	0.77
Control Delay	21.6	0.3	9.4	16.1	0.2	14.3
Queue Delay	1.0	0.0	0.0	0.0	0.0	0.2
Total Delay	22.6	0.3	9.4	16.1	0.2	14.5
LOS	C	A	A	B	A	B
Approach Delay	16.3					
Approach LOS	B					

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 2 (3%), Referenced to phase 6:WBT, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 25: TH 100 & 50th St

21: Vernon Ave/50th St & TH 100 West Ramps

Direction	All
Future Volume (vph)	3504
Total Delay / Veh (s/v)	28
CO Emissions (kg)	3.72
NOx Emissions (kg)	0.72
VOC Emissions (kg)	0.86

22: Grange Rd & 50th St

Direction	All
Future Volume (vph)	2842
Total Delay / Veh (s/v)	15
CO Emissions (kg)	1.97
NOx Emissions (kg)	0.38
VOC Emissions (kg)	0.46

25: TH 100 East Ramps & 50th St

Direction	All
Future Volume (vph)	2963
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.61
NOx Emissions (kg)	0.12
VOC Emissions (kg)	0.14

34: Grange Rd & TH 100 NB

Direction	All
Future Volume (vph)	803
Total Delay / Veh (s/v)	8
CO Emissions (kg)	0.43
NOx Emissions (kg)	0.08
VOC Emissions (kg)	0.10

21: Vernon Ave & TH 100

Direction	All
Future Volume (vph)	3505
Total Delay / Veh (s/v)	11
CO Emissions (kg)	2.38
NOx Emissions (kg)	0.46
VOC Emissions (kg)	0.55

22: Grange Rd & 50th St

Direction	All
Future Volume (vph)	2674
Total Delay / Veh (s/v)	4
CO Emissions (kg)	1.24
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.29

25: TH 100 & 50th St

Direction	All
Future Volume (vph)	3163
Total Delay / Veh (s/v)	13
CO Emissions (kg)	2.05
NOx Emissions (kg)	0.40
VOC Emissions (kg)	0.47

TH 100 at Vernon Ave/50th Street
DDI Interchange Build

ID #	Intersection
21	Vernon at SB TH 100 Ramps
25	50th St at NB TH 100 On Ramp
22	50th St at Grange Road
34	Grange Road at NB TH 100 Ramps*

*removed in Build Conditions

Existing Conditions

Intersection #	21	25	22	34	Total
Volumes (vph)	3505	2963	2842	803	--
Delay (sec/veh)	28	0	15	8	--
Total Delay (seconds)	98140	0	42630	6424	147194

Emissions					
CO (kg)	3.72	0.61	1.97	0.43	6.73
NOx (kg)	0.72	0.12	0.38	0.08	1.30
VOC (kg)	0.86	0.14	0.46	0.10	1.56
			Emissions Total		9.59

Proposed Build Conditions

Intersection #	21	25	22	34	Total
Volumes (vph)	3505	3163	2674	0	--
Delay (sec/veh)	11	13	4	0	--
Total Delay (seconds)	38555	41119	10696	0	90370

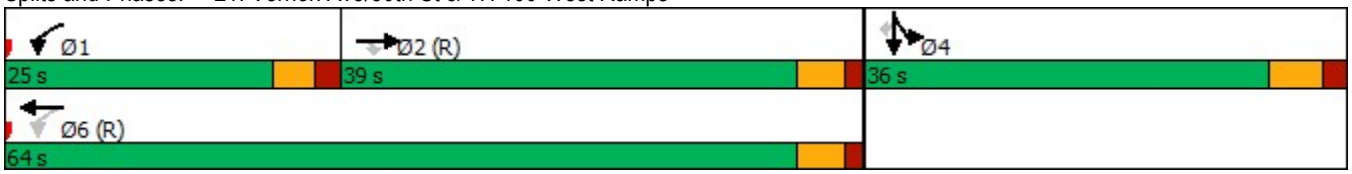
Emissions					
CO (kg)	2.38	2.05	1.24	0	5.67
NOx (kg)	0.46	0.40	0.24	0.00	1.10
VOC (kg)	0.55	0.47	0.29	0.00	1.31
			Emissions Total		8.08

Delay Reduction (seconds)	56824
Emissions Reduction (kg)	1.51

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	906	446	326	750	0	0	0	0	649	76	352
Future Volume (vph)	0	906	446	326	750	0	0	0	0	649	76	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		300	0		0	0		0	400		550
Storage Lanes	0		1	0		0	0		0	1		1
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	3539	1583	0	3486	0	0	0	0	1681	1702	1583
Flt Permitted					0.528					0.950	0.962	
Satd. Flow (perm)	0	3539	1583	0	1869	0	0	0	0	1681	1702	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			485									200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		641			460			769			1156	
Travel Time (s)		14.6			10.5			17.5			26.3	
Lane Group Flow (vph)	0	985	485	0	1169	0	0	0	0	409	379	383
Turn Type		NA	Perm	pm+pt	NA					Split	NA	Perm
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								4
Total Split (s)		39.0	39.0	25.0	64.0					36.0	36.0	36.0
Total Lost Time (s)		5.0	5.0		5.0					6.0	6.0	6.0
Act Effct Green (s)		34.6	34.6		60.0					29.0	29.0	29.0
Actuated g/C Ratio		0.35	0.35		0.60					0.29	0.29	0.29
v/c Ratio		0.80	0.56		0.81					0.84	0.77	0.64
Control Delay		36.0	5.1		19.5					50.0	44.0	19.4
Queue Delay		0.0	0.0		0.0					0.0	0.0	0.0
Total Delay		36.0	5.1		19.5					50.0	44.0	19.4
LOS		D	A		B					D	D	B
Approach Delay		25.8			19.5						38.1	
Approach LOS		C			B						D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 35 (35%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 91.1%		ICU Level of Service F	
Analysis Period (min) 15			

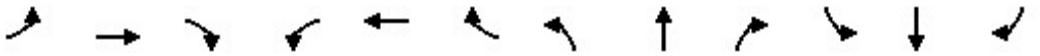
Splits and Phases: 21: Vernon Ave/50th St & TH 100 West Ramps



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1167	69	4	1182	226	194
Future Volume (vph)	1167	69	4	1182	226	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	3511	0	0	3539	1770	1583
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	3511	0	0	3376	1770	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)	8					
Link Speed (mph)	30			30	30	
Link Distance (ft)	285			749	272	
Travel Time (s)	6.5			17.0	6.2	
Lane Group Flow (vph)	1343	0	0	1289	246	211
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases			6			4
Total Split (s)	51.0		19.0	70.0	30.0	30.0
Total Lost Time (s)	5.0			5.0	5.5	5.5
Act Effct Green (s)	51.2			70.2	19.3	19.3
Actuated g/C Ratio	0.51			0.70	0.19	0.19
v/c Ratio	0.75			0.54	0.72	0.69
Control Delay	8.8			8.9	49.5	49.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.8			8.9	49.5	49.0
LOS	A			A	D	D
Approach Delay	8.8			8.9	49.3	
Approach LOS	A			A	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 22: Grange Rd & 50th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1236	319	0	1076	332	0	0	0	0	0	0
Future Volume (vph)	0	1236	319	0	1076	332	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		25	0		25	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	3539	1583	0	3539	1583	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3539	1583	0	3539	1583	0	0	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		460			285			413			821	
Travel Time (s)		10.5			6.5			9.4			18.7	
Lane Group Flow (vph)	0	1343	347	0	1170	361	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	155	155	155	265	63	10
Future Vol, veh/h	155	155	155	265	63	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	200	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	168	168	288	68	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	698	74	79	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	407	988	1519	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	362	988	1519	-	-	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	534	-	-	-	-	-

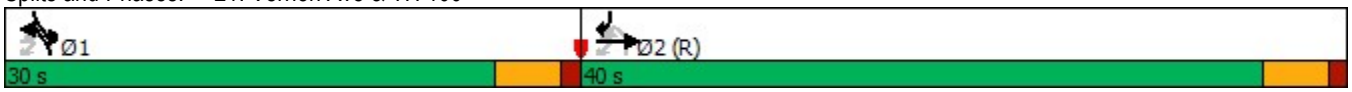
Approach	EB	NB	SB
HCM Control Delay, s	16.3	2.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1519	-	362	988	-	-
HCM Lane V/C Ratio	0.111	-	0.465	0.171	-	-
HCM Control Delay (s)	7.7	-	23.3	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	2.4	0.6	-	-

Lane Group	EBT	EBR2	NBL2	NBL	SBL	SBR2
Lane Configurations						
Traffic Volume (vph)	906	446	326	750	649	428
Future Volume (vph)	906	446	326	750	649	428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)				100	500	
Storage Lanes				1	1	
Taper Length (ft)				50	50	
Satd. Flow (prot)	3539	1583	1770	3433	3433	1583
Flt Permitted			0.950	0.950	0.950	
Satd. Flow (perm)	3539	1583	1770	3433	3433	1583
Right Turn on Red		Yes	Yes		Yes	No
Satd. Flow (RTOR)					160	
Link Speed (mph)	30					
Link Distance (ft)	645					
Travel Time (s)	14.7					
Lane Group Flow (vph)	985	485	354	815	705	465
Turn Type	NA	custom	D.Pm	Prot	Prot	Prot
Protected Phases	2			1	1	2
Permitted Phases		2 1	1 2			
Total Split (s)	40.0			30.0	30.0	40.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Act Effct Green (s)	35.5	70.0	70.0	25.5	25.5	35.5
Actuated g/C Ratio	0.51	1.00	1.00	0.36	0.36	0.51
v/c Ratio	0.55	0.31	0.20	0.65	0.52	0.58
Control Delay	13.2	0.5	0.2	11.8	14.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	0.5	0.2	11.8	14.8	15.7
LOS	B	A	A	B	B	B
Approach Delay	9.0					
Approach LOS	A					

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 40 (57%), Referenced to phase 2:NBEB, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 55.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 21: Vernon Ave & TH 100



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1367	69	4	1098	70	66
Future Volume (vph)	1367	69	4	1098	70	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	200		0	100
Storage Lanes		1	1		1	1
Taper Length (ft)			50		50	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		39				72
Link Speed (mph)	30			30	30	
Link Distance (ft)	335			797	552	
Travel Time (s)	7.6			18.1	12.5	
Lane Group Flow (vph)	1486	75	4	1193	76	72
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases		2			4	4
Total Split (s)	30.5	30.5	10.0	40.5	29.5	29.5
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.5	5.5
Act Effct Green (s)	51.2	51.2	5.0	53.2	10.4	10.4
Actuated g/C Ratio	0.73	0.73	0.07	0.76	0.15	0.15
v/c Ratio	0.57	0.06	0.03	0.44	0.29	0.24
Control Delay	2.5	0.6	31.0	4.8	29.6	9.7
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	2.8	0.6	31.0	4.9	29.6	9.7
LOS	A	A	C	A	C	A
Approach Delay	2.6			4.9	19.9	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 52 (74%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 22: Grange Rd & 50th St

Lane Group	WBT	WBR2	NBL	NBR2	SBL2	SBL
Lane Configurations						
Traffic Volume (vph)	836	332	240	200	319	1236
Future Volume (vph)	836	332	240	200	319	1236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)			0			100
Storage Lanes			1			1
Taper Length (ft)			50			50
Satd. Flow (prot)	3539	1583	1770	1583	1770	3433
Flt Permitted			0.950		0.950	0.950
Satd. Flow (perm)	3539	1583	1770	1583	1770	3433
Right Turn on Red		Yes	Yes	Yes	Yes	
Satd. Flow (RTOR)			38	30		
Link Speed (mph)	30					
Link Distance (ft)	335					
Travel Time (s)	7.6					
Lane Group Flow (vph)	909	361	261	217	347	1343
Turn Type	NA	custom	Prot	Prot	D.Pm	Prot
Protected Phases	6		5	6		5
Permitted Phases		6 5			5 6	
Total Split (s)	30.0		40.0	30.0		40.0
Total Lost Time (s)	4.5		4.5	4.5		4.5
Act Effct Green (s)	25.5	70.0	35.5	25.5	70.0	35.5
Actuated g/C Ratio	0.36	1.00	0.51	0.36	1.00	0.51
v/c Ratio	0.71	0.23	0.28	0.36	0.20	0.77
Control Delay	21.6	0.3	9.4	16.1	0.2	14.3
Queue Delay	1.0	0.0	0.0	0.0	0.0	0.2
Total Delay	22.6	0.3	9.4	16.1	0.2	14.5
LOS	C	A	A	B	A	B
Approach Delay	16.3					
Approach LOS	B					

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 2 (3%), Referenced to phase 6:WBT, Start of 1st Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 25: TH 100 & 50th St

21: Vernon Ave/50th St & TH 100 West Ramps

Direction	All
Future Volume (vph)	3504
Total Delay / Veh (s/v)	28
CO Emissions (kg)	3.72
NOx Emissions (kg)	0.72
VOC Emissions (kg)	0.86

22: Grange Rd & 50th St

Direction	All
Future Volume (vph)	2842
Total Delay / Veh (s/v)	15
CO Emissions (kg)	1.97
NOx Emissions (kg)	0.38
VOC Emissions (kg)	0.46

25: TH 100 East Ramps & 50th St

Direction	All
Future Volume (vph)	2963
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.61
NOx Emissions (kg)	0.12
VOC Emissions (kg)	0.14

34: Grange Rd & TH 100 NB

Direction	All
Future Volume (vph)	803
Total Delay / Veh (s/v)	8
CO Emissions (kg)	0.43
NOx Emissions (kg)	0.08
VOC Emissions (kg)	0.10

21: Vernon Ave & TH 100

Direction	All
Future Volume (vph)	3505
Total Delay / Veh (s/v)	11
CO Emissions (kg)	2.38
NOx Emissions (kg)	0.46
VOC Emissions (kg)	0.55

22: Grange Rd & 50th St

Direction	All
Future Volume (vph)	2674
Total Delay / Veh (s/v)	4
CO Emissions (kg)	1.24
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.29

25: TH 100 & 50th St

Direction	All
Future Volume (vph)	3163
Total Delay / Veh (s/v)	13
CO Emissions (kg)	2.05
NOx Emissions (kg)	0.40
VOC Emissions (kg)	0.47

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	Vernon Ave	**District**	Metro	**County**	Hennepin
Begin RP		**End RP**		**Miles**	
Location	Vernon Avenue at Southbound TH 100 Ramp Terminal				
	There were no crashes at other intersections associated with interchange in 3-year period.				

B. Project Description

Proposed Work	Convert Existing Interchange to Diverging Diamond Interchange		
Project Cost*	$6,450,877	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.5%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.448	**Fatal (K) Crashes**	**Reference**	CMF Clearinghouse (#10765)
0.448	**Serious Injury (A) Crashes**		
0.448	**Moderate Injury (B) Crashes**	**Crash Type**	Angle/Left Turn
0.448	**Possible Injury (C) Crashes**		
0.448	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

0.860	**Fatal (K) Crashes**	**Reference**	CMF Clearinghouse (#10761)
0.860	**Serious Injury (A) Crashes**		
0.860	**Moderate Injury (B) Crashes**	**Crash Type**	All Other Crashes
0.860	**Possible Injury (C) Crashes**		
0.860	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT2			

Crash Severity	Angle/Left Turn	All Other Crashes
K crashes		
A crashes		
B crashes		
C crashes		
PDO crashes	7	6

F. Benefit-Cost Calculation

$400,079	**Benefit (present value)**
$6,450,877	**Cost**

B/C Ratio = 0.07

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	$1,440,000
A crashes	$720,000
B crashes	$220,000
C crashes	$120,000
PDO crashes	$13,000

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

Real Discount Rate:	0.7%	**Revised**
Traffic Growth Rate:	0.5%	**Revised**
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	0.00	0.00	$0
C crashes	0.00	0.00	$0
PDO crashes	4.70	1.57	$20,384
			$20,384

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$20,384	$20,384
2027	$20,486	$20,344
2028	$20,588	$20,303
2029	$20,691	$20,263
2030	$20,795	$20,223
2031	$20,899	$20,182
2032	$21,003	$20,142
2033	$21,108	$20,102
2034	$21,214	$20,062
2035	$21,320	$20,023
2036	$21,426	$19,983
2037	$21,534	$19,943
2038	$21,641	$19,903
2039	$21,749	$19,864
2040	$21,858	$19,824
2041	$21,967	$19,785
2042	$22,077	$19,746
2043	$22,188	$19,707
2044	$22,299	$19,667
2045	$22,410	$19,628
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 = $400,079

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

CMF / CRF Details

CMF ID: 10765

Convert diamond interchange to Diverging Diamond Interchange (DDI) or Double Crossover Diamond (DCD)

Description: Convert a diamond interchange to a Diverging Diamond Interchange (DDI) or a Double Crossover Diamond (DCD)

Prior Condition: ***No Prior Condition(s)***

Category: Interchange design

Study: ***Systematic Safety Evaluation of Diverging Diamond Interchanges Based on Nationwide Implementation Data*****, Abdelrahman et al., 2021**

Star Quality Rating:	★★★★☆

Crash Modification Factor (CMF)	
Value:	0.448
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	55.2 *(This value indicates a **decrease** in crashes)*

Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	Angle,Left turn
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	Divided by Median
Speed Limit:	
Area Type:	Urban and suburban
Traffic Volume:	1295 to 76100 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

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

Development Details

Date Range of Data Used:	
Municipality:	

State:	CO, FL, GA, ID, IN, IA, KS, KY, MI, MN, MO, NV, NM, NY, NC, OH, OR, PA, TN, TX, UT, VA, WI, WY
Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jul-01-2021
Comments:	The AADT values mentioned are for the Arterials.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 10761

Convert diamond interchange to Diverging Diamond Interchange (DDI) or Double Crossover Diamond (DCD)

Description: Convert a diamond interchange to a Diverging Diamond Interchange (DDI) or a Double Crossover Diamond (DCD)

Prior Condition: ***No Prior Condition(s)***

Category: Interchange design

Study: ***Systematic Safety Evaluation of Diverging Diamond Interchanges Based on Nationwide Implementation Data*****, Abdelrahman et al., 2021**

Star Quality Rating:	★★★★☆

Crash Modification Factor (CMF)	
Value:	0.858
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	14.2 *(This value indicates a **decrease** in crashes)*

Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	Divided by Median
Speed Limit:	
Area Type:	Urban and suburban
Traffic Volume:	1295 to 76100 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

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

Development Details

Date Range of Data Used:	
Municipality:	

State:	CO, FL, GA, ID, IN, IA, KS, KY, MI, MN, MO, NV, NM, NY, NC, OH, OR, PA, TN, TX, UT, VA, WI, WY
Country:	
Type of Methodology Used:	2
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jul-01-2021
Comments:	The AADT values mentioned are for the Arterials.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

Crash Case Listing

Vernon/TH 100 Interchange

Report Version 1.0
February 2020

Route System	Route Number	Measure	Co	City	Incident Number	Date	Time	Day of Week	Basic Type	Num Veh	Sev
04-CSAH	158	2.711	27	Edina	00928858	07/18/21	1653	SUN	Angle	2	N
04-CSAH	158	2.712	27	Edina	00909719	06/04/21	0651	FRI	Angle	2	N
04-CSAH	158	2.715	27	Edina	00912520	06/16/21	1310	WED	Angle	2	N
04-CSAH	158	2.717	27	Edina	00745780	09/08/19	1011	SUN	Angle	2	N
04-CSAH	158	2.722	27	Edina	00896750	03/18/21	1758	THU	Angle	2	N
04-CSAH	158	2.755	27	Edina	00936165	08/24/21	0902	TUE	SSS	2	N
10-MUN	767	0.051	27	Edina	00935659	08/21/21	1538	SAT	Angle	2	
22-RAMP	558	0.015	27	Edina	00728953	06/11/19	0911	TUE	Rear End	2	N
22-RAMP	2433	0.002	27	Edina	00807941	03/31/20	1446	TUE	Rear End	3	C
22-RAMP	2433	0.029	27	Edina	00820258	07/16/20	1632	THU	Rear End	2	N
22-RAMP	3771	0.021	27	Edina	00935628	08/21/21	1443	SAT	SSS	2	
22-RAMP	3771	0.035	27	Edina	00814920	06/11/20	0929	THU	Rear End	2	N
22-RAMP	4250	0000	27	Edina	00900263	04/08/21	1139	THU	Angle	2	N

Selection Filter:

WORK AREA: State - FILTER: Year('2019','2020','2021') - SPATIAL FILTER APPLIED

Analyst:

Justin Anibas

Notes:

4:22:49 PM

3/2/2022

shotchkin

X:\AE\E\EDINA\165901\4-prelim-dsgn-rpts\43-prelim-dsgn\CP165901_fig.dgndefault

LEGEND

- PROPOSED ROADWAY
- PROPOSED BRIDGE REHAB
- PROPOSED SHOULDER
- PROPOSED RAISED MEDIAN, CURB
- PROPOSED MEDIAN BARRIER
- PROPOSED WALKS, TRAILS
- ROADWAY REMOVAL
- EXISTING ROW

MINNESOTA 100

PROPOSED NOISE WALL

CONC. MEDIAN BARRIER

W. SUNNYSLOPE RD.

INTERLACHEN BLVD.

VERNON AVE. S.

ARCADIA AVE.

W. 50TH ST.

GRANGE RD.

EDEN AVE.

10' WALK
13'
13'
VAR. MEDIAN
13'
11'
13'
10' WALK
13'
10' WALK
14'
12'
14'
15'
13'
12' WALK
13'
15'
8' WALK
13'
13'
VAR. MEDIAN
13'
13'
10' WALK
14'
12'
14'

60 0 150
scale feet

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

165901

DATE:
3/2/2022

TH 100 /VERNON AVE.
DIVERGING DIAMOND INTERCHANGE

FIGURE
No. 1

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

April 11, 2022

Chad Millner, P.E.,
Director of Engineering
City of Edina

Re: MnDOT Letter for Edina's Metropolitan Council/Transportation Advisory Board 2022 Regional Solicitation Funding Request for TH100/Vernon Avenue/50th Street Diverging Diamond Interchange

Dear Chad,

This letter documents MnDOT Metro District's recognition for Edina to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2022 Regional Solicitation for TH100/ Vernon Avenue/50th Street Diverging Diamond Interchange.

As proposed, this project impacts MnDOT right-of-way on TH 100. As the agency with jurisdiction over TH 100, MnDOT will allow Brooklyn Park to seek improvements proposed in the application. Details of any future maintenance agreement with the City will need to be determined during the project development to define how the improvements will be maintained for the project's useful life if the project receives funding.

There is no funding from MnDOT currently planned or programmed for this improvement. If your project receives funding, continue to work with MnDOT Area staff to coordinate needs and opportunities for cooperation.

MnDOT Metro District looks forward to continued cooperation with Edina 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 West Area Manager April Crockett at April.Crockett @state.mn.us or 651-234-4347.

Sincerely,

Michael Barnes

Digitally signed by Michael Barnes
Date: 2022.04.11 08:17:38 -05'00'

Michael Barnes, PE
Metro District Engineer

CC: April Crockett, Metro District Area Manager; Dan Erickson, Metro State Aid Engineer; Molly McCartney, Metro Program Director

TH 100 and CSAH 158 (Vernon Ave) Interchange

Roadway Modernization

City of Edina
Estimated Project Total: $5.3 Million
Requested Amount: $4.2 Million

Project Name: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Interchange

Project Location: City of Edina, Hennepin County, MN

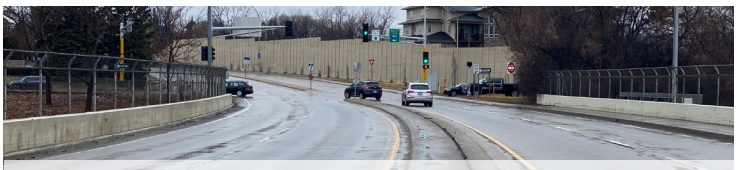
Applicant: City of Edina

Funding Category: Roadway Modernization

Project Description:

The project will reconstruct a 0.2-mile section of CSAH 158 from Grange Road to Arcadia Avenue. The existing bridge over TH 100 will be reconfigured and the on- and off-ramps will be reconstructed to create a Diverging Diamond Interchange (DDI). DDIs are similar to standard diamond interchanges with the exception that traffic crosses over at either end of the bridge. This design works extremely well for interchanges with high turning volumes as the left turn movements operate similar to free rights.

Pedestrian access over the bridge will be provided by a wide, barrier-protected median that connects to new sidewalks on either side of the bridge. This project will improve safety and mobility for all users, eliminate redundant access ramps and will not require replacing the existing bridge.

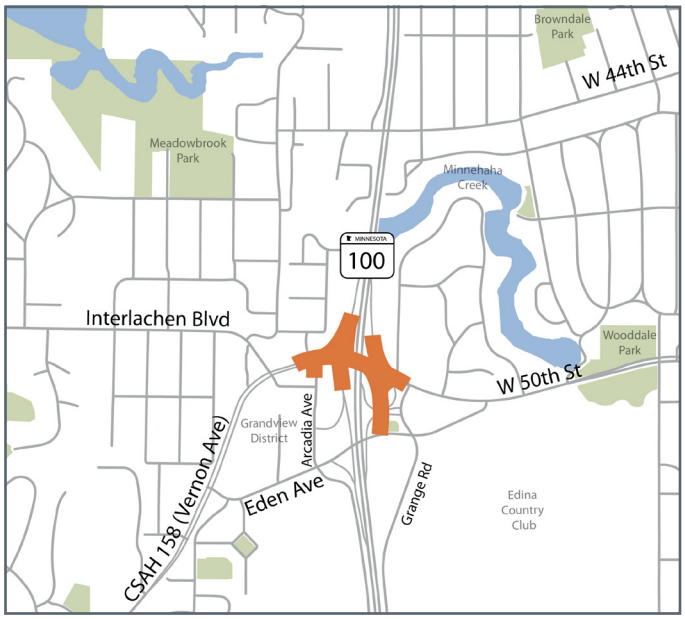


Existing CSAH 158 (Vernon Ave) bridge over TH 100 is a 4-lane divided roadway with sidewalk on the north side.

Existing Conditions:

CSAH 158 (Vernon Avenue) is functionally classified as an A-Minor Arterial Reliever. The CSAH 158 Bridge over TH 100 carries a divided four-lane roadway with a sidewalk on the north side meant to serve pedestrians and cyclists.

Over 22,000 vehicles travel over this bridge daily, which is projected to increase to 24,000 vehicles per day by 2040. The size of the sidewalk and the lack of separation from heavy traffic make this bridge uncomfortable for many pedestrians, creating a significant barrier within the Grandview commercial district. Additionally, the interchange with TH 100 is a complicated and redundant system of six unique access ramps that connect to four different streets within the district.



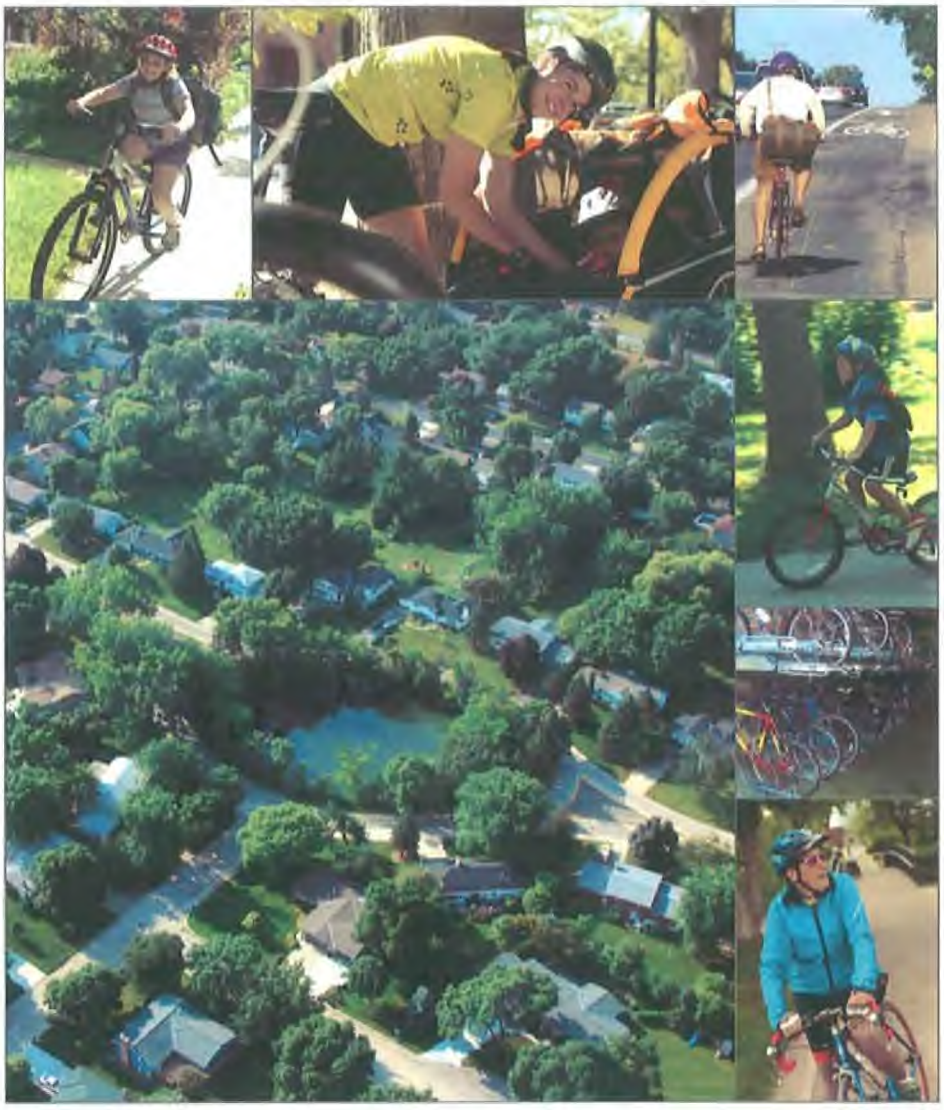
TH 100 / CSAH 158 (Vernon Ave)
Interchange Project Area
Edina, MN

Issues to be Addressed:

- Inadequate bicycle/pedestrian options
- Unsafe crossing locations
- Accessibility concerns
- Roadway safety and capacity
- Safety for heavy left-turn volumes onto TH 100
- Redundant access ramps

Project Benefits:

- Rehabilitate deficient roadway pavement and drainage infrastructure
- New separated shared-use paths
- Consolidate access ramps from 6 to 2
- Controlled crossing locations at signalized ramps
- Improved connectivity between residential and commercial areas in district
- Traffic calming due to proposed geometric changes
- Lighting enhancements



THE CITY OF EDINA COMPREHENSIVE BICYCLE TRANSPORTATION PLAN

SEPTEMBER 19 2007

BIKE EDINA
BIKEEDINA.ORG

CITY OF EDINA, MINNESOTA
INCORPORATED 1888

a people-centered,
asset-based approach to
urban planning, policy and design
community design group

1.1 Vision and purpose

Improving the conditions for bicycling in Edina has been an important priority for Edina residents, community leaders and elected officials for several years. This Comprehensive Bicycle Transportation Plan builds on the work already completed by the Bike Edina Task Force (BETF), City of Edina staff, and Edina citizens towards the creation of a more bicycle-friendly Edina.

Vision

"The City of Edina will be a progressive bicycle-friendly community where citizens can easily integrate cycling into their daily lives."

Purpose of this Plan

The purpose of this document is to serve as a tool to guide the efforts of Edina citizens, elected officials and City of Edina staff as they work towards increasing the city's bicycle orientation.

It provides short, medium and long-term recommendations for improving the City's bicycle transportation network with the goal of making it safer and more convenient for people of all ages and skill levels to choose cycling as a preferred mode of transportation for taking care of their daily needs.

detail on present conditions in order to clarify areas that need to be addressed and to help set up benchmarks for improvement.

Surface Streets

No cycling facilities are presently provided along Edina's street network. Nevertheless, a number of streets are already utilized by cyclists for connection and movement to destinations within and outside of Edina. Among those streets which appear to be favored by Edina cyclists at present are:

- Wooddale Avenue
- 58th Street
- 44th Street
- 70th Street
- Vernon Avenue
- Tracy Avenue
- Gleason Road
- Valley View Road
- Benton Avenue
- Interlachen Boulevard
- Olinger Boulevard

In general, lower speed limits create more comfortable conditions for cyclists. An automobile speed limit of 25 miles per hour has been found to provide for safe and efficient use of surface streets by pedestrians, cyclists and motorists. Additionally, lower speed limits significantly decrease the severity and risk of injury to pedestrians, cyclists and motorists as a result of automobile crashes.

The majority of surface streets in Edina have posted speed limits of 30 miles per hour, which, though not ideal, provides usable conditions for cycling if actual travel speeds stay within those limits.

However, several important streets and potential bicycling routes in Edina have significantly higher speed limits. Notable exceptions to the 30 mph limits are portions of Vernon Avenue (with speed limits of 40 mph in a segment that includes Olinger Boulevard and Tracy Avenue), France Avenue (40 mph between 66th Street and the southern city limit; 35 mph between 54th Street and 6th Street), 66th Street (35 mph between Normandale Road and the eastern city limit, including the segment serving the Edina Aquatic Center and Rosland Park) and York Avenue (between 66th Street and the southern city limits).

A cyclist heading south on Valley View Road just past Highway 62 towards Southdale Mall.

Did you know?

A recent Twin Cities survey of potential bicycle commuters found that 79% of respondents said that on-street bike lanes would be an important factor in deciding whether or not to use a bicycle as transportation.

Source: Minnesota Center for Survey Research, University of Minnesota Center for Transportation Studies, 1999.

Speed limits over Edina's surface streets: green is 30 mph, purple is 35 mph, and red is 40 mph. Highways are shown in grey.

Current bicycle use

Observation indicates that a significant number of people ride bicycles in Edina. There are several streets that are commonly mentioned as preferred, informal bike routes for travel through the city. However, as noted in Chapter 1.4 (Demographics and population characteristics) there is a general lack of actual counts and other data about the number of people using bicycles for transportation in Edina (as is the case in most other communities in our state).

An Edina cyclist riding south on Valley View Road, towards Southdale Mall.

Fortunately, there are a couple of resources that may help in providing a baseline for understanding current use and for providing benchmarks for improvement.

The first is the Edina Parks and Recreation system survey conducted in Fall 2006 and which showed that improvement of Edina's cycling infrastructure is a priority for a significant majority of Edina households. This survey is explored in more detail in Chapter 1.6 (Need for improvement).

The second resource is the recently conducted bicycle and pedestrian counts taken in Edina on two days during mid September of 2007. This count activity, performed for the first time in Edina in 2007, is part of Transit for Livable Communities' (TLC) metropolitan bike and walk traffic count efforts, which were conducted simultaneously throughout the region and which aim to establish benchmarks for use of the region's bikeways by bicycle commuters.

Two locations were chosen, and activity was measured for two days during the commuting time range of 4:00 to 6:00 p.m. In that time period an average of 21 bikers and 35 pedestrians were counted at 44th Street and Brookside Avenue while 17 bikers and 14 pedestrians were counted at 70th Street and Cahill Road.

Members of the Bike Edina Task Force received training from TLC, conducted the counts and summarized the data. It is recommended that this activity be continued into the future and expanded to additional locations to help provide a clearer picture of bicycle use and trends in Edina.

Some locations in Edina are designated for cycling even though they present hazardous conditions. For example, the western side of the Centennial Lakes trail mixes pedestrians and cyclists on a narrow path, does not provide adequate sight distance, and is in general not suitable for biking. Developing facilities that provide separate, sufficient and safe space for cyclists and pedestrians is recommended instead.

1.6 Need for improvement

There are many sound reasons to make the necessary investments to improve Edina's bicycle transportation infrastructure. An accessible, safe and useful bicycle transportation network is consistent with and in fact furthers the City's long-term goals and objectives, as articulated in the City's Vision Statement, which is included in Edina's 2008 Comprehensive Plan Update:

On Eden Avenue.

Edina will be the preeminent place for living, learning, raising families and doing business distinguished by:

- *A dynamic and sustainable community*
- *A livable environment*
- *Effective and valued City services*
- *A sound public infrastructure*
- *A balance of uses*
- *Innovation*

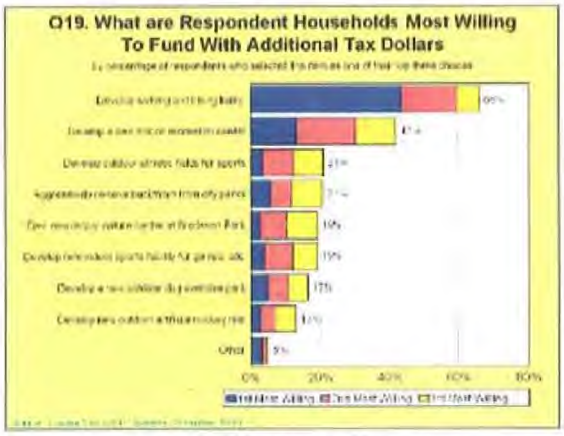
In addition, the improvements this Plan recommends help address the following needs and conditions:

To respond to citizen and community interest

The citizens of Edina have consistently expressed a desire for improvement of bicycling facilities in their city.

Most recently, the City hired a consultant to survey Edina households about Parks and Recreation system services and priorities during the fall of 2006. The survey, which received almost a thousand responses (and is statistically valid for the population of Edina as a whole) found:

- 86% of respondents had a household need for walking and biking trails.
- 64% of respondents said walking and biking trails were among the top four most important facilities; 32% ranked walking and biking trails as their first choice, the highest percentage for any facility.
- 84% would use walking and biking trails for exercise and fitness; 84% for enjoying the outdoors; 25% for transportation.
- 89% of respondents were supportive of the City developing walking and biking trails; 65% were very supportive.



From the Parks and Recreation survey.

2.1 Route selection and recommendation principles

Several project principles guide the selection of routes presented in this Plan. These principles were derived from guidance provided by Bike Edina Task Force (BETF), City of Edina staff, and members of the public.

An Edina family cycling on 66th Street near Southdale Mall.

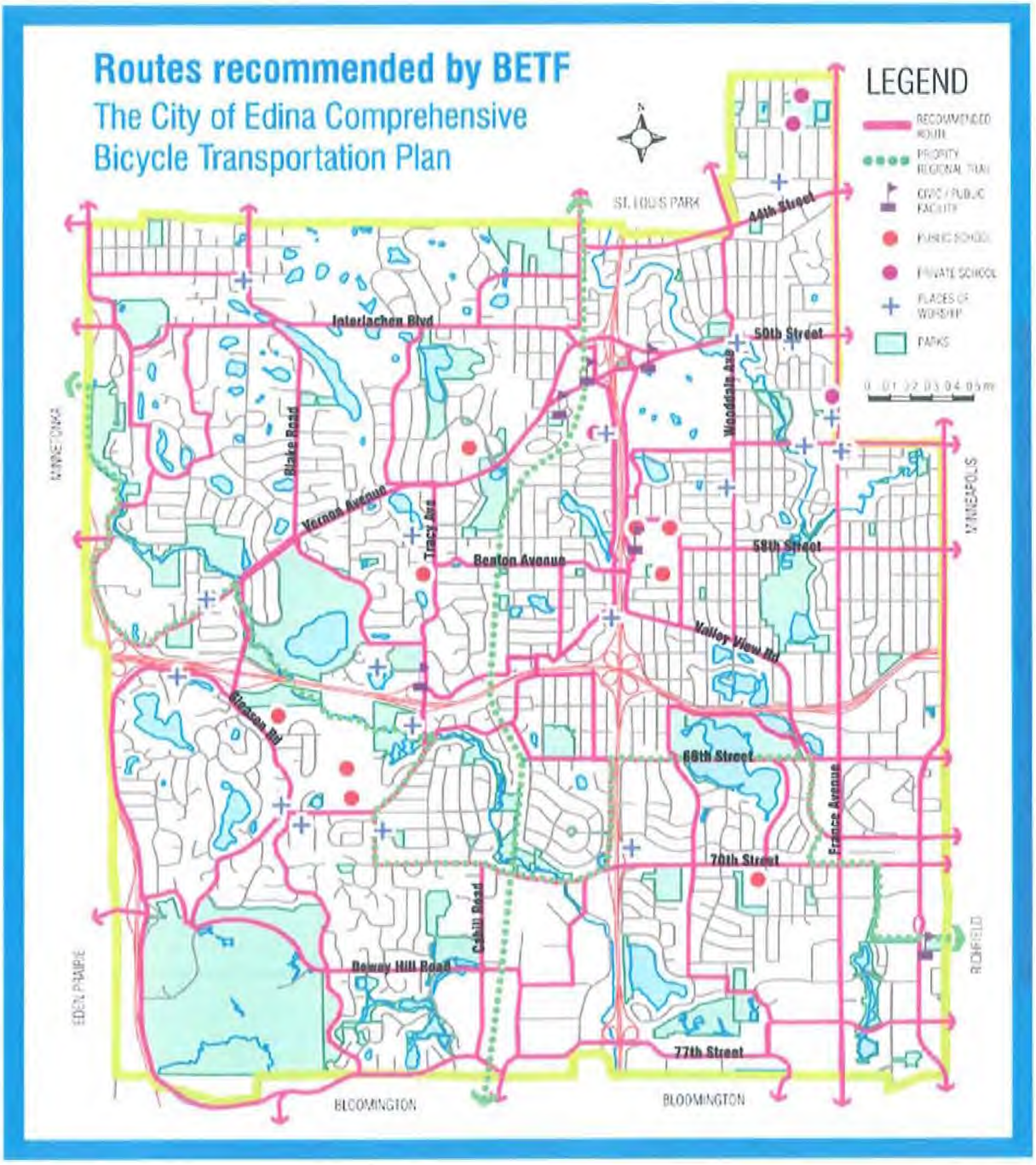
Goals and Guiding Principles

1. Increase safety and convenience for Edina cyclists
2. Increase opportunities for bicycling as a transportation option
3. Create a network of routes that is within reasonable distance of the greatest number of Edina residents and workers
4. Provide safe and convenient bicycle access to major destinations within Edina, including commercial and entertainment areas, employment centers, and civic institutions; provide safe and convenient connections between Edina quadrants
5. Provide safe and convenient connections to adjacent communities and other locations outside of Edina
6. Provide connection to existing and proposed regional commuter and recreational bicycle trails
7. Provide safe and convenient routes to schools, recreation centers, and other institutions serving the needs of young people in Edina
8. Provide safe and convenient routes to destinations serving the needs of senior adults in Edina
9. Recommend practical, cost-efficient improvements that increase the bicycle-friendliness of Edina's existing surface street network
10. Improve the quality and quantity of end of trip facilities in Edina

FOUNDATION

The routes recommended in this Plan are based on the routes identified, selected and recommended by the Bike Edina Task Force (BETF) as part of the work they completed in Fall 2006. All of the routes selected and recommended by BETF are carried forward and identified for designation as recommended routes (with some additions, route hierarchy and implementation recommendations) by this Plan as included in Chapter 2.2 (Recommended Routes).

A map of the original routes developed by BETF follows below:



Principal Destinations

The Bike Edina Task Force identified the following as priority destinations and objectives for Edina cyclists and for this Plan:

- Connection to the Cedar Lake LRT Regional Trail
- Connection to shopping, entertainment and commercial areas in Edina, including Southdale, 50th and France, 50th and Vernon, and 70th and Cahill
- Provision of safe, inviting and comfortable routes to schools in Edina
- Provision of safe, inviting and comfortable routes to parks, civic and recreation centers, including the Edina Aquatic Center and other destinations sought by children and families

The Cedar Lake LRT Regional Trail, adjacent to Edina's northwest border, is one of the top connections desired by Edina cyclists.

The Bike Edina Task Force recommendations inform and are carried forward by this Plan. In addition, they are supplemented by recommendations to connect employment centers, locations of high residential density, potential growth and development areas (as identified by the City of Edina's 2008 Comprehensive Plan), and to address the mobility needs of Edina seniors.

Methodology

Route segments initially identified through BETF's work and by this Plan were evaluated using several criteria, which depended on a number of inter-related factors, responded to identified needs, and followed accepted bicycle transportation, route network and human factors design practice.

The goal was to identify a network of Primary routes that would help connect major destinations and aid movement through Edina while serving as a backbone for a wider network of Secondary routes that extend the network's usability and access, and improve safety and convenience for bicycle travel over all of Edina's surface streets.

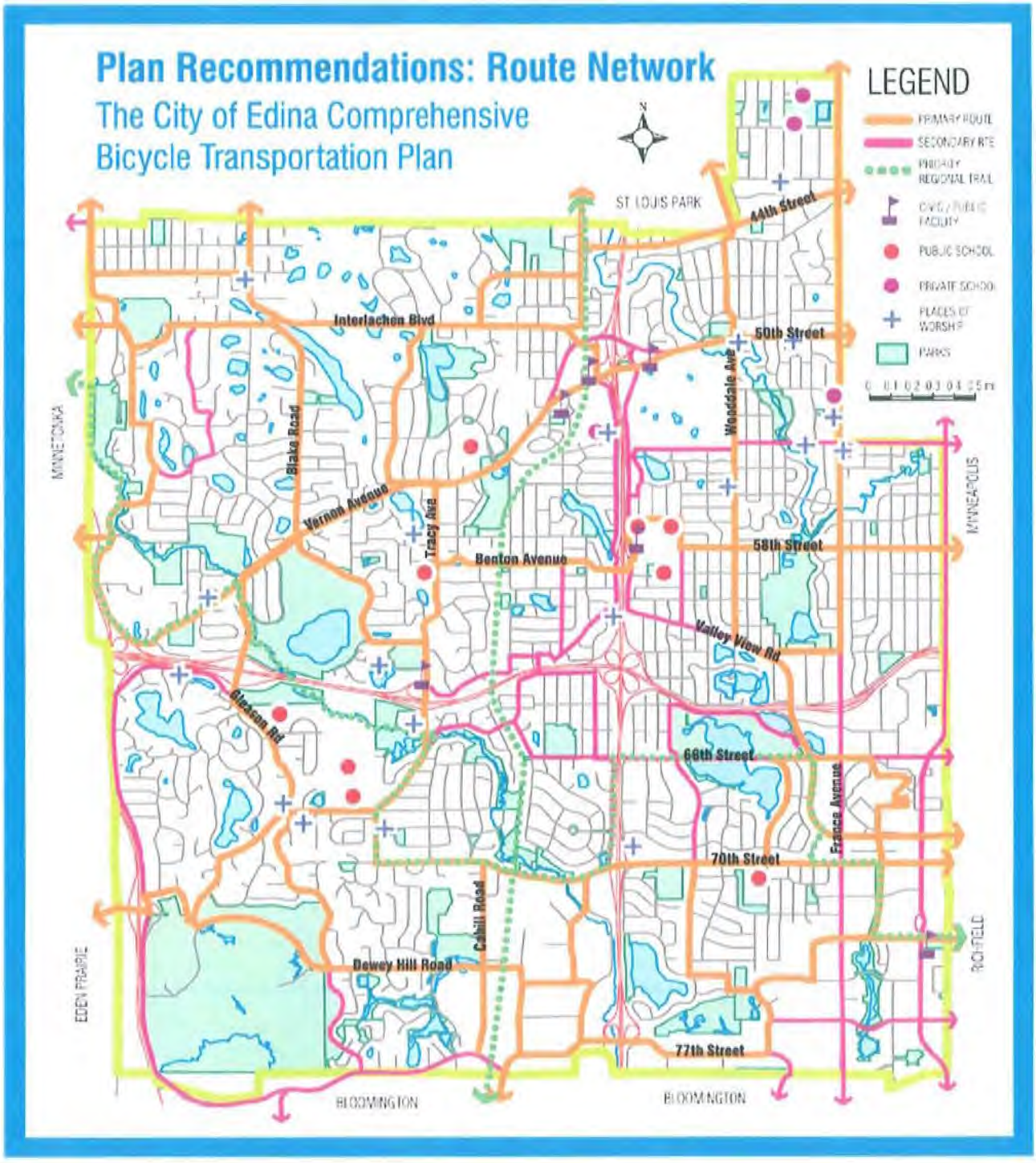
Balancing Constraints

Among the variables considered in this iterative process are the following:

- The need to maximize the number of potential destinations while minimizing the number of recommended Primary routes in order to reduce network complexity
- The need to create a network that could be easily communicated and understood
- The desire to make use of existing bicycle transportation

Recommended Route Network

A map showing the recommended network of routes for Edina's bicycle transportation network is provided below. Routes are classified as part of a Primary or Secondary network; as discussed earlier, Primary routes are those that more directly provide connections to destinations within and outside Edina. Regional routes (the Canadian Pacific Regional Trail and the Nine Mile Creek Regional Trail) are included as a high priority component of this Plan.



Edina Comprehensive Plan

Update 2008

Submittal approved by the City Council on December 2, 2008

City of Edina
4801 West 50th Street
Edina, Minnesota 55424-1394

Contact:
Heather Worthington, Assistant City Manager
952-826-0415
hworthington@ci.edina.mn.us
www.cityofedina.com

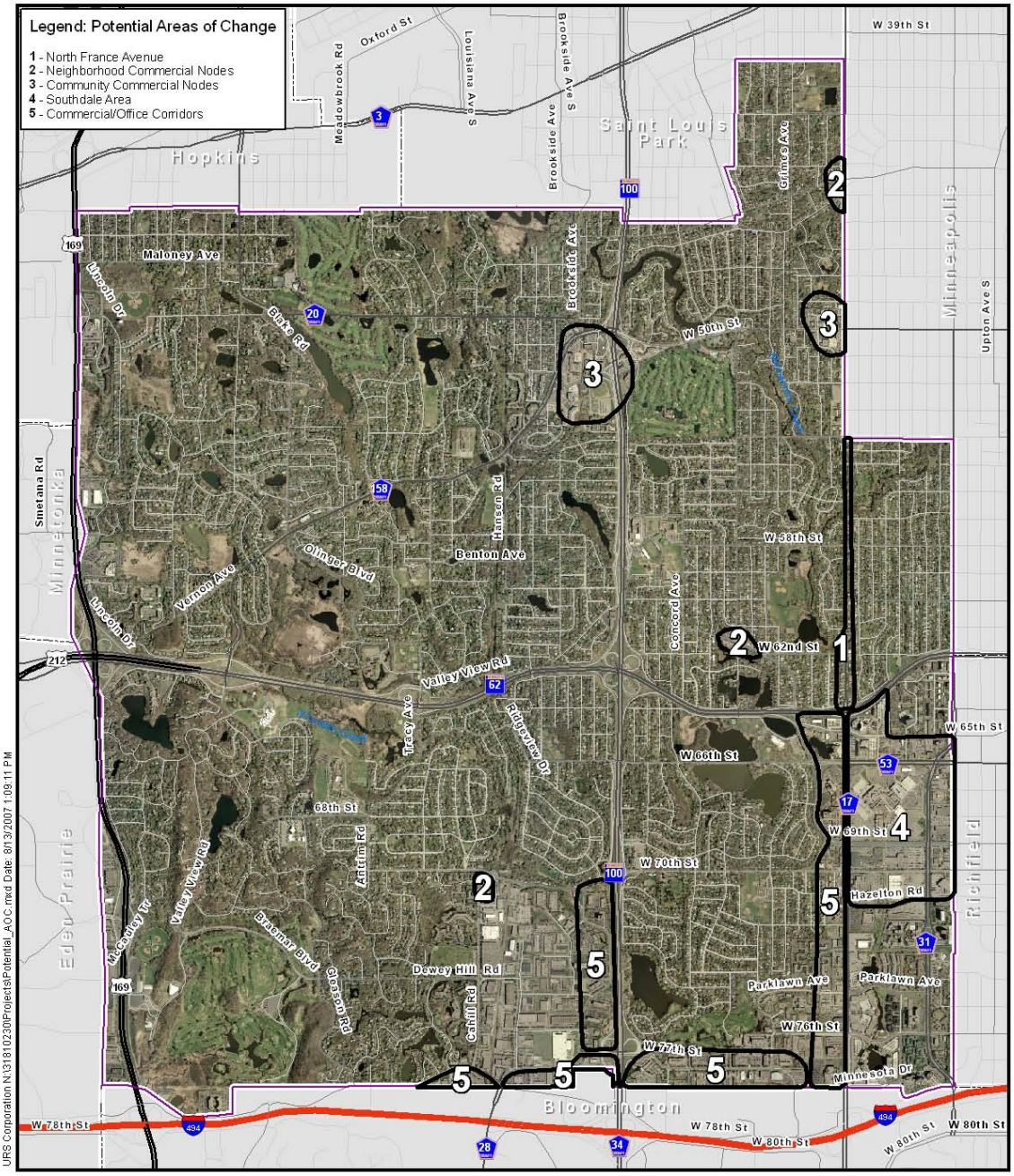
The **Grandview Heights** district is in the process of evolving from a somewhat scattered auto-oriented commercial/industrial district to a more integrated mix of uses, with the addition of offices, multifamily housing and a combined library/senior center around a common green. Street patterns are disconnected, making wayfinding difficult.

The **Greater Southdale Area** is a regional retail and activity center that consists of several sub-areas. Originally centered upon the Southdale Shopping Center, it now encompasses substantial health care, office, entertainment and residential components. Its size, diversity and regional role make it unique within the City. It is characterized at present by a wide variety of low-rise to high-rise single-use buildings oriented toward surface parking, with some structured parking. Smaller scale retail includes the Galleria and Yorktown Shopping Centers. The **Centennial Lakes** sub-area within this district is an innovative early example of a multi-use redevelopment that includes several hundred townhouse and multi-family housing units. **Yorktown and Centennial Lakes Parks** are linked by open space corridors and a chain of ponds. Open space is largely internal and not visible from the street. **Edinborough Park** is a multi-use indoor recreational facility located within a large mixed-use complex.

suitable areas to accommodate additional households and jobs that are anticipated, based on Metropolitan Council projections, to locate in the City by 2030. Because the City is fully developed, additional housing would have to occur through redevelopment. The areas listed here and shown in Figure 4.4, "Potential Areas of Change," represent less than 10 percent of the total acreage of the City.

1. **North France Avenue (West 54th Street South to TH 62):** This corridor includes many duplexes interspersed with small-lot single-family dwellings and small commercial nodes. It has the potential to accommodate some additional attached housing types, with careful attention to transitions, and some additional commercial opportunities near 54th Street.
2. **Neighborhood Commercial Nodes:** These include the Morningside commercial area, Valley View and Wooddale, and 70th and Cahill. The last two have greater potential for addition of new compatible uses.

3. **Community Commercial Nodes:** These include the 50th and France district and the Grandview Heights district, both of which have experienced redevelopment and are evolving toward mixed use, while continuing to function as commercial centers.
4. **Southdale Area:** This area is the northern portion of the study area of the "Greater Southdale Area Land Use and Transportation Study" received by City Council in February 2006 (the southern portion included in that study is the Centennial Lakes area). The Southdale area is the site of considerable development pressure. Design standards and equivalent zoning updates should be developed as discussed under the Community Design guidelines.
5. **Commercial/Office Corridors:** These areas include the commercial/office development along I-494 and locations on the edges of the Southdale and Cahill Industrial areas. Long-term transition is envisioned away from single-site commercial use toward a mix of predominantly office and residential uses. Additional site-specific studies may be necessary.



URS Corporation N:\31810230\Projects\Potential_AOC.mxd Date: 8/13/2007 1:09:11 PM

Figure 4.4

City of Edina
2008 Comprehensive Plan Update

Conceptual Land Use Framework: Potential Areas of Change

Date of Aerial Photography: August 2006

0 0.5 Miles

3. Land Use and Community Design

Chapter Highlights

- The land use vision for the City of Edina will guide the future distribution, mix, and intensity of uses to optimize the current and future vitality and livability of the community.
- The biggest land use changes in the city will be in targeted areas of change, including those identified through the small area planning processes. These places are potential opportunities for shifts in uses and intensities, supporting larger community goals.
- While much of the city's land area will not be targeted for change, it will not remain static or frozen in time. Continued investments in these areas are needed to maintain and update aging buildings and infrastructure, to meet the needs of the people and businesses that use them.
- Overall community character and livability are greatly valued in Edina. There will be a continual need to balance protecting what is valued and responding to needed and ongoing changes.
- Land use bears a close and vital relationship to public infrastructure, utilities, and services. The City will need to plan and invest responsibly in these systems – both to maintain existing facilities and to provide new ones in response to changing and expanding needs. This is addressed in more depth in other chapters.
- Sustainability is an important value throughout this plan. In terms of land use, it has implications from the small scale (e.g. how buildings are constructed and maintained) to citywide (e.g. responsible use of resources, preparing a community to respond to climate change). This is addressed in more depth in other chapters.

Definitions

Design Guidelines provide guidance for the character, scale, and built form of development.

Land Use is the purpose for which land cover is committed, such as residential, industrial, or open space.

Mixed Use is a land use category that includes two or more different land uses, arranged either horizontally on the same site, or vertically in the same building.

Zoning is a technique used in land use planning to divide an area into a series of zones with defined characteristics, which are regulated through city ordinance. Under Minnesota state statute, zoning must be consistent with a city's adopted comprehensive plan.

Introduction

The land use element of the comprehensive plan provides not only guidance for land use and development within the city, but some of the organizing principles for the city itself. The planned and orderly development of land reflects community values and priorities, in terms of the opportunities it creates for where people can live, work, and congregate within city limits. It establishes the planned scale and intensity of neighborhoods and reflects the ability of the community overall to accommodate growth and change. It also relates to existing and planned infrastructure – including roadways, trails, transit systems, water and wastewater, parks, and others.

Since a plan to accommodate growth is one of the central functions of this comprehensive plan, this land use element will focus primarily on how this can be accomplished in a way that is sustainable and consistent with overall community goals.

Edina 2040 Comprehensive Plan
Edina, Minnesota

Existing Land Use
February 2020

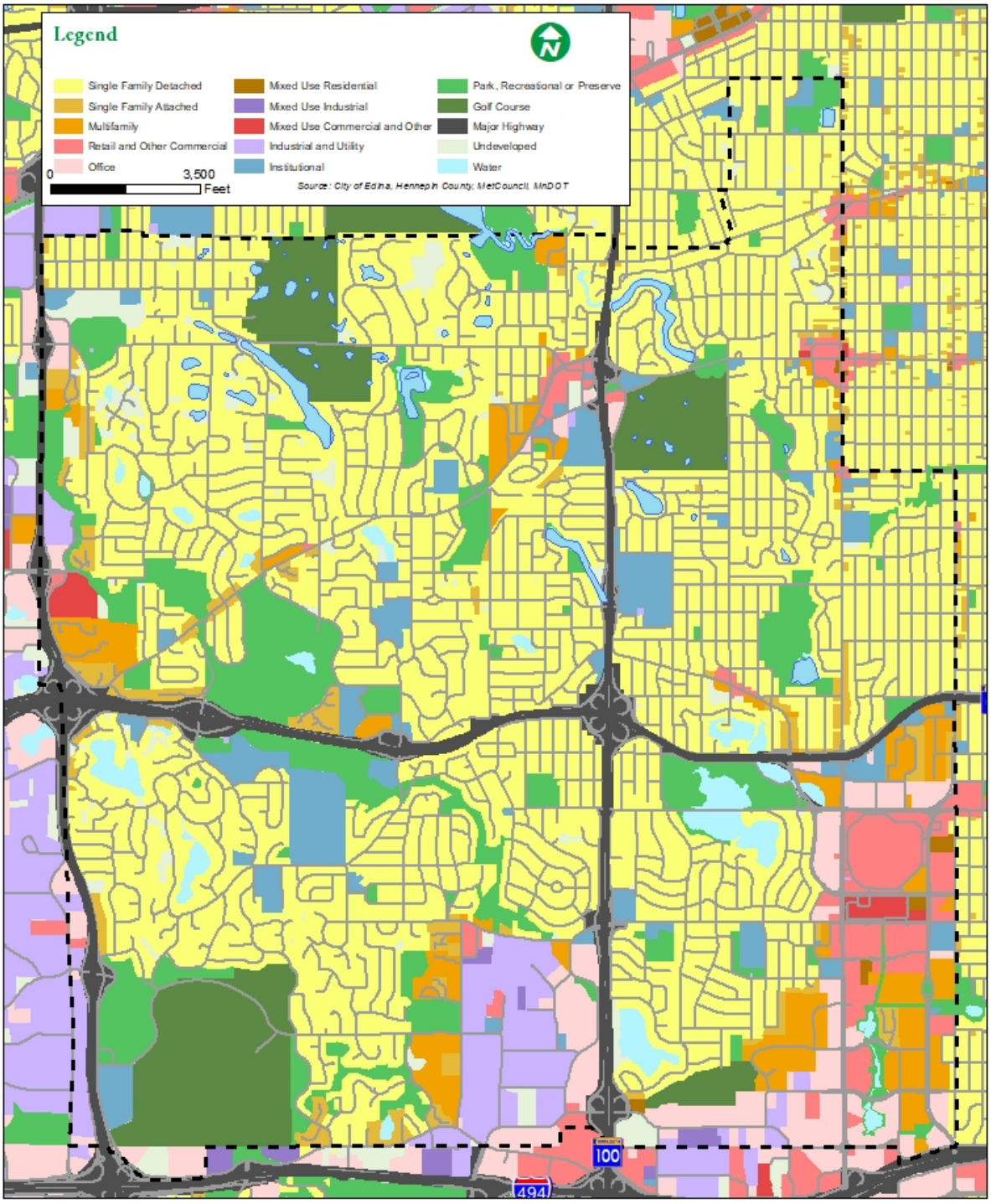


Figure 3.3: Existing Land Use

Changes Since 2008 Plan

Since the City of Edina is fully developed, changes in existing land use have been incremental based on redevelopment, with a shift towards more multifamily and mixed use within potential areas of change, as shown on **Figure 3.11**. In the interim since the adoption of the previous comprehensive plan in 2008, there also have been changes to the land use policy and regulatory guidance for the city. These changes include:

- Comprehensive plan amendments to add more detailed guidance for land use density by future land use category.
- Comprehensive plan amendments to provide development guidelines for planned unit development or other larger projects.
- Zoning changes at the individual site level to support new development projects, particularly mixed use.

Existing Land Use Categories

Figure 3.3 illustrates the pattern of existing land use in Edina as of 2016. The categories on the map are described as follows:

Single-Family Residential

Single-Family Detached. Residential neighborhoods are the most extensive land use within the city in terms of total land area, of which single family detached housing is the largest component. Neighborhood character varies based on era of construction, scale of development, and landscape influences. Although there is significant variation, the most common residential type consists of post-WWII single-family homes on wooded lots along curvilinear streets.

Multifamily Residential

Single-Family Attached. This land use consists of residential units with common walls, where each unit has direct exterior access. In Edina the most common buildings of this type are townhouses and duplexes (two-family dwellings). Townhouses tend to be clustered close to highway or major road corridors, while duplexes are often found in narrow strips along major thoroughfares such as Vernon and France Avenues, and serve as a buffer for adjacent single-family neighborhood detached housing.

Multifamily. This land use is defined by the multiple-unit building type where each individual unit does not have direct ground floor access to the exterior. Multifamily developments are concentrated primarily along the main traffic arteries and are generally located toward the edges of the city, often in proximity to retail business establishments. Concentrations of multifamily developments are found along York Avenue, France Avenue, Vernon Avenue, Lincoln Drive, and Cahill Road.

Commercial

Retail and Other Commercial. An important part of Edina's identity is its status as a regional commercial and employment center. The Edina marketplace is dominated by high-end retail, medical, real estate, and banking services, making it a unique destination within the metro area. The city's demographics, in terms of incomes, match this business market. Retail areas can be defined based on their market positions: regional, community, and neighborhood. Edina's regional retail district is the Greater Southdale area. Community-level districts include 50th& France and Grandview, although they contain some regional destinations Neighborhood shopping districts, including the commercial nodes at Valley View and Wooddale and West 70th and Cahill, mainly serve surrounding neighborhoods with convenience shopping and services. Several other neighborhoods have small commercial nodes providing convenience goods and services. The larger concentrations of this land use are generally located toward the edges of the city, rather than in the center.

Potential Change Areas

The Comprehensive Plan functions as a long-range tool that anticipates where growth in populations, households, and jobs will be incorporated in the city.

As a fully developed city, it is expected that most of the land in Edina will maintain its current land use, scale, and intensity. Where there are single-family home neighborhoods, they will remain single family home neighborhoods. Greater density may occur in areas other than single-family neighborhoods. Appropriate transitions will need to continue to be implemented for development in areas that abut neighborhoods with single-family homes.

No area of the city is expected to be completely static. Due to the city's aging building stock and changing needs of residents and businesses, continued investments will be required for rehabilitation, expansion, and replacement of existing structures. The numbers of residents in single-family neighborhoods and employees in commercial locations are expected to remain approximately the same.

There are areas of the city that have some capacity to accommodate new growth in the form of housing units and job-generating uses. These are places where infrastructure capacity to support new growth is already relatively robust. The Greater Southdale District is the largest of these potential areas and will be expected to accommodate a sizeable percentage of citywide growth if that growth becomes reality.

The City of Edina 2008 comprehensive plan identified "potential areas of change" as shown on **Figure 3.10**. These were places where change was most likely to occur. A major recommendation following up on this designation was to complete small area plans for "specific neighborhoods, districts, or potential areas of change in the community" to provide more specific guidance for these areas.

Working with community-based stakeholder groups and through extensive public engagement, the City has undertaken and completed plans for the following areas. The study areas are shown on **Figure 3.11**, with the boundaries that were established for those respective plans.

- GrandView Development Framework (2012)
- Small Area Plan for the Wooddale-Valley View Neighborhood Node (2015)
- Greater Southdale District Plan (2018)
- Small Area Plan for the City of Edina's 44th & France Neighborhood Node (2018)
- Small Area Plan for the City of Edina's 70th & Cahill Neighborhood Node (2018)
- Small Area Plan for the City of Edina's 50th & France District (2019)

These City Council adopted small area plans are incorporated into the comprehensive plan by reference. Recommendations from the plans for land use guidance and other elements has been incorporated onto the future land use map and throughout the comprehensive plan.

The Edina Big Ideas process identified three potential small areas for future consideration, including Lincoln/169/Eden Prairie, expanded 70th & Cahill, and Pentagon Park. The 2008 plan also showed a portion of North France Avenue, which may be potentially impacted by the future E Line Rapid Bus project. The City will continue to monitor these areas for growth potential. There may also be additional studies in the future.

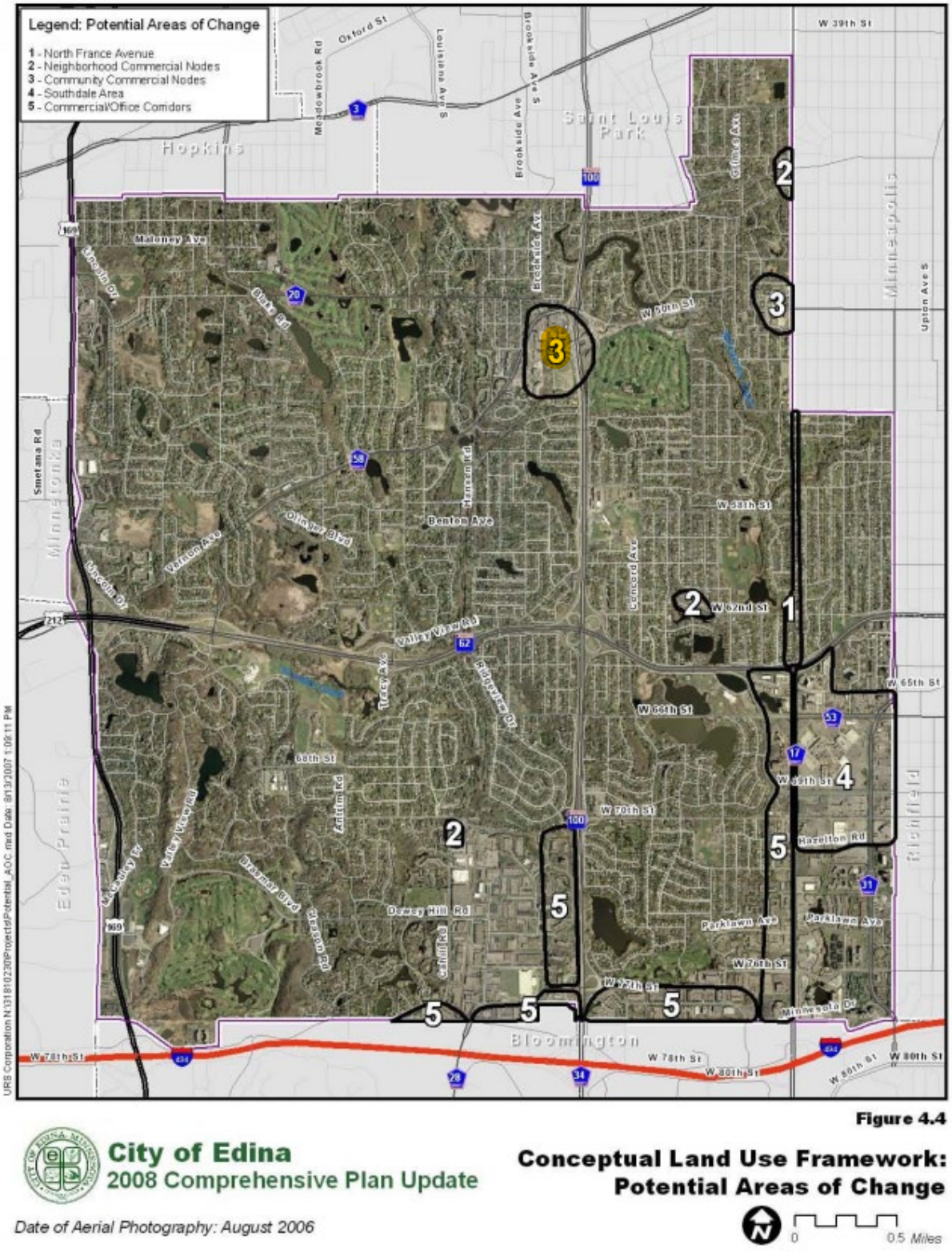


Figure 3.10: Potential Areas of Change from 2008 Plan

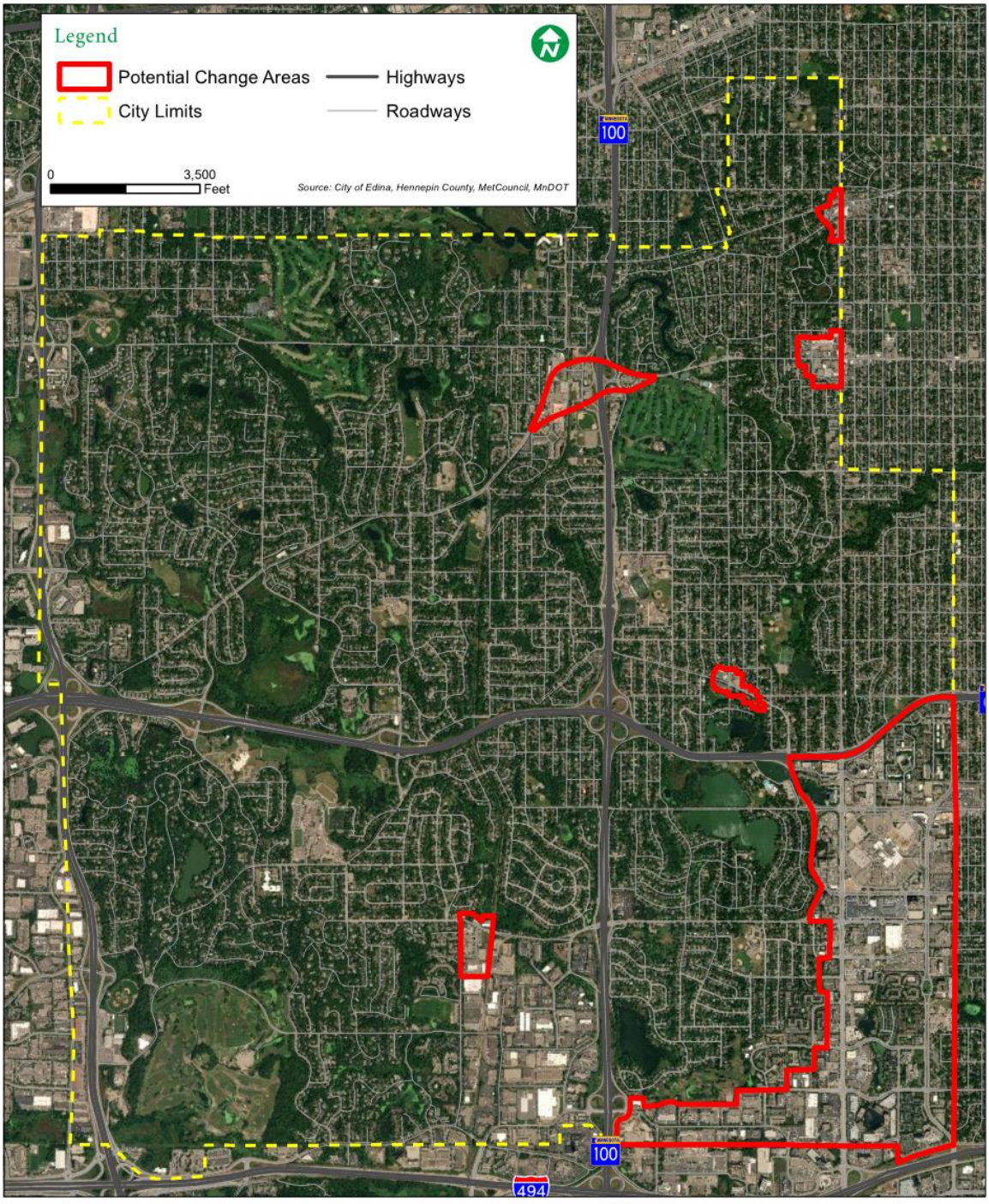


Figure 3.11: Potential Areas of Change for 2018 Plan

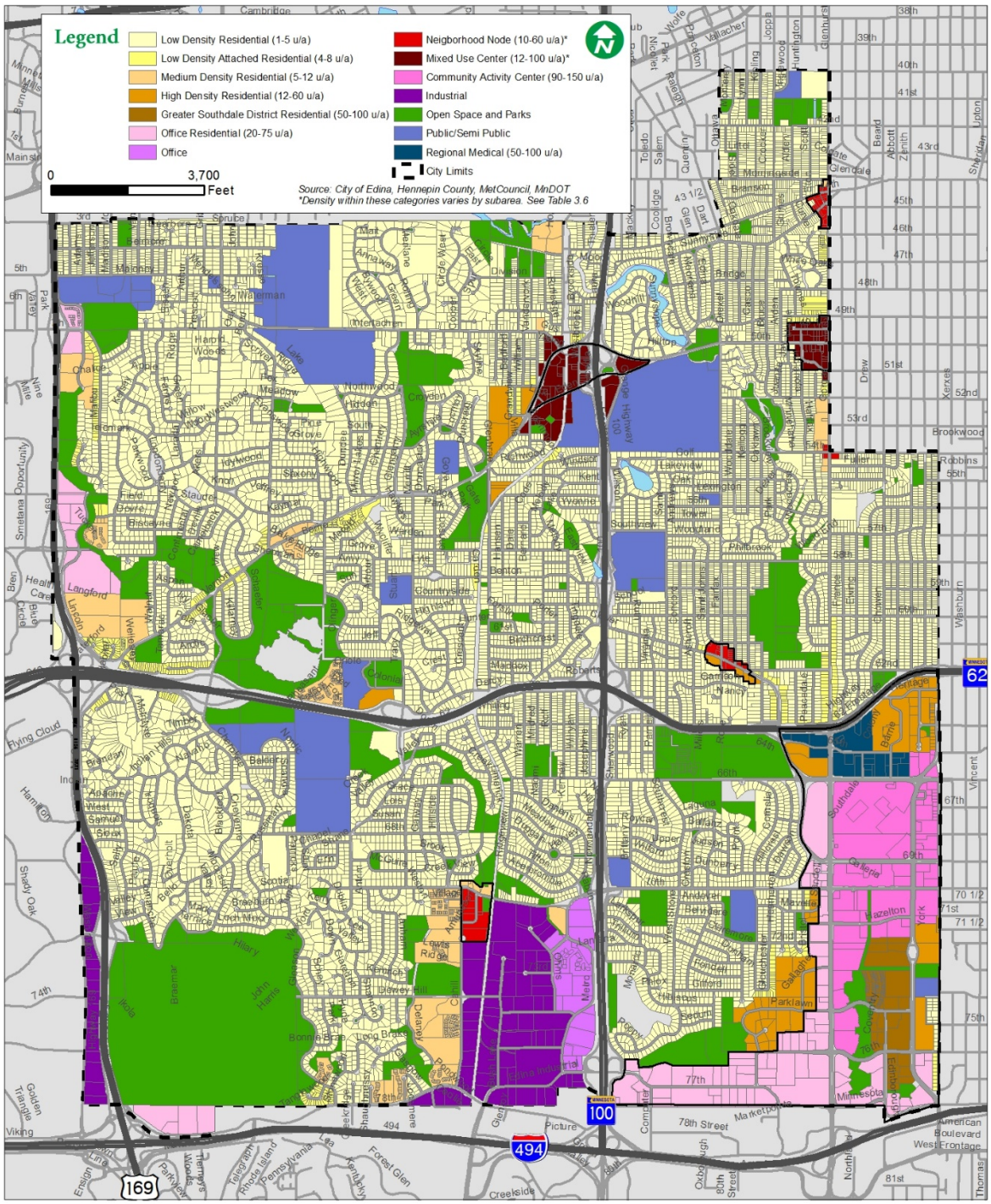


Figure 3.12: Future Land Use

Edina Comprehensive Plan
Edina, Minnesota

Figure 5.1. Existing Sidewalk Facilities
October 2019

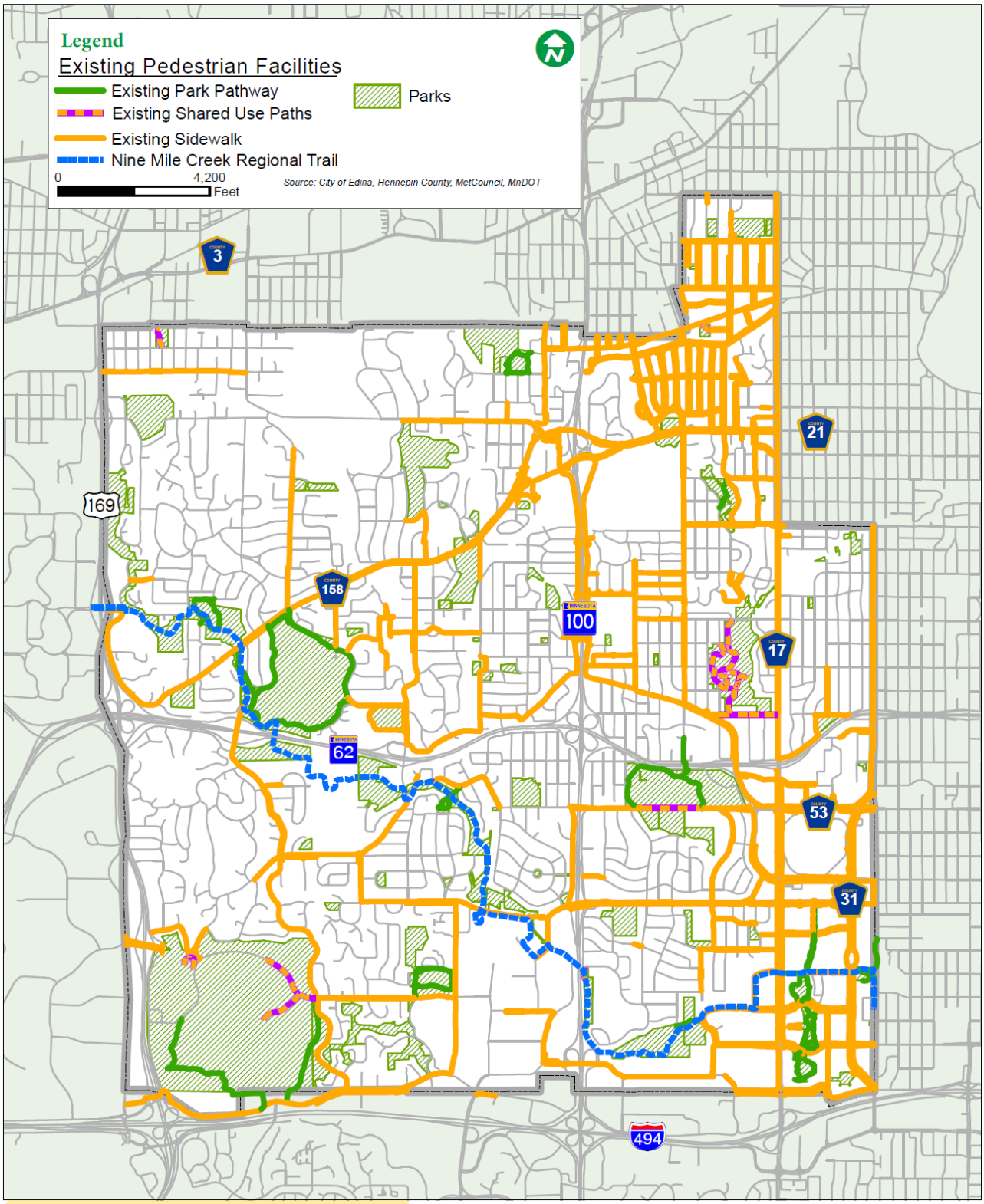


Figure 5.1: Existing Sidewalk Facilities

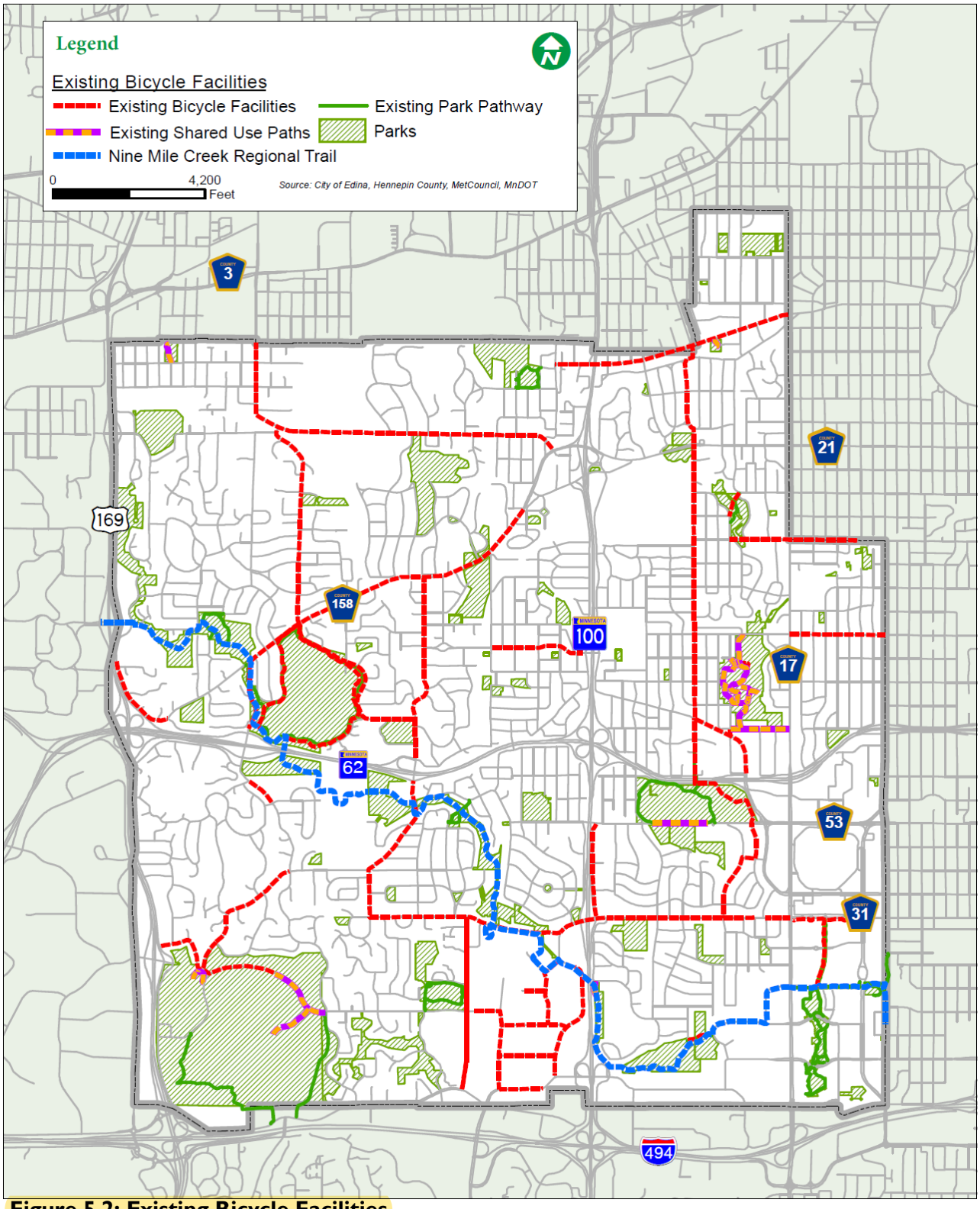


Figure 5.2: Existing Bicycle Facilities

Edina Comprehensive Plan **Figure 5.3. Regional Bicycle Transportation Network**
Edina, Minnesota **October 2019**

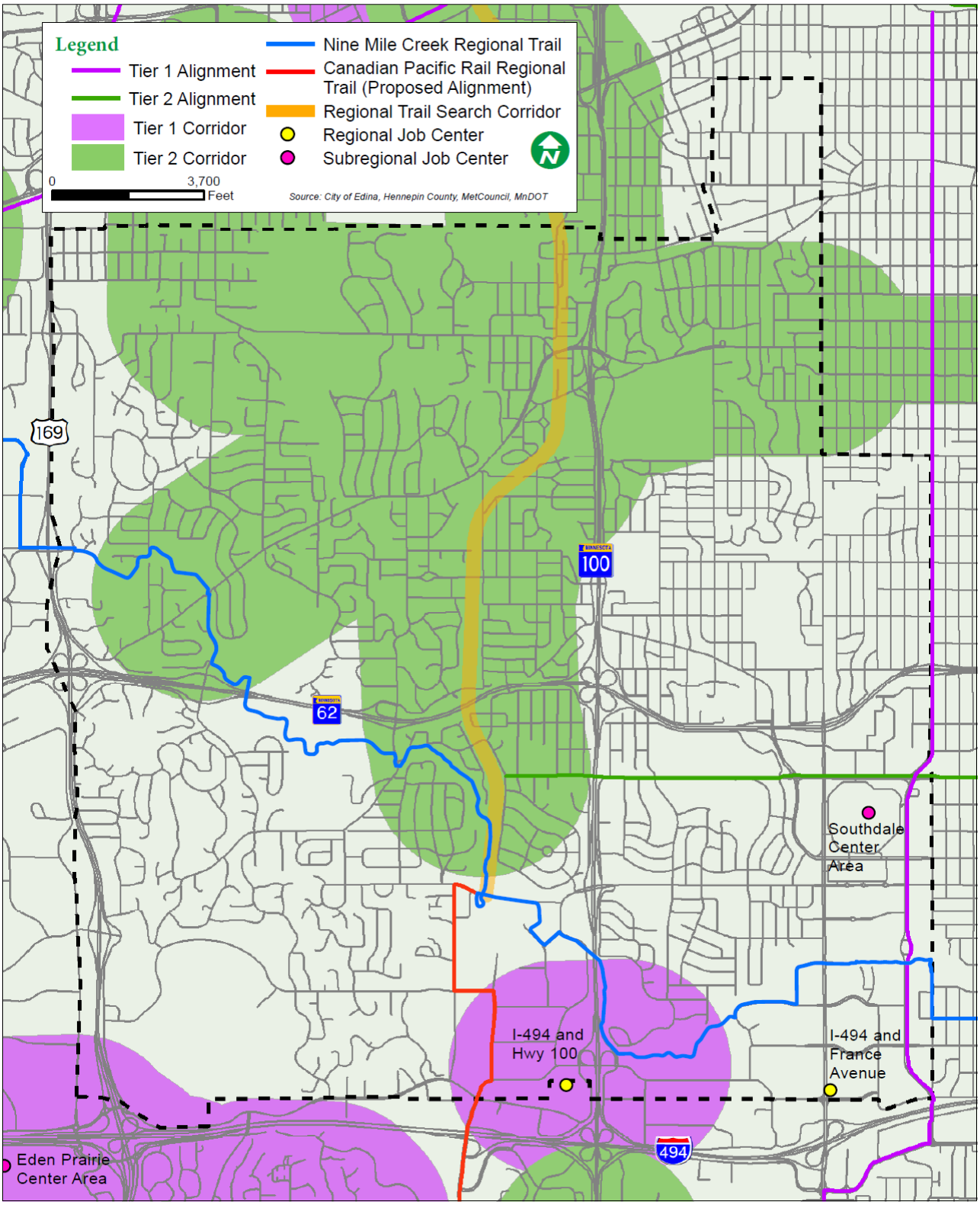


Figure 5.3: Tier 1 and Tier 2 Regional Bike Network

Tier 1 RBTN Corridors have been identified by the Metropolitan Council as the highest priority for regional transportation planning and investment. **Tier 2 RBTN Corridors** are the remaining corridors in the overall regional network and are assigned the second tier priority. As shown, there is one small Tier 1 RBTN corridors in Edina, which looks to make a connection between two RBTN alignments across the W 77th St bridge over TH 100. Additionally, there are three Tier 2 RBTN corridors in Edina. These corridors (which do not yet have defined alignments) are centered on:

- Blake Road/Interlachen Boulevard
- Vernon Avenue/West 50th Street
- Canadian Pacific Railroad north of West 66th Street

Tier 1 and Tier 2 RBTN Corridors are similar to **RBTN Alignments**. Unlike the Corridors, the Alignments have specific route alignments defined through discussions with City and County staff. These alignments either already exist or are defined in City planning documents. The Nine Mile Creek Regional Trail, opened in 2018 by Three Rivers Park District, is the only Tier 1 RBTN Alignment in Edina, and West 66th Street is the City's only **Tier 2 RBTN Alignment.**

Transit

Existing Transit Routes and Paratransit Services

Scheduled transit service for Edina residents is currently provided by Metro Transit (a division of the Metropolitan Council) and by Southwest Transit. Most of the City of Edina is within Metro Transit's Market Area III, with eastern portions (including Southdale and northeast Edina) in Market Area II.

Transit Market Area II has high to moderately high population and employment densities and typically has a traditional street grid that is comparable to Market Area I. Much of Market Area II is also categorized as an Urban Center and can support many of the same types of fixed-route transit services as Market Area I, although usually at lower frequencies or shorter service plans.

Transit Market Area III has moderate density but tends to have a less well developed traditional street grid that can limit the effectiveness of transit. It is typically Urban with large portions of Suburban and Suburban Edge communities. Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route service is not viable.

The existing scheduled service to Edina residents is detailed in Table 5.1 on the next page and illustrated on Figure 5.4.

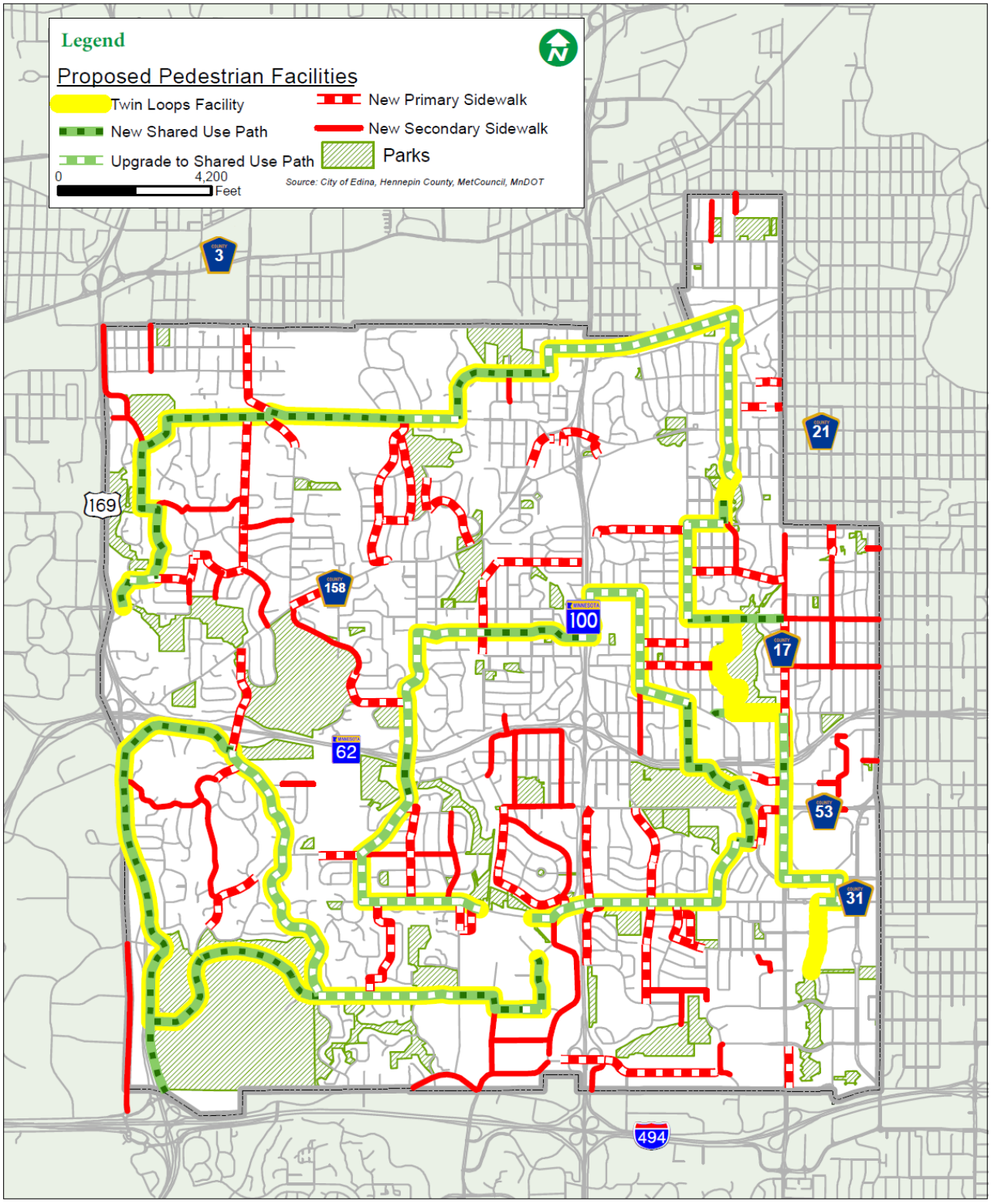


Figure 5.14: Proposed Sidewalk Facilities

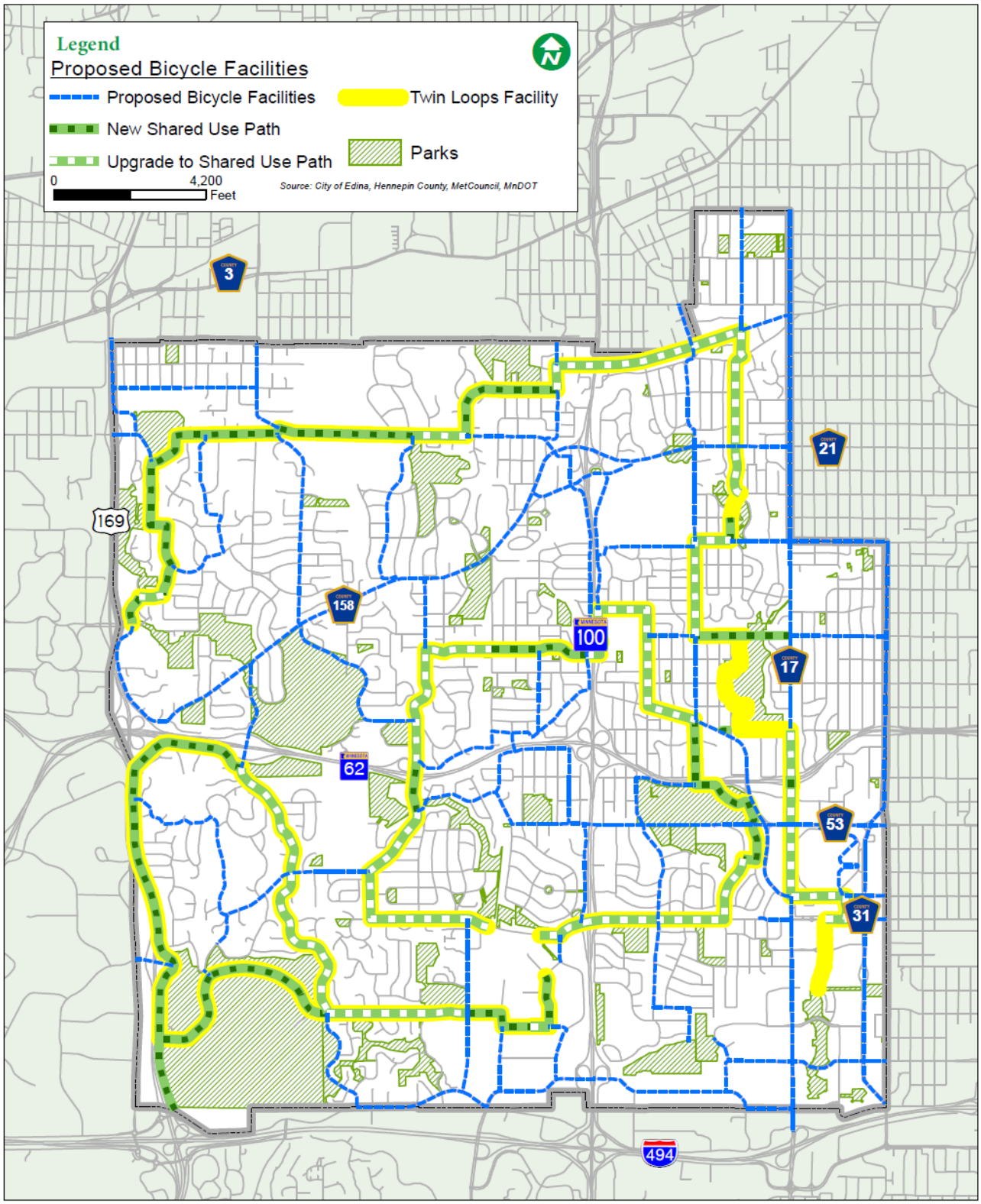


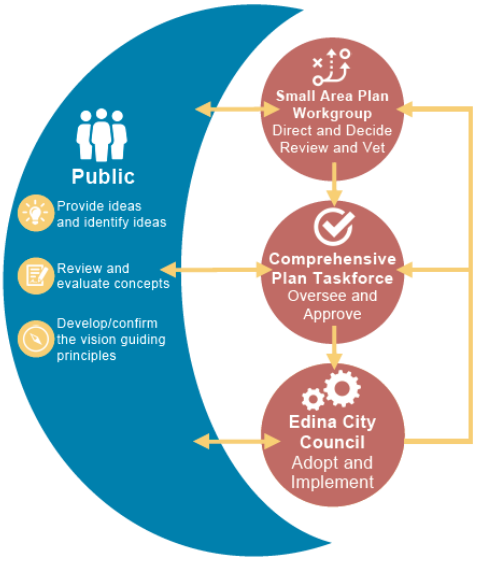
Figure 5.15: Proposed Bicycle Facilities

efficiency in new infrastructure investments in streets, sidewalks, transit lines, water and sewer lines, stormwater management, and parks.

Plan Development

During 2017 and 2018, City of Edina Comprehensive Plan Task Force (CPTF) of the Planning Commission led a work program that organized the City's other commissions in a collaborative effort with City staff and a team of professional consultants to examine and update the various topical chapters of the 2008 Comprehensive Plan, consider current and future issues, and propose new directions where appropriate and warranted.

The planning process was initiated in April 2017 with two workshops. The first workshop, conducted over two days, was "Bridging Between Vision and Planning. During the first day, participants reaffirmed findings from "Vision Edina," a city-wide visioning document completed in 2015 and identified "Big Ideas" that should be considered in the development of the Comprehensive Plan. The second day was focused on mapping the "Big Ideas.



In early May, another workshop, "Comprehensive Planning 101" was sponsored by the Comprehensive Plan Task Force for all City Commissions.

A Community Kick-Off Meeting was held in mid-May 2017 to officially begin work on the Comprehensive Plan.

Through dozens and dozens of meetings and work sessions, resident and business Work Groups led the preparation of each of the draft neighborhood node Small Area Plans and the District Plan for Greater Southdale, with those processes also including public open houses for review and comment.

Throughout this process, over 170 meetings, workshops, and open houses were held.

Plan Organization

The Edina Comprehensive Plan is designed: (1) to be a readable and functional decision-making framework to guide future growth and change in Edina and (2) to fulfill Edina's regional responsibilities for land use, housing, transportation, water resources, and regional parks and trails.

Edina: A Community of Learning

An additional focus of Edina's local planning is "EDUCATION." This element of life in Edina has long served as a major attraction for families who decide to move to the community, and the quality and achievement levels of Edina's public schools are second to none in the State of Minnesota. But the Planning Commission has asked, "Why should high quality education be limited to the public schools? Shouldn't education be woven into the fabric of the community in as many ways as possible; in artistic and cultural expressions, in the parks, in public infrastructure, in community gatherings, in community health, in policing, in heritage preservation, etc.?" Thus, goals, policies, and implementation steps presented in this plan update place an emphasis on information demonstrations, exhibitions, sharing,

City of Edina

Pedestrian and Bicycle Master Plan

ADOPTED 02/21/18

A more walkable, more bikeable Edina

This plan is a document to guide Edina's continuing evolution toward becoming a more walkable, bikeable community that offers its residents a full range of healthy, active and sustainable transportation options for moving in and around their city, and for connecting to its numerous recreational, commercial and entertainment opportunities.

Goals

Goals for the plan are twofold:

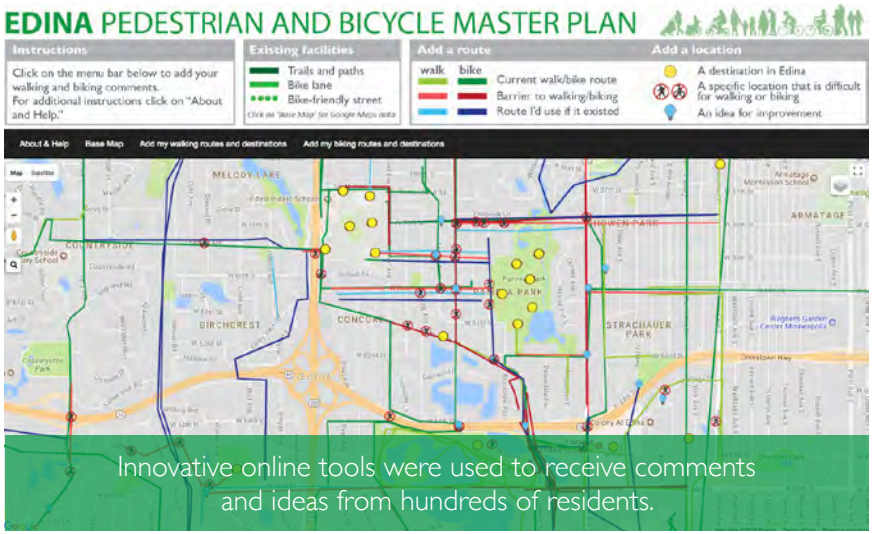
- To increase the number of Edina residents, workers and visitors who walk or bike for transportation, health, fitness, and recreation in the city, and,
- To support city, resident and elected officials' work and efforts to offer the highest quality of life and best experience of their city to Edina residents, businesses, workers and visitors.

Community guidance

The plan was developed with the active participation of the Edina community, and guidance and consultation with city staff. A vigorous engagement process - using both in-person and innovative online approaches - brought the voice and ideas of well over a thousand Edina residents into the shaping of the plan's vision and recommendations.

The guidance was clear: residents recognize, enjoy and appreciate the many walk / bike assets the city has developed over the last ten years - but there are also many opportunities for improving current conditions and innovating, once again, to develop and offer residents the best, most productive approaches for growing walking and biking in the city.

Engaging with Edina High students to receive their ideas for the plan.



Innovative online tools were used to receive comments and ideas from hundreds of residents.

2.1 What we did

Connecting with Edina residents was a key priority for the plan. We conducted extensive in-person and online engagement to receive comments and guidance from Edina residents detailing their current experiences and their aspirations for the future of walking and biking in the city.

The plan's vision and recommendations reflect this guidance, as well as the comments and guidance from Edina staff and other stakeholders. **A detailed summary of public engagement efforts can be found in Appendix B.**

Gathering comments from Edina residents at Bredesen Park.

Where did we go?

We held several in-person events to share project information and gather resident comments. Events included:

- Kick-Off Open House (July 2017)
- Centennial Lakes Farmer's Market (Pop-Up Workshop)
- Jerry's Foods (Pop-Up Workshop)
- Bredesen Park (Pop-Up Workshop)
- Edina High School (Listening Session)
- Final Open House (December 2017)

In-person engagement

Activities for in-person engagement varied slightly between events, but in general included the following:

- Plan overview
- "I Love / I Wish" activity (what's working and what needs work)
- Identifying barriers and prioritizing solutions
- Mapping destinations, routes, barriers, and ideas
- Opportunities for general comments and questions.

Students providing their comments at a session at Edina High School.

ENGAGEMENT BY THE NUMBERS

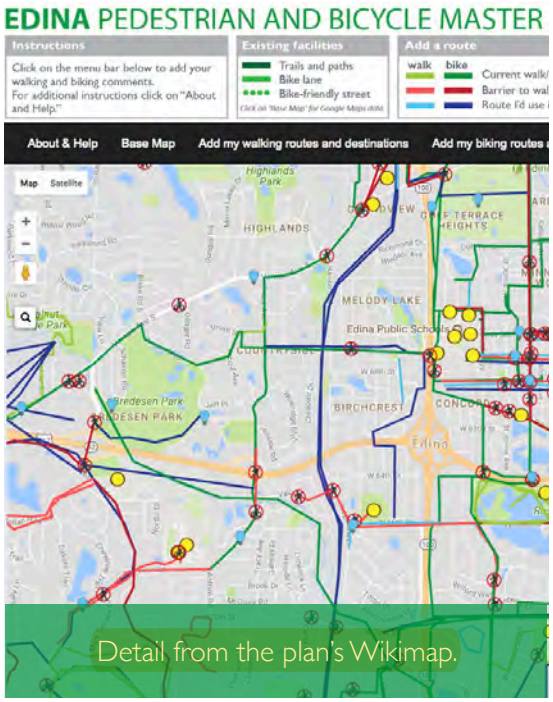
6 In-person events offered people the opportunity to share experiences and ideas for improving walking and biking in the city

OVER 300 Participants logged into the interactive online map and identified routes they use or would like to use

OVER 700 Map comments, including destinations, routes, barriers, and ideas shared in person and online

680 Project surveys completed online

At the Edina Farmer's Market Pop Up.



Detail from the plan's Wikimap.

The plan's website was a resource for sharing plan information.

Online engagement

The plan also included a robust online engagement effort, including:

» A project website (EdinaMN.gov/PedestrianBicycleMasterPlan) to disseminate project updates and information

» An interactive online mapping tool (Wikimap) where residents could upload location-specific issues, comments or ideas, as well as routes and improvements

» An online survey to receive resident comments and information related to their priorities and the issues they experience while walking or biking Edina

Online materials were designed to closely match in-person activities. The online tools were launched in May 2017, and results were analyzed and used to shape the plan's vision and recommendations.

The City also used its social media channels (including Facebook and Twitter) to promote the plan's online tools, and announce public events.


At a meeting of the plan's Project Management Team (PMT).

Engagement with City Staff and Boards

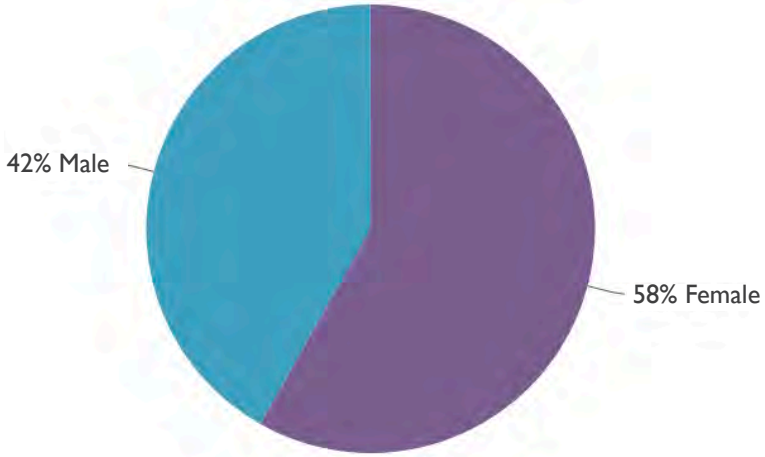
Throughout the plan's development, the project team worked closely with City Staff and Boards, including:

» The Project Management Team (PMT), made up of staff from Edina departments, including Public Works, Planning, Police, Communications, Sustainability and boards including the Human Rights Commission

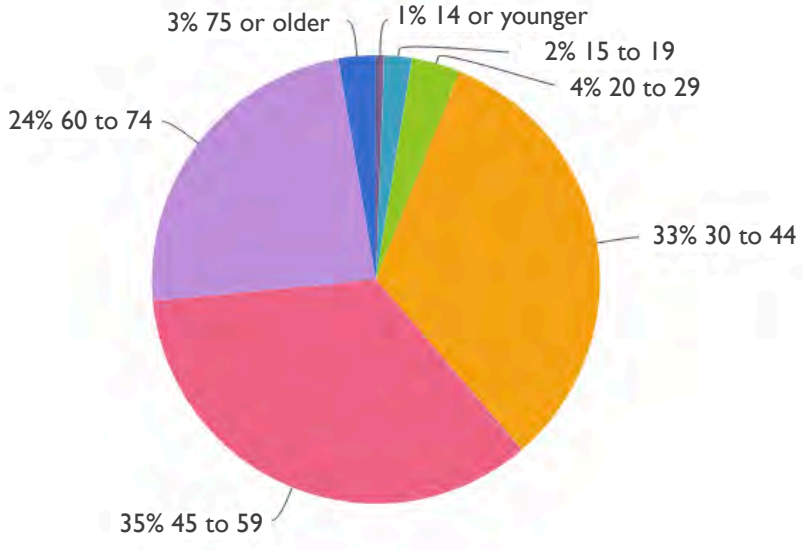
» The Edina Transportation Commission (ETC), who was regularly updated on plan progress and provided their comments and guidance on plan development

Who participated in engagement?

Participants by gender



Participants by age

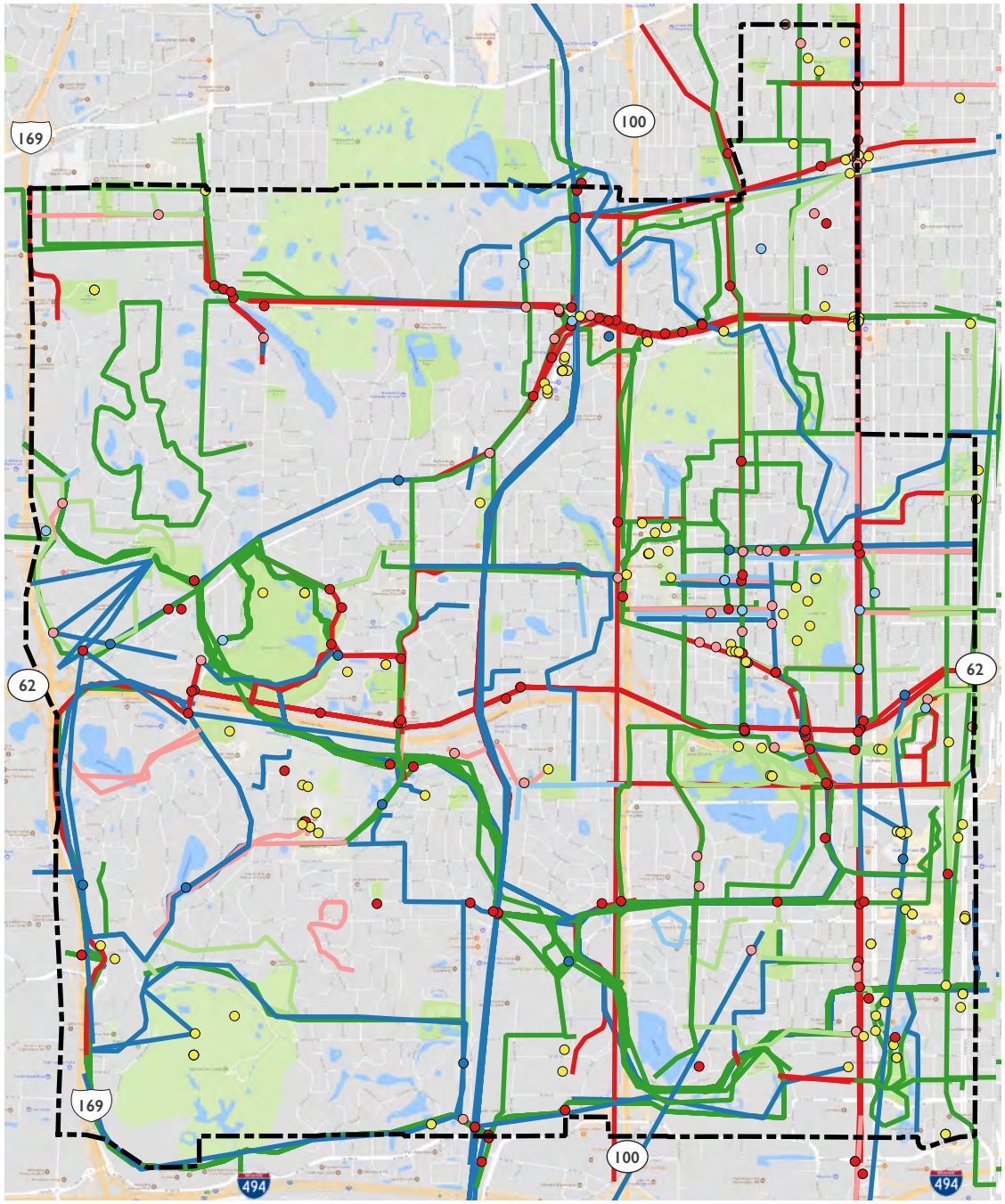


What did we learn?

Several key themes emerged through engagement, including:

- Residents recognize, appreciate and use the significant network for walking and biking that is in place today, while they also recognize opportunities for improving the system
- Many residents are regularly walking in Edina today
  - The majority of participants in the plan's engagement (52%) are walking four or more times per week
  - About 80% of respondents walk for pleasure or exercise at least 2-3 times per week
  - About 55% of respondents walk at least once a week to visit friends and relatives
- Biking is a popular activity in Edina today
  - The majority of participants in the plan's engagement (55%) ride a bike at least 2-3 times per week
  - Almost 30% of respondents ride a bike at least once per week to go shopping
  - About 20% of respondents ride a bike at least once a week to go to work
- Opportunities for improving and walking and biking in the city include:
  - Making it easier for people to cross busy streets
  - Increasing separation from motor-vehicle traffic
  - Addressing gaps in the network
  - Improving wayfinding
  - Installing more bike racks

Map of all comments from public engagement (in-person and online)



Routes and locations shown

- Current walking route
- Current biking route
- Barrier to walking
- Barrier to biking
- Route pedestrian would take if improved
- Route cyclist would take if improved
- A destination in Edina
- A location that is difficult for walking/ biking
- An idea for improvement

Data source: Edina Pedestrian and Bicycle Master Plan Engagement 2017

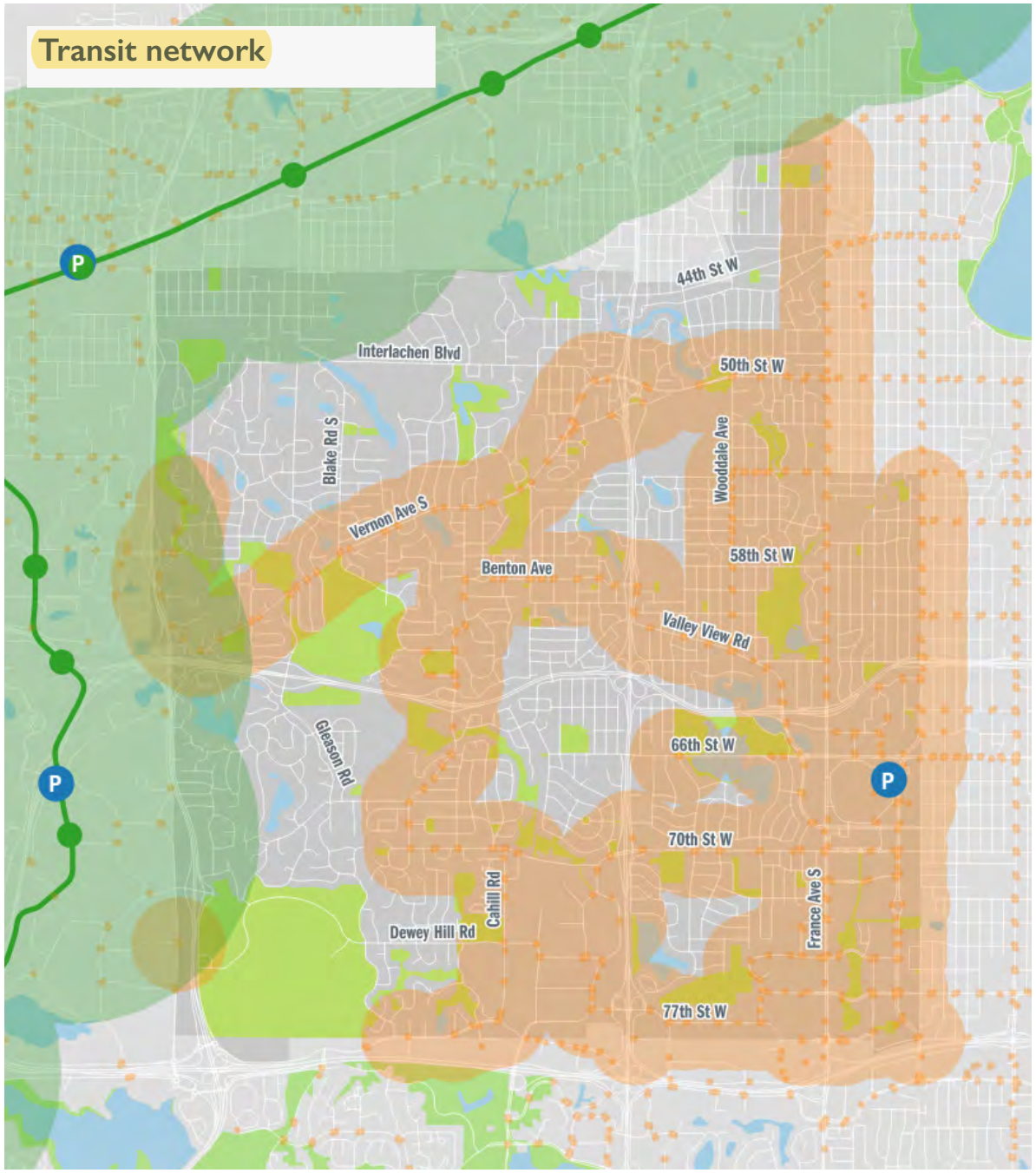
Transit network

Edina is served by Metro Transit bus service with suburban local and limited stop commuter routes. The city is also just south and east of several stations for the planned SWLRT Green Line Extension, a light rail transit service that will extend from downtown Minneapolis to St. Louis Park, Hopkins, Minnetonka and Eden Prairie.

Five stations for SWLRT are located within one mile of the city's boundary.

Existing Transit and Planned Blue Line Extension (SWLRT)

- Existing Metro Transit bus stop
- Existing Metro Transit Park & Ride
- SWLRT Planned Station Location
- SWLRT Planned Green Line Extension alignment
- .25 mile bus transit station buffer (5-minute walk)
- 1.0 mile SWLRT station buffer (7-minute bicycle ride)



Redevelopment districts

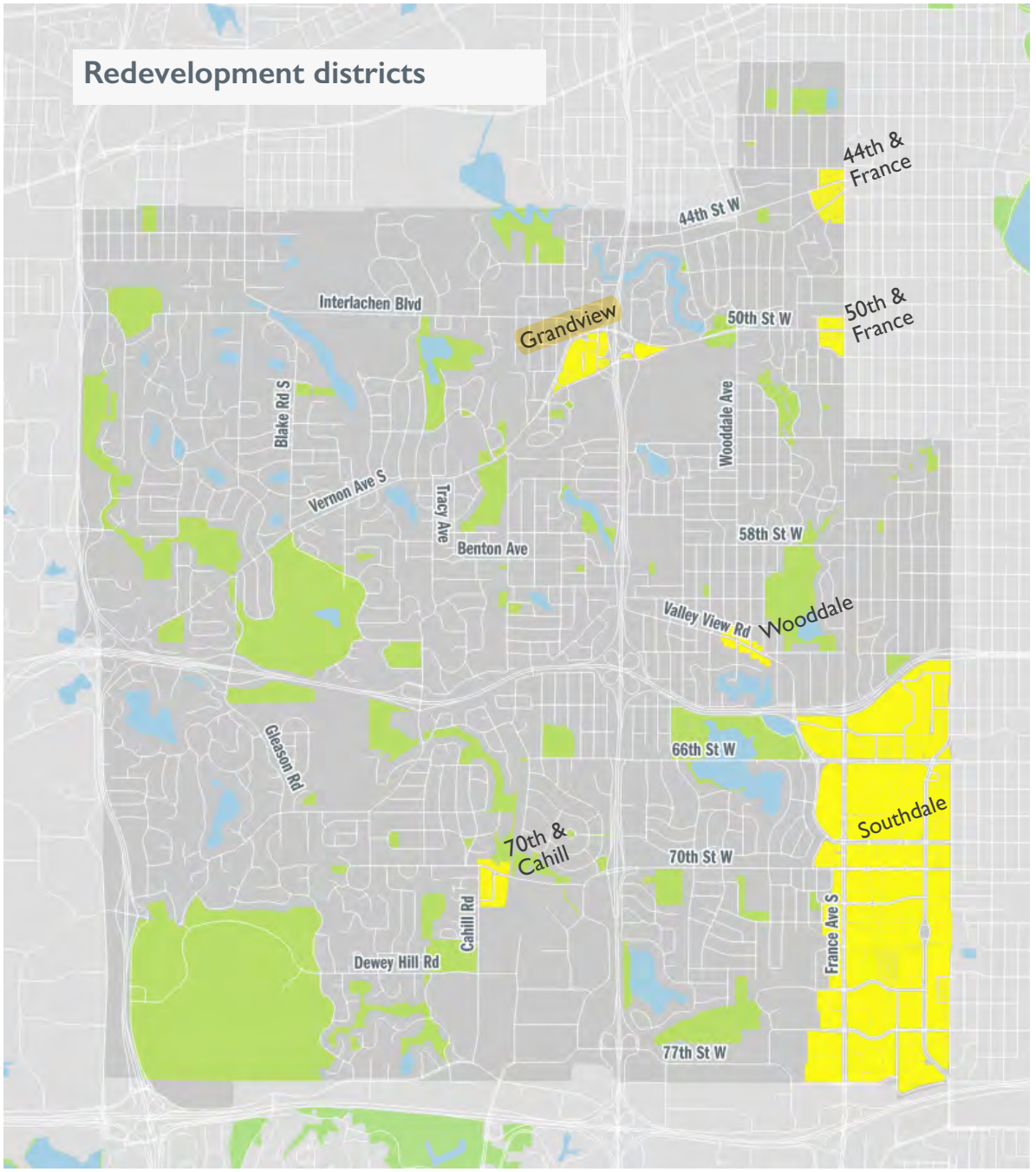
Planning for "Nodes and Modes"

As part of Edina's 2018 Comprehensive Plan Update, several potential redevelopment areas within the city are undergoing planning efforts to explore the possibility of developing neighborhood nodes that could host high-density residential development and a mix of commercial uses.

Access to these nodes is envisioned to feature high-quality pedestrian and bicycle facilities.

Redevelopment districts

Parcel in redevelopment district



Existing pedestrian network

Edina's walking network includes two types of facilities

» Sidewalks

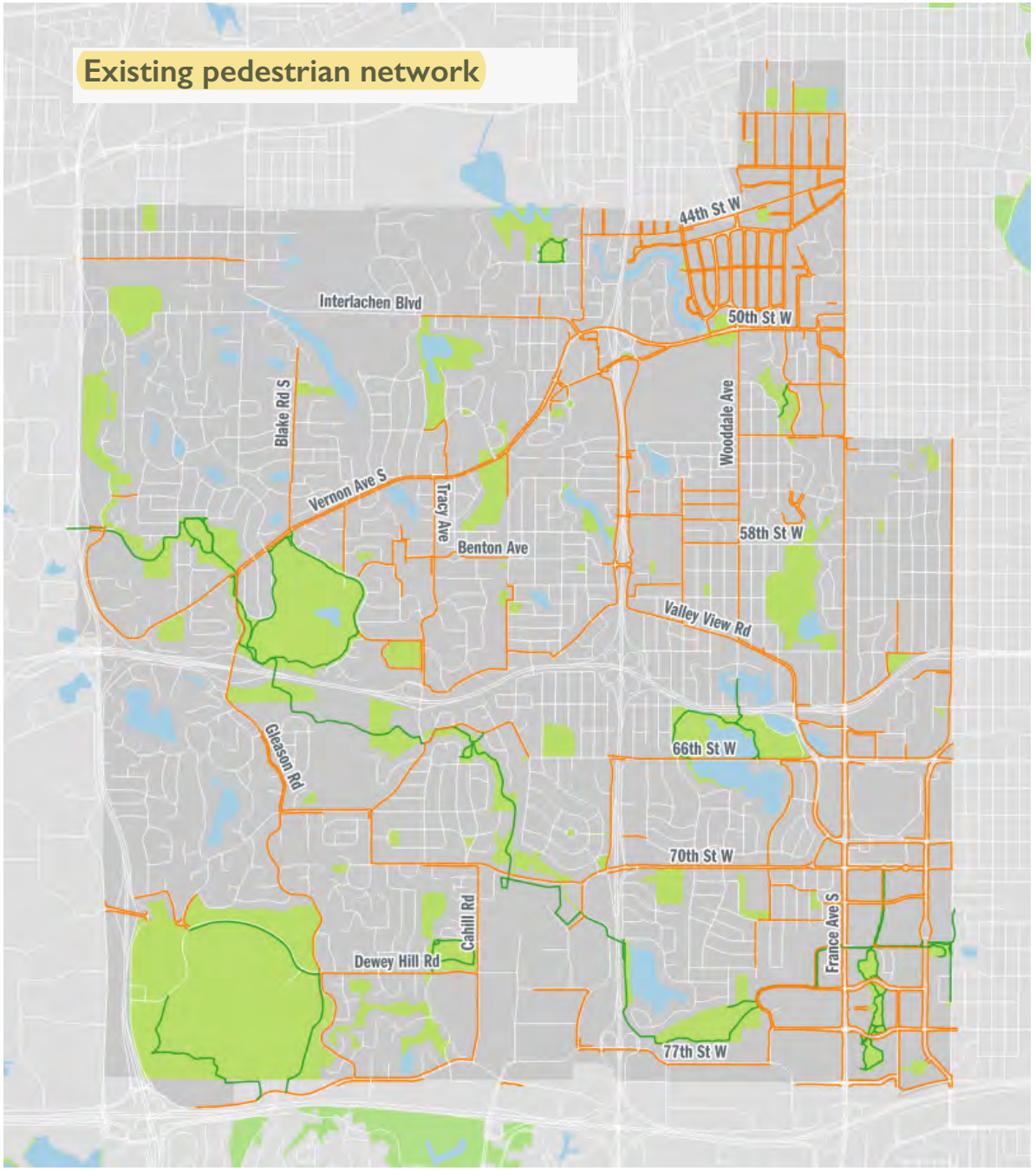
» Shared-use paths and park trails

Approximately half of the city's existing pedestrian crossings require upgrading to meet ADA / accessibility guidelines.

Existing pedestrian network

Existing sidewalks

Existing shared-use paths and park trails



Existing bicycle network

Edina's current bicycle network includes the following types of facilities

- Advisory bike lanes
- Bike boulevards
- Bike lanes
- Shared lanes for bikes / motor vehicles
- Signed bicycle routes
- Shared-use paths and park trails

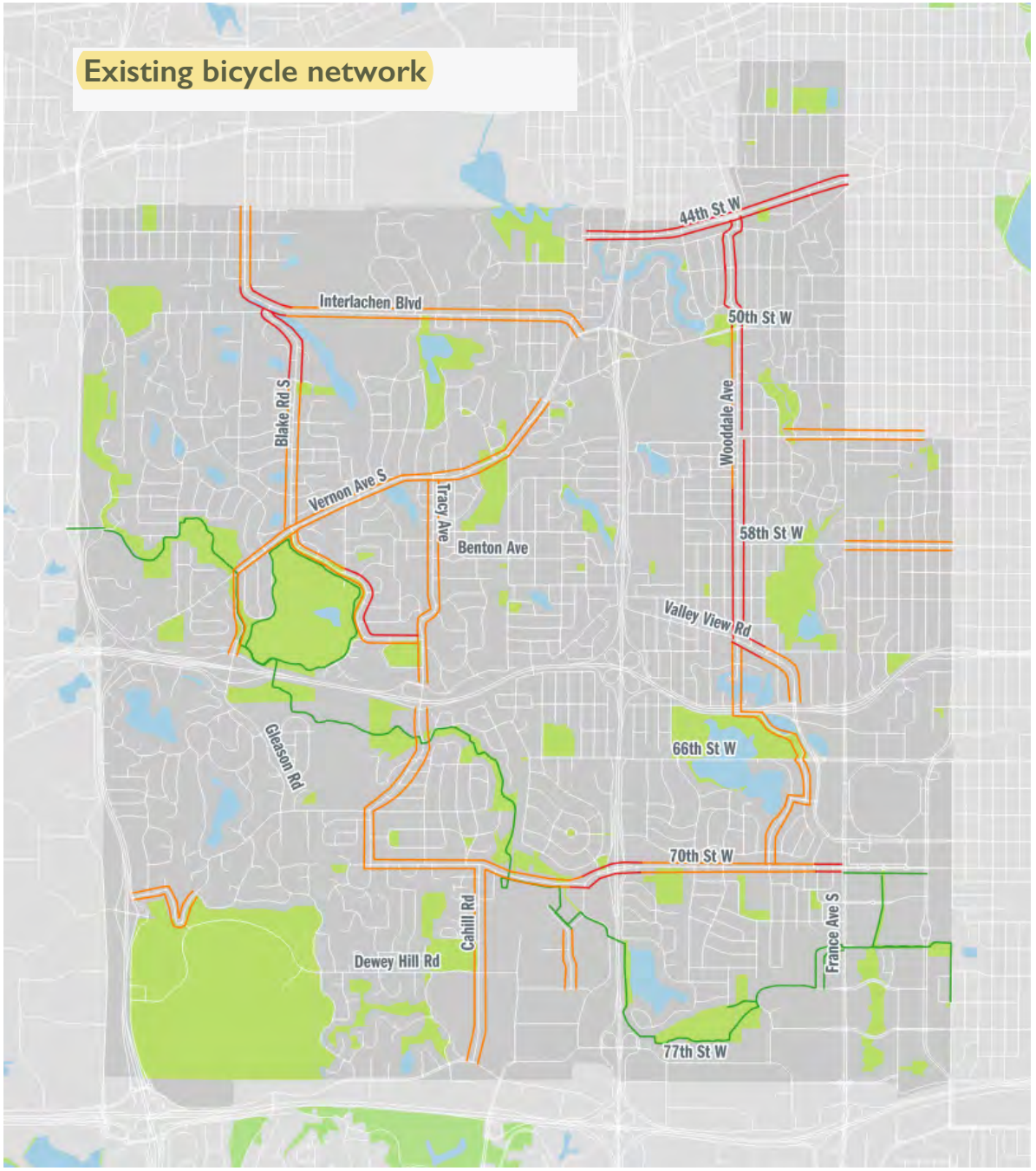
Some facilities require a higher tolerance for traffic stress than what is comfortable for the majority of the adult population. The map on this page shows existing facilities grouped by comfort level, with facilities shown in green being comfortable to the widest range of users.

Existing bicycle network

Existing shared-use paths and park trails (most comfortable)

Bike lanes, advisory bike lanes, bike boulevards

Shared lanes for bikes / motor vehicles, signed bicycle routes (least comfortable)



sidewalk network identified in the amendment is brought into the recommendations of this plan.

Living Streets Plan (2015)

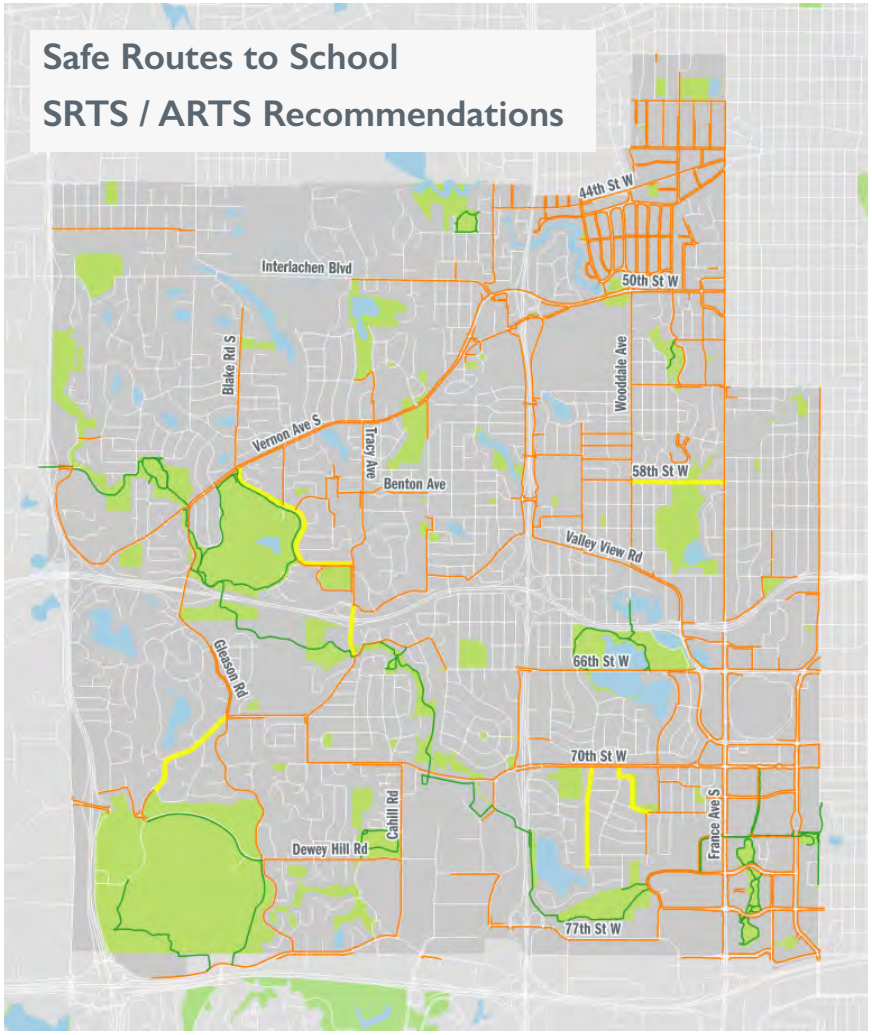
The plan's recommendations for improving safety for all users of the city's transportation network and for improving sustainability of related systems are a key influence on this plan.

Edina Active (Safe) Routes to School Comprehensive Plan (2014)

Edina's Safe Routes to School Plan (called "Active Routes to School (ARTS)") identifies opportunities and priorities to increase walking and biking in the city. The plan's walking and biking facility recommendations are brought into the recommendations of this plan.

Other city planning policies and initiatives informing this plan include:

- Vision Edina 2015
- City of Edina Active Transportation Bike/Pedestrian and Bicycle Parking Action Plan (2013, 2014)
- Bicycle Friendly Community Feedback Key Steps to Silver (2014)
- City of Edina Comprehensive Bicycle Transportation Plan (2007)
- Grandview District Transportation Study (2016)
- Southdale Area Transportation Study (2016)



Other plans and policies referenced by this plan

Hennepin County

» Hennepin County Pedestrian Plan (2013)

» Hennepin County 2040 Bicycle Transportation Plan (2015)

» Hennepin County Complete Streets Policy (2009)

» Hennepin County "Cool County" Initiative

» Hennepin County Active Living Policies and Partnership

» Hennepin County Transportation Systems Plan

» Hennepin County Public Works Strategic Plan

Three Rivers Park District

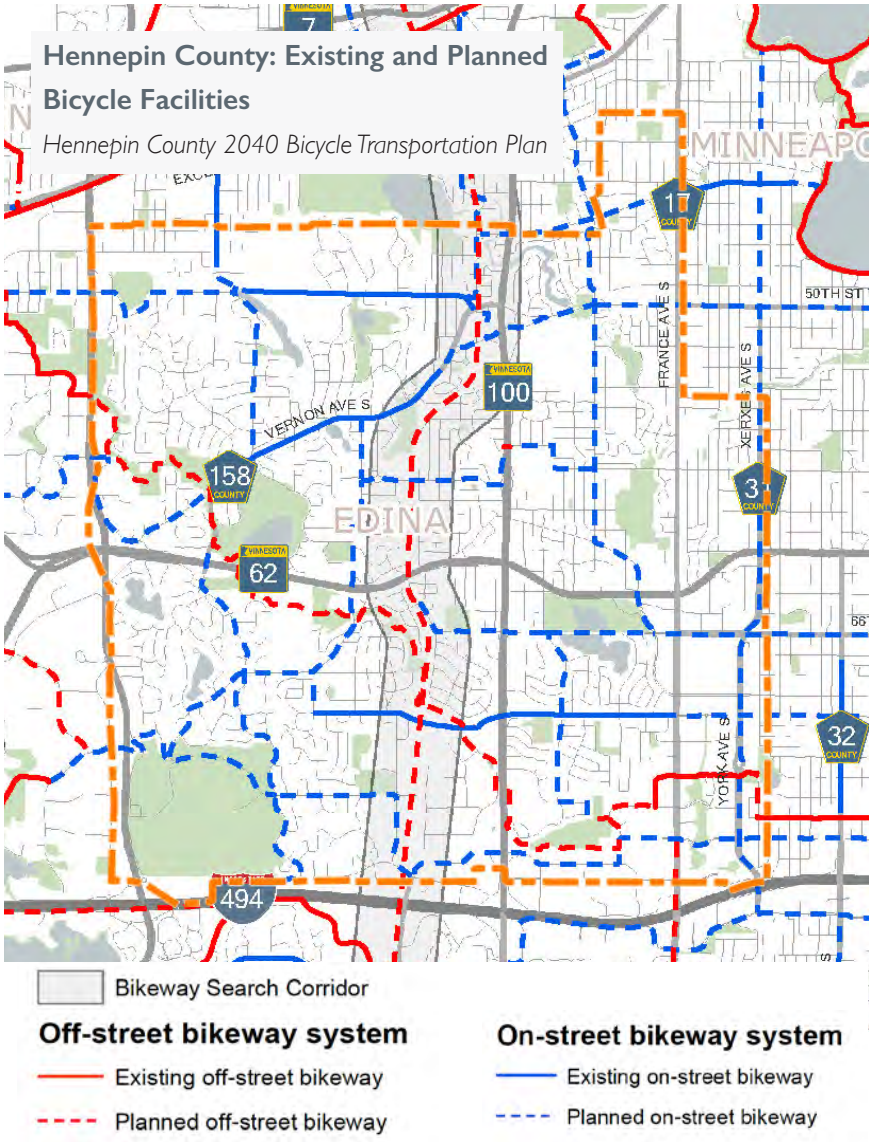
» Nine Mile Creek Regional Trail Master Plan

» Three Rivers Park District Vision Plan

Metropolitan Council

» Metropolitan Council Transportation Policy Plan (TPP)

» Twin Cities Regional Bicycle System Study



Proposed pedestrian network

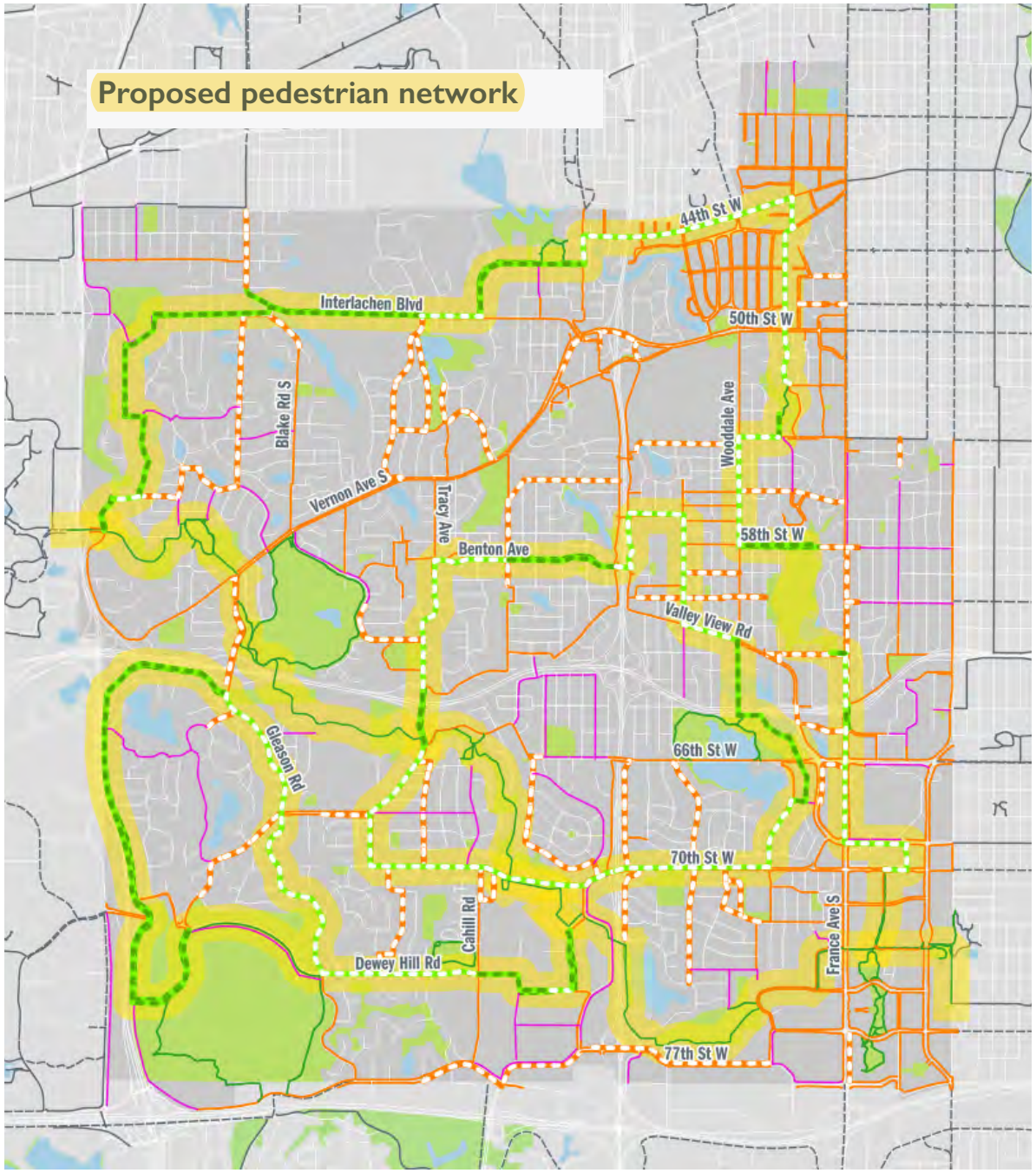
Sidewalks and trails connecting neighborhoods and destinations to Edina's Twin Loops are identified as Primary connections, while other pedestrian links are identified as Secondary.

Recommendations

- Edina Twin Loops - All Ages and Abilities Network
- New Primary sidewalk
- New shared-use path
- Upgrade existing sidewalk to shared-use path
- New Secondary sidewalk

Existing facilities

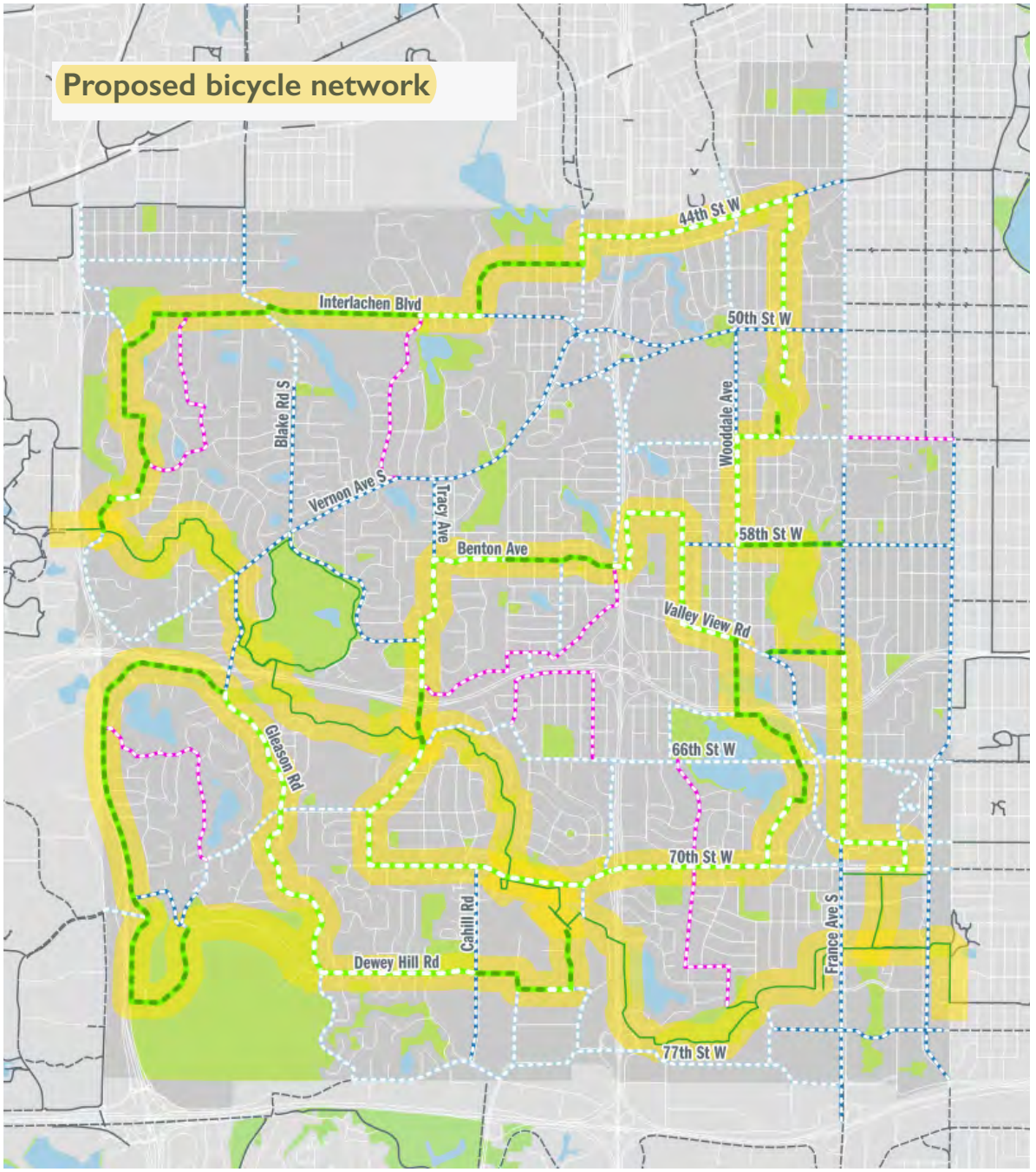
- Existing sidewalks
- Existing shared-use path/trail
- Existing network in neighboring community
- Planned network in neighboring community



Proposed bicycle network

Recommendations

- Edina Twin Loops - All Ages and Abilities Network
- New separated / protected bicycle lane (long-term: shared-use path)
- New separated / protected lane or upgrade existing sidewalk to shared-use path (long-term)
- Neighborhood Slow Street / Bike boulevard
- Buffered bike lane
- Conventional bike lane
- Existing shared-use path/trail
- Existing network in neighboring community
- Planned network in neighboring community



RESOLUTION NO. 2022-37

SUPPORTING THE CITY OF EDINA'S REGIONAL SOLICITATION APPLICATION FOR TH100 / VERNON AVENUE / 50th STREET DIVERGING DIAMOND INTERCHANGE

WHEREAS, MnDOT owns and manages the TH100 Bridge over Highway 100; and,

WHEREAS, Hennepin County manages Vernon Avenue to the center of the TH100 Bridge within the Grandview District; and,

WHEREAS, the existing road does not meet today's multi-model transportation needs and warrants modernization; and,

WHEREAS, the City's guiding documents detail many unmet bicycle and pedestrian needs within the Grandview District; and,

WHEREAS, the City of Edina is submitting an application to the Metropolitan Council to obtain federal funding for the TH 100 / Vernon Avenue / 50th Street Diverging Diamond Interchange in the Grandview District; and,

WHEREAS, improved traffic operations, safe and inviting bicycle and pedestrian facilities can be created by completing a diverging diamond interchange; and,

WHEREAS, the funding would be available for the years 2026-2027 and require a 20% match; and,

WHEREAS, both MnDOT and Hennepin County support this regional solicitation application for a diverging diamond interchange; and,

NOW THEREFORE, BE IT RESOLVED, the City of Edina supports submitting a regional solicitation application for federal funding for a diverging diamond interchange at TH100 in the Grandview District.

Adopted this 5th day of April, 2022.

ATTEST: _____
Sharon Allison, City Clerk

Kevin Staunton (Apr 8, 2022 13:46 CDT)
Kevin Staunton, Acting Mayor

STATE OF MINNESOTA)
COUNTY OF HENNEPIN)
CITY OF EDINA)

CERTIFICATE OF CITY CLERK

I, the undersigned duly appointed and acting City Clerk for the City of Edina do hereby certify that the attached and foregoing Resolution was duly adopted by the Edina City Council at its Regular Meeting of April 5, 2022, and as recorded in the Minutes of said Regular Meeting.

WITNESS my hand and seal of said City this 5th day of April, 2022.

City Clerk

ENGINEERING DEPARTMENT
7450 Metro Boulevard • Edina, Minnesota 55439
www.EdinaMN.gov • 952-826-0371 • Fax 952-826-0392

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 0.5-miles radius
Description: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Interchange Reconstruction Project

Summary of ACS Estimates	2015 - 2019
Population	3,279
Population Density (per sq. mile)	3,398
People of Color Population	360
% People of Color Population	11%
Households	1,469
Housing Units	1,530
Housing Units Built Before 1950	352
Per Capita Income	94,738
Land Area (sq. miles) (Source: SF1)	0.96
% Land Area	96%
Water Area (sq. miles) (Source: SF1)	0.04
% Water Area	4%

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	3,279	100%	274
Population Reporting One Race	3,227	98%	501
White	2,965	90%	266
Black	59	2%	98
American Indian	0	0%	19
Asian	202	6%	100
Pacific Islander	0	0%	9
Some Other Race	0	0%	9
Population Reporting Two or More Races	52	2%	76
Total Hispanic Population	46	1%	72
Total Non-Hispanic Population	3,233		
White Alone	2,919	89%	266
Black Alone	59	2%	98
American Indian Alone	0	0%	19
Non-Hispanic Asian Alone	202	6%	100
Pacific Islander Alone	0	0%	9
Other Race Alone	0	0%	9
Two or More Races Alone	52	2%	76
Population by Sex			
Male	1,500	46%	152
Female	1,778	54%	160
Population by Age			
Age 0-4	137	4%	45
Age 0-17	802	24%	120
Age 18+	2,477	76%	182
Age 65+	720	22%	105

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019 .

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 0.5-miles radius
Description: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Interchange Reconstruction Project

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	2,264	100%	159
Less than 9th Grade	34	2%	29
9th - 12th Grade, No Diploma	23	1%	43
High School Graduate	262	12%	82
Some College, No Degree	266	12%	90
Associate Degree	192	8%	64
Bachelor's Degree or more	1,487	66%	139
Population Age 5+ Years by Ability to Speak English			
Total	3,142	100%	268
Speak only English	2,827	90%	222
Non-English at Home[1+2+3+4]	315	10%	88
[1]Speak English "very well"	273	9%	80
[2]Speak English "well"	41	1%	38
[3]Speak English "not well"	0	0%	9
[4]Speak English "not at all"	0	0%	9
[3+4]Speak English "less than well"	0	0%	9
[2+3+4]Speak English "less than very well"	41	1%	38
Linguistically Isolated Households*			
Total	12	100%	17
Speak Spanish	9	73%	14
Speak Other Indo-European Languages	0	0%	9
Speak Asian-Pacific Island Languages	3	27%	15
Speak Other Languages	0	0%	9
Households by Household Income			
Household Income Base	1,469	100%	88
< $15,000	80	5%	37
$15,000 - $25,000	105	7%	60
$25,000 - $50,000	292	20%	87
$50,000 - $75,000	178	12%	52
$75,000 +	814	55%	107
Occupied Housing Units by Tenure			
Total	1,469	100%	88
Owner Occupied	854	58%	77
Renter Occupied	615	42%	79
Employed Population Age 16+ Years			
Total	2,600	100%	189
In Labor Force	1,613	62%	172
Civilian Unemployed in Labor Force	59	2%	33
Not In Labor Force	988	38%	135

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 0.5-miles radius
Description: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Interchange Reconstruction Project

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	2,579	100%	239
English	2,388	93%	259
Spanish	23	1%	41
French	48	2%	37
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	0	0%	9
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	19	1%	37
Chinese	34	1%	72
Japanese	N/A	N/A	N/A
Korean	0	0%	9
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	9
Other Asian	40	2%	79
Tagalog	0	0%	9
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	9
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	8	0%	22
Total Non-English	191	7%	352

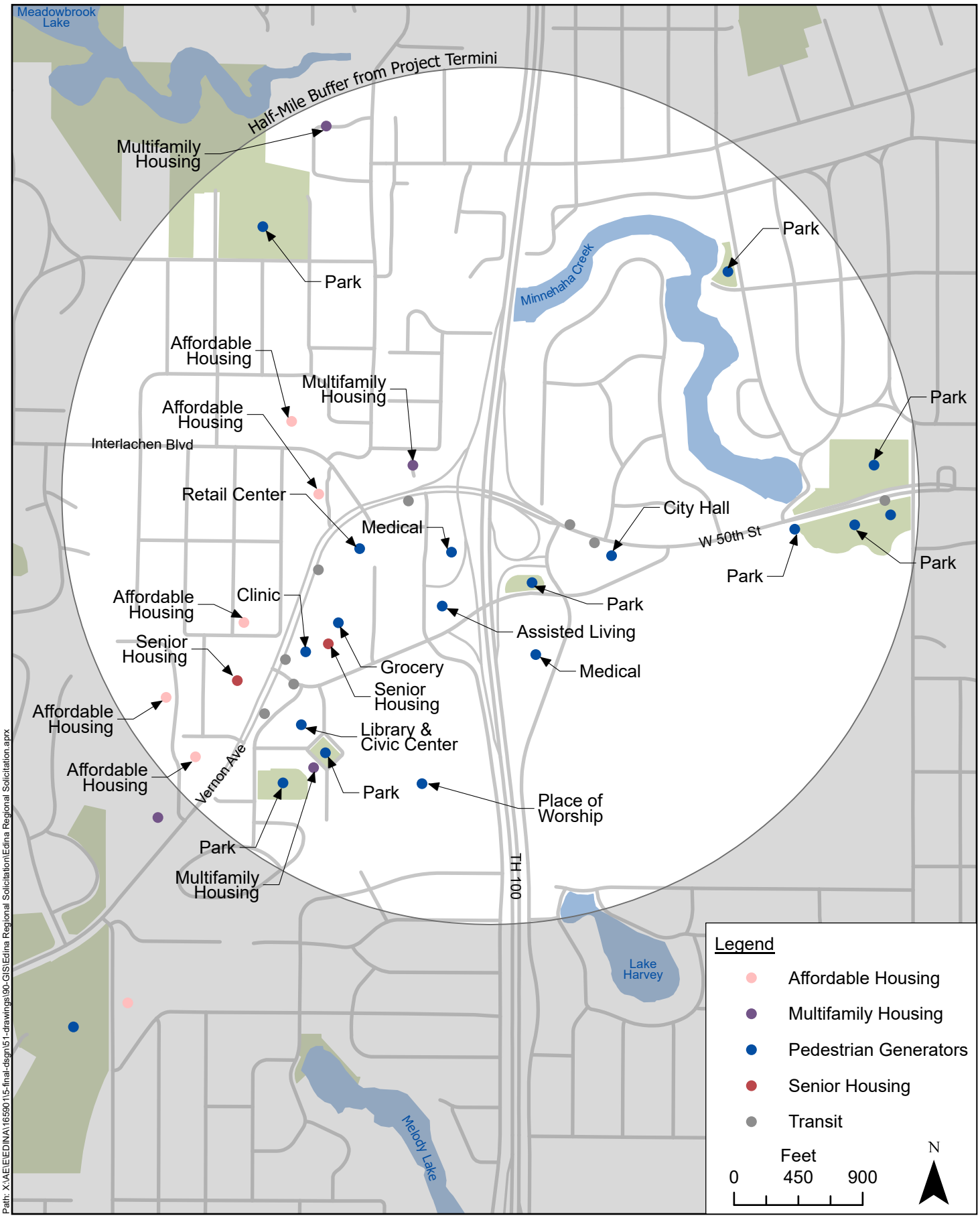
Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019.
*Population by Language Spoken at Home is available at the census tract summary level and up.

Regional Solicitation

Figure 1

Hennepin County
Edina

CSAH 158 & TH 100
Date: 03/2022; Project: 165901



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Existing Condition Photographs:
TH 100/CSAH 158 (Vernon Ave) Interchange in Edina

EDINA
MINNESOTA

VIEW: Looking west along CSAH 158 (Vernon Ave) bridge over TH 100

VIEW: Looking west along CSAH 158 (Vernon Ave) near northbound TH 100 on-ramp *April, 2022*

GrandView District Development Framework

Edina, Minnesota

December 7, 2011

Revised January 17, 2012

Revised January 25, 2012

Revised January 31, 2012

Revised March 27, 2012

Revised April 5, 2012

Executive Summary

The Development Framework presented here is part of a small area planning process required by Edina's Comprehensive Plan for those parts of our community (like the GrandView District) designated as Potential Areas of Change. It follows the 2010 GrandView District Small Area Guide Plan process. That process – led by a group of community residents and business and property owners – resulted in adoption by the Edina City Council of seven Guiding Principles for the redevelopment of the GrandView District.

The process of crafting this Development Framework has been led by a 52-member Steering Committee made up of residents of the community and owners of area businesses and properties. The 52 members of the Steering Committee have dedicated countless hours since April of 2011 listening to community members, considering options, and debating alternatives for the future of the District. Thanks to a grant from the Metropolitan Council, we have had the good fortune to be supported in our efforts by a talented group of consulting experts. We have also been fortunate to have the patient support of City staff throughout the process.

Our objective in creating this Development Framework is to build upon the seven Guiding Principles adopted by the City Council. In the pages that follow, we share a vision of how to bring those Guiding Principles to life. While there are many details essential to fulfilling that vision, our goals can be summarized as efforts to:

1. Create a place with a unique identity announced by signature elements like:

- A central commons on the Public Works site with indoor and outdoor public space that connects the civic cornerstones of the District and serves the neighborhood and community needs;
- A "gateway" at Highway 100 that announces the District as a special place, using elements like an iconic pedestrian and bicycle bridge spanning Highway 100; and
- An innovative, cutting-edge approach to 21st-century sustainability.

2. Completely rethink and reorganize the District's transportation infrastructure to:

- Make the District accessible and inviting to pedestrians and cyclists;
- Create connections between the different parts of the District;
- Maintain automobile-friendly access to convenience retail;
- Create separate pathways for "pass-through" and "destination" automobile traffic; and
- Preserve future transit opportunities provided by the rail corridor in a way that ensures that the kinds of opportunities pursued in the future are consistent with the character we envision for the District and provide benefit to the surrounding neighborhood.

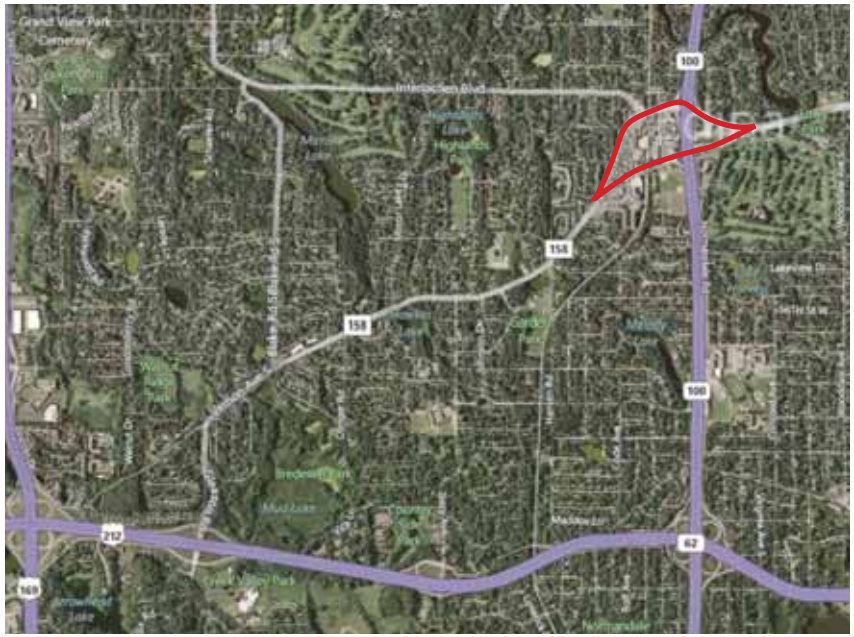
3. Leverage public resources to make incremental value-creating changes that enhance the public realm and encourage voluntary private redevelopment consistent with the vision that improves the quality of the neighborhood for residents, businesses, and property owners.

This Development Framework makes substantial progress in charting the path to be followed in redeveloping the GrandView District. By creating a vision that meets the seven Guiding Principles, it provides guidance to city officials, residents, business and property owners, and developers as opportunities for change emerge in the District. To ensure that the future redevelopment of the District is consistent with the vision articulated in this Framework, we recommend that it become part of the City's Comprehensive Plan.

We want to be clear, however, that we recognize that the Framework (like the Comprehensive Plan) provides broad direction rather than detailed requirements. This Framework is intended to be a vision of the future rather than a blueprint. Achieving the vision will require, among other things:

- A feasibility study that examines the costs and resources available to bear those costs;
- An examination of the height and density necessary to make the vision financially feasible while ensuring that it results in the human scale and neighborhood character that is the essential to the Framework;
- Developing a strategy to allow for a vibrant business and residential community by managing the mix of retail, office, residential, and public uses of land while maintaining the currently successful neighborhood service and convenience character;
- A determination of a range of possible housing choices that support the character and experience of the District.
- A community building/public green programming group should work to determine appropriate program and uses.

We discuss these and other "next steps" in the Implementation section. Consistent with the "community-led" spirit of the initial stages of this process, we recommend that these "next steps" include active participation by community members, support of staff, and leadership from the City Council.



Study Area Location

Guiding Principles

The Seven Guiding Principles

1. Leverage publicly-owned parcels and civic presence to create a vibrant and connected District that serves as a catalyst for high quality, integrated public and private development.

2. Enhance the District's economic viability as a neighborhood center with regional connections, recognizing that meeting the needs of both businesses and residents will make the District a good place to do business.

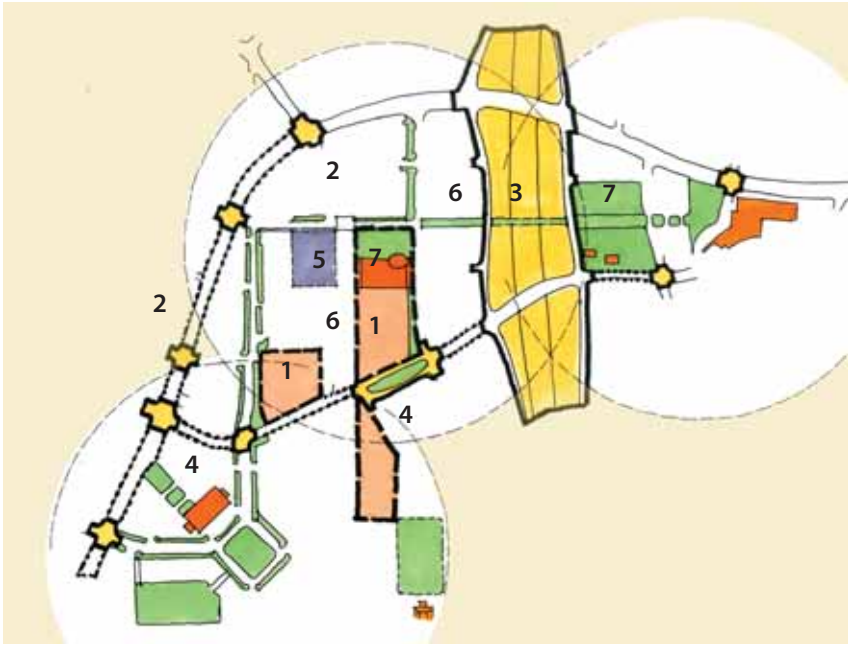
3. Turn perceived barriers into opportunities. Consider layering development over supporting infrastructure and taking advantage of the natural topography of the area.

4. Design for the present and the future by pursuing logical increments of change using key parcels as stepping stones to a more vibrant, walkable, functional, attractive, and life-filled place.

5. Organize parking as an effective resource for the District by linking community parking to public and private destinations while also providing parking that is convenient for businesses and customers.

6. Improve movement within and access to the District for people of all ages by facilitating multiple modes of transportation, and preserve future transit opportunities provided by the rail corridor.

7. Create an identity and unique sense of place that incorporates natural spaces into a high quality and sustainable development reflecting Edina's innovative development heritage.



Principles Related to the Concept Diagram

1. Leverage publicly owned parcels
2. Meet the needs of businesses and residents
3. Turn barriers into opportunities
4. Pursue logical increments; make vibrant walkable and attractive
5. Organize parking; provide convenience
6. Improve movement for all ages; facilitate multiple modes of movement
7. Identity and unique sense of place; be sustainable and innovative

Summary of Participation Process

The Steering Committee and Executive Committee have worked closely with the Consulting Team to facilitate a process that focused on key issues, opportunities, and recommendations.

The process worked with the Steering Committee that met on a regular basis to guide the Consulting Team. A sub-committee of Work Groups addressed Land Use/Community Design, Community Needs/Public Realm, Transportation/ Infrastructure and Real Estate/Finance. These groups put an incredible amount of effort into initial background information and research, definition of issues, and discussion about ideas and options.

A key component of the project was a series of Community Workshops held in September, October and November, 2011, that hosted a range of community stakeholders either in interviews, focus groups, program meetings and at public meetings.

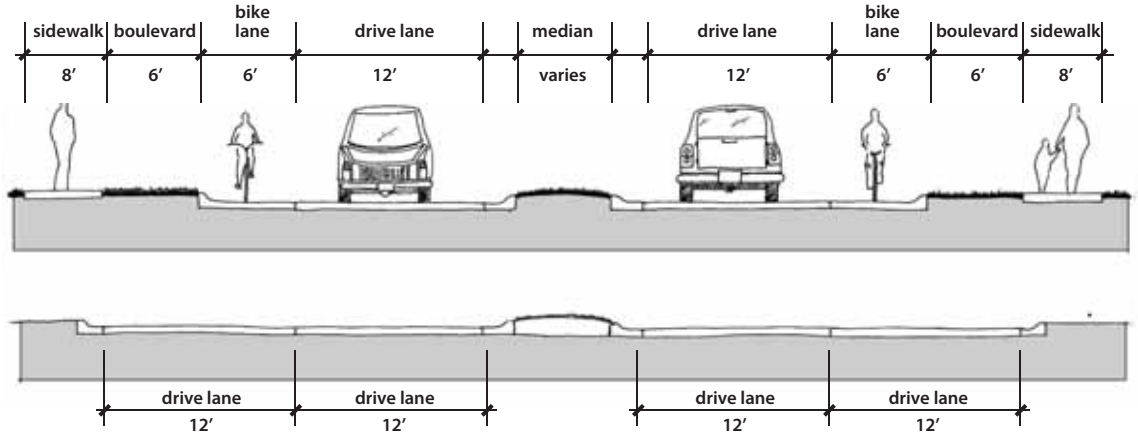
The community participation process included these primary groups of participants: Steering Committee, Executive Committee, work groups, City staff, focus groups (land owners, neighborhoods, public officials, school district, institutions, city departments, business operators, and others as identified during the process), Plan Commission members, City Council members and the Mayor.

The Public Participation Process: The public participation process included Steering Committee meetings, work group meetings, public meetings, focus groups meetings, and program groups meetings throughout the fall of 2011.

Transportation

Vernon Avenue Right-Sizing

South of the Interlachen intersection, Vernon Avenue would be reconfigured into a three lane, divided section that would better accommodate local traffic movement, provide a dedicated bike lane, and capture some of the ROW for pedestrian improvements and street crossings.



Proposed Section for Vernon Avenue

Existing Section for Vernon Avenue

Vernon Avenue Looking South: A new three lane section would allow additional space for bikes and pedestrians, and provide controlled left turn lanes.

GrandView District

Small Area Guide Plan Process

Report to Planning Commission and City Council

December 2010

Beginning with a kick-off meeting on April 8, 2010, the CAT met 10 times in a 20-day period during the months of April and May 2010 to study the site and the surrounding area. They determined that the study area should encompass the commercial node at Highway 100 and Vernon, as well as the City Hall campus across Highway 100. During the process (which is described in greater detail later in this report), the CAT, TAC and Design Team members walked the study area, and looked at potential areas of change, transportation challenges, pedestrian access, and other development issues. By the end of the process, the CAT had developed a set of seven guiding principles to define the future of the Grandview District. These guiding principles were shared with the City Council in May 2010.

PROCESS

As mentioned above, the process leading to the adoption of the seven guiding principles was a compressed one. It began with a kick-off meeting on April 8, 2010 and finished with a Refinement Meeting when the CAT voted on the seven Guiding Principles on April 28, 2010. Presentations summarizing the work were subsequently made to the Planning Commission on April 29, 2010 and to the City Council on May 19, 2010. Follow up meetings were held on June 29, 2010 and September 22, 2010. This Report was formally approved by the CAT in November of 2010. What follows is an overview of what transpired at the meetings held in April and May of 2010.

Meeting #1 – Kick-off Meeting

On April 8, 2010 the Kick-off meeting was held. The meeting included an introduction of the process, a collection of initial ideas, and the selection of the CAT members. The process was introduced by Michael Fischer, Kevin Staunton and Michael Schroeder. Mr. Fischer, the Chair of the Planning Commission, had appointed Mr. Staunton to convene the kick-off meeting and Mr. Schroeder to lead the Design Team. Initial ideas were collected from attendees by asking them to write their ideas down and post them on a large sticky-board.

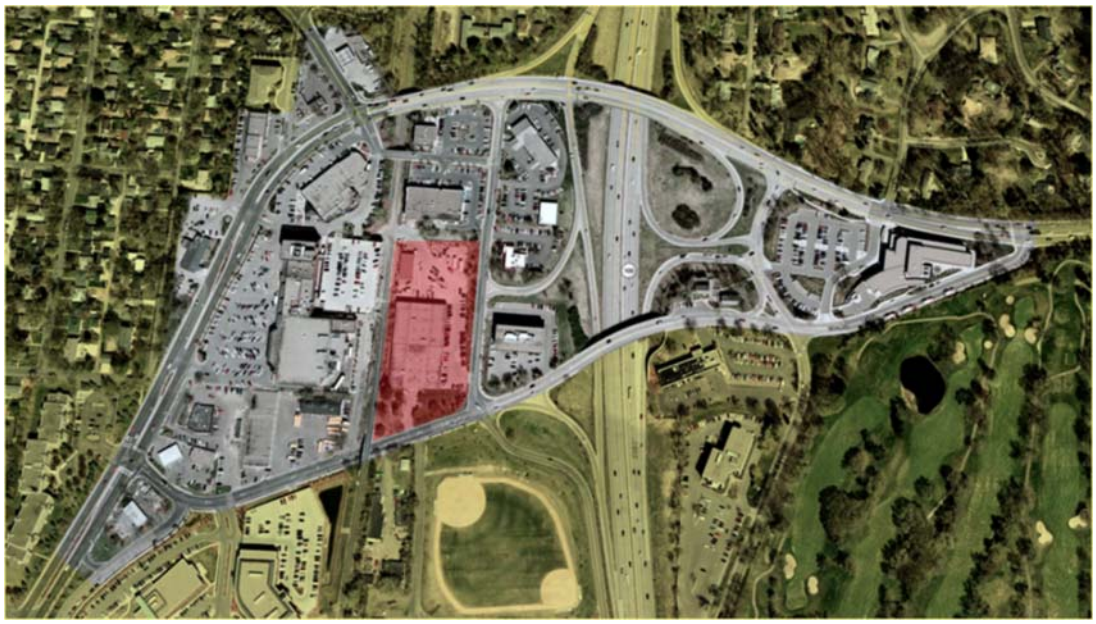
The selection of the CAT members was perhaps the most unusual part of the process. Approximately half of the CAT members were appointed by virtue of their positions on various city boards or commissions or status as business or property owners in the area. The remaining members of the CAT were selected by the members of the public who attended the kick-off meeting after members of the public caucused in 4 groups representing the four geographic quadrants of the City. Ultimately, members of the public attending the meeting appointed four "quadrant" representatives and 5 "at-large" representatives to the CAT.

Members selected to the CAT were as follows:

Representative of:	
Northwest Quadrant	Kim Montgomery
Northeast Quadrant	Steve Buss
Southwest Quadrant	Sue Davison
Southeast Quadrant	Gene Persha
At large	Andy Brown
At large	Lisa Diehl
At large	Larry Chestler
At large	Joann Olsen
At large	Greg Domke
Business Owner	Bob Shadduck
Business Owner	Linda Odell Cowles
Property Owner	Nancy Grazzini-Olson
Heritage Preservation Board	Chris Rofidal
Planning Commission/CAT Facilitator	Kevin Staunton
Energy & Environment Commission	Michael Platteter
Transportation Commission	Josh Sprague
Parks Commission	Ellen Jones
Edina School Board	Brian Hedberg

Meeting #2 – Organization and Site Tour

On April 10, 2010, a meeting was held to select the CAT chair and to tour the GrandView District. The meeting concluded with developing boundaries of the District, a debriefing of what the CAT viewed on their tour, discussed potential issues and planning for upcoming meetings with developers and business/property owners.



Meeting #3 – Developer Roundtable

On April 12, 2010, a meeting was held with four developers that live and have done work in Edina. The purpose was to gain insight and perspective of developers as to how to develop the public works site and the potential of future development in the area.

Meeting #4 – Business and Property Owner Roundtable

On April 14, 2010, a meeting was held with business and property owners within the GrandView District. The purpose was to gain insight and perspective of those who work and own property within the District.

Meeting #5 – Community Meeting

On April 21, 2010, a community meeting was held to identify issues; assess the susceptibility to change in the District; consider ideas for redevelopment of the area; and develop a list of ideas for a name for the District.

Meeting #6 – CAT Summary Meeting

On April 22, 2010, the CAT held a meeting to formulate the information gathered so far, with an emphasis on information gathered at the Community meeting. Important issues and concepts were identified from information gathered at previous meetings and organized into seven principle categories.

The result was the CAT members agreeing on the following set of principles:

1. Leverage Public Ownership
    - City Government Center – Library, City Hall, Senior Center
    - Public Gathering

2. Neighborhood Center with Regional Connections
    - Retail business opportunity and support

- Meet business needs
- Movement
- Diverse goods and services
- Economic vitality
- Business/Resident Synergy

3. Turn barriers into Opportunity – Work through barriers not around them
    - School Bus Site
    - Rail Line
    - Highway 100
    - Transportation Corridors
    - Topography

4. Design for Present and Future
    - Functionality
    - Density

5. Parking
    - Could fit multiple categories

6. Movement
    - Pedestrian Friendliness
    - Better Connectivity
    - Promote Multimodal Transportation

7. Design/Identity
    - Innovative Design
    - Aesthetics
    - Natural Space
    - Attractive Space

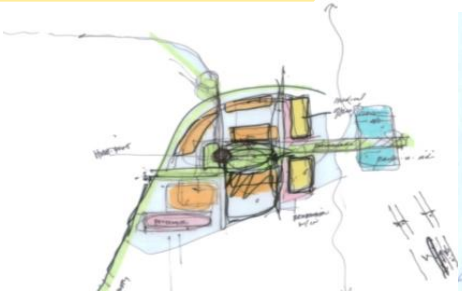
- Identity
- Image
- Gateway
- Promote Sustainability

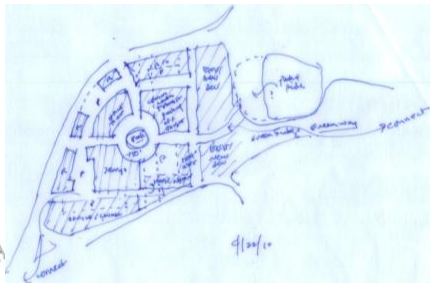
Meeting #7 – CAT Communication to the Design Team

On April 23, 2010, the CAT communicated the seven principles to the design team. Additionally, Jack Broz, Transportation Consultant to the TAC, presented an overview of ideas to the group on how to deal with the transportation issues in the District.

Meeting #8 – Design Charrette

On April 23 and April 24, 2010, the Design Team held a Design Charrette at the Edina Senior Center. After the close of the CAT Communication Meeting, the Design Team began sketching ideas based on the seven principles presented by the CAT. The design work continued again the next morning, and resulted in a draft articulation of the principles and an illustration of potential application of the principles.



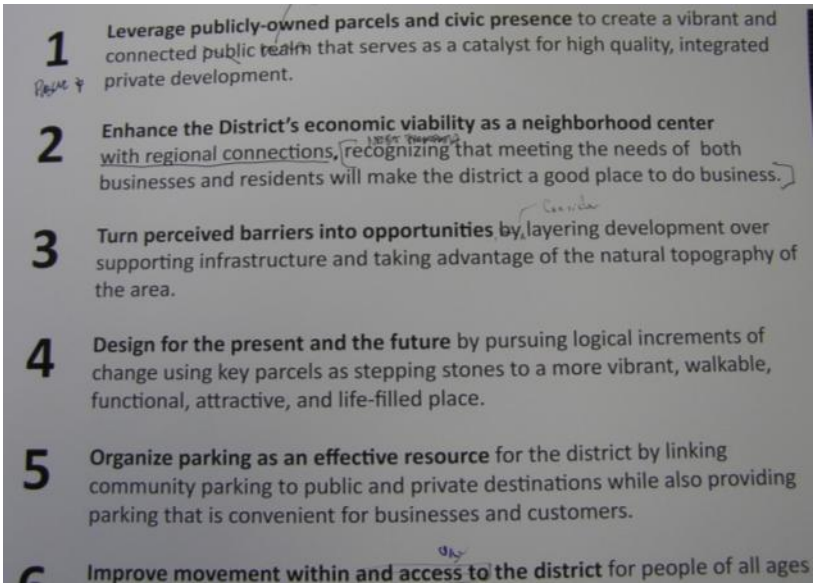


Meeting #9 – Open House

On April 26, 2010, an Open House was held at City Hall to display all of the work that had gone on up to this point. The visual display included a summary of each meeting. CAT Chair Kevin Staunton and Design Team Leader Michael Schroeder presented a summary of the process and a description of the results coming out of the design charrette. Mr. Staunton described the process followed by the CAT and walked those in attendance through the draft list of the Guiding Principles. Mr. Schroeder then explained the illustration the Design Team had created during the design charrette, noting that it was intended as one example of how the Guiding Principles might be implemented.

Meeting #10 – CAT Refinement Meeting

On April 27, 2010, the CAT met to review and finalize the Guiding Principles and the illustration created by the Design Team. The CAT discussed each draft Guiding Principle, making edits to some to ensure that they accurately reflected the intent of the CAT. The CAT then voted unanimously to approve the revised list of seven Guiding Principles. After approving the Guiding Principles, the CAT considered the graphic created by the Design Team. It emphasized that the graphic should be viewed as one possible way in which the Guiding Principles could be implemented. The CAT then approved the graphic illustration to be used as an example — not a blueprint — of how the District might develop in a manner consistent with the Guiding Principles."



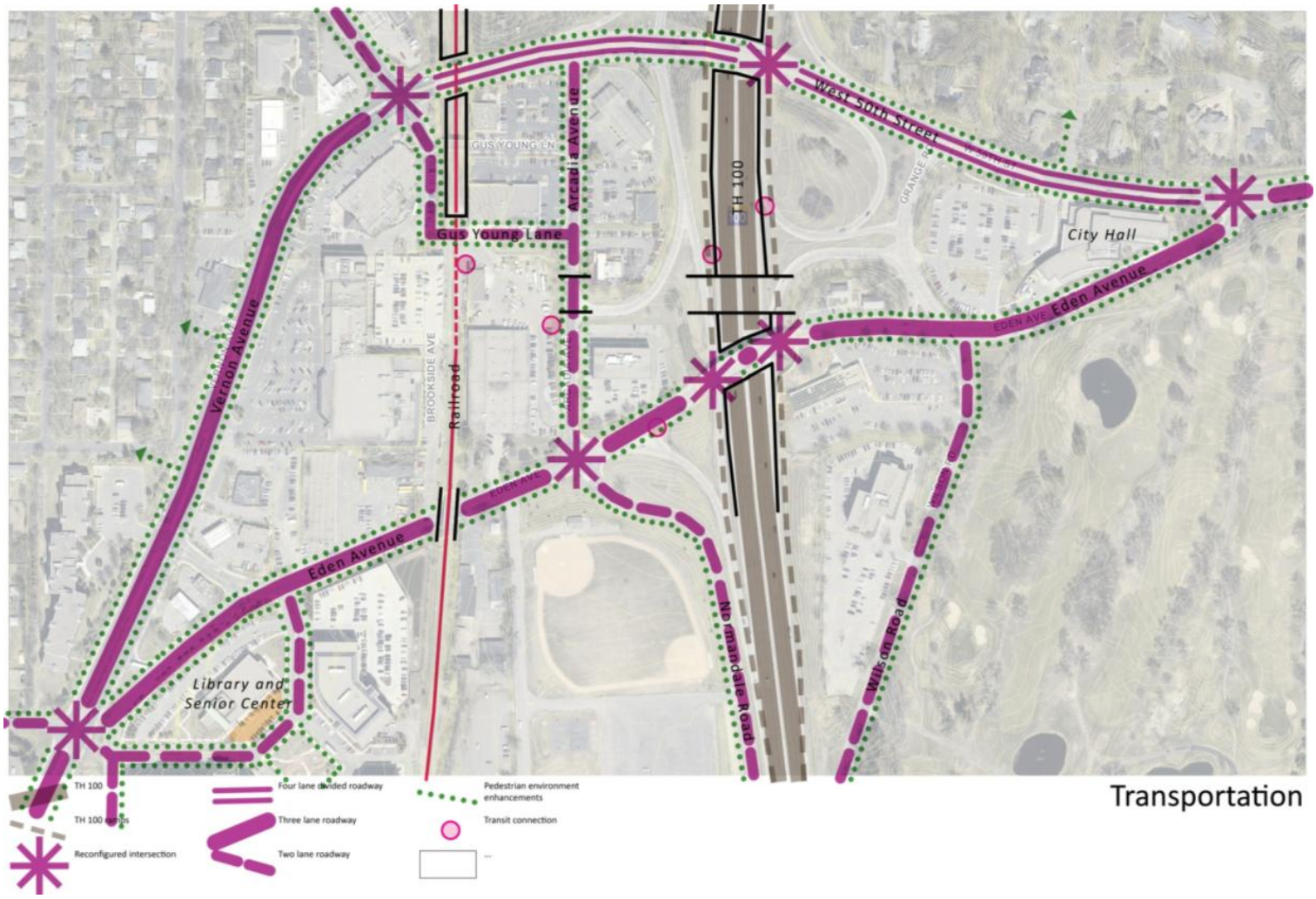
REPORT TO THE CITY COUNCIL

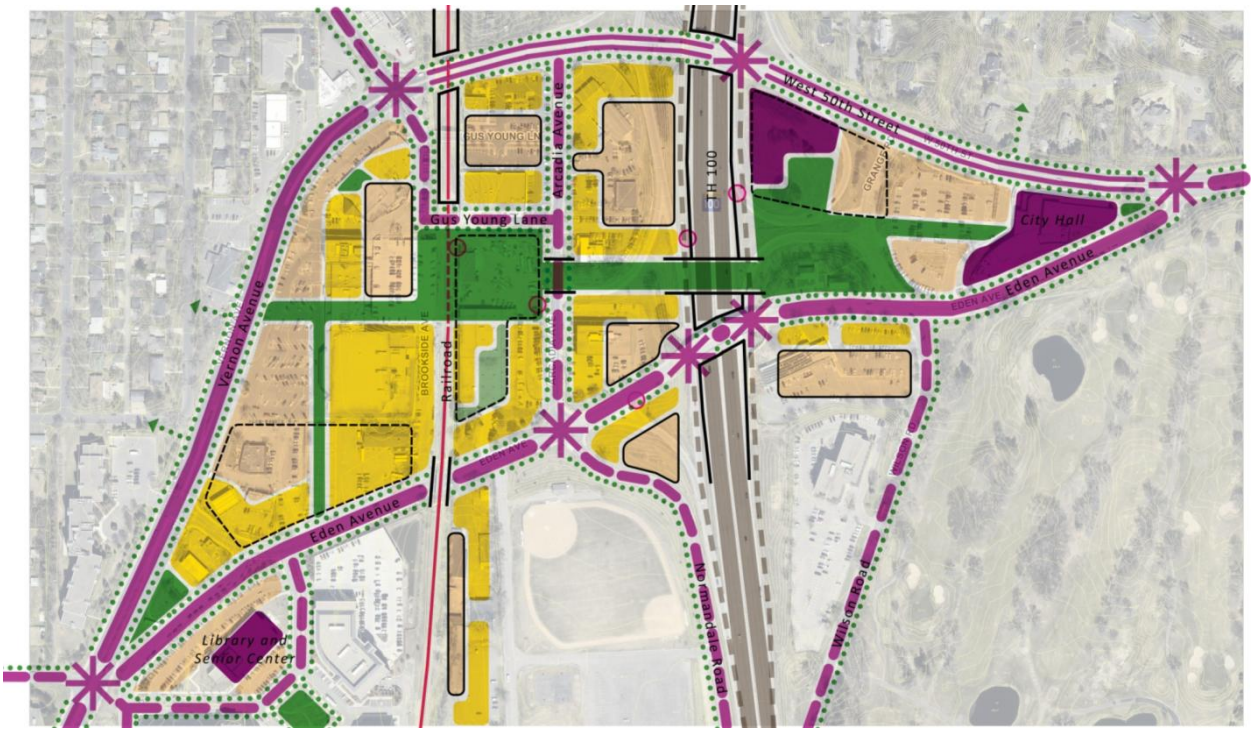
After updating the Planning Commission on its work at the Commission's April 28, 2010 meeting, CAT and Design Team representatives met with the City Council at a Council work session on May 19, 2010. Kevin Staunton and Michael Schroeder made a presentation to the Council that included an overview of the process and an explanation of the Guiding Principles that were developed. The presentation of the Guiding Principles included bullet point explanations created by Mr. Staunton and graphics created by Mr. Schroeder. The bullet points and graphic illustrations are not part of what the CAT adopted at its April 27 meeting but were, instead, intended to help explain and illustrate the intent behind the Guiding Principles. They appeared in the presentation as follows:

Illustrative Vision

Principle 6 **- Improve movement within and access to the district for people of all ages by facilitating multiple modes of transportation, and preserve future transit opportunities provided by the rail corridor.**

- Currently, access to and movement within the District is almost exclusively accomplished via motor vehicles and discourages pedestrian and bicycle use.
- For a variety of reasons, the existing transportation infrastructure creates traffic issues and acts as a barrier to pedestrian and bicycle access to the District.
- The District has great potential as a regional transportation hub, including the future transit opportunities provided by the rail corridor.
- Future development should create better access to and movement within the District and facilitate multiple modes of transportation.





Demonstration of principles as a concept for evolution of the GrandView district

IMPLEMENTATION

After the CAT made presentations to the Planning Commission and City Council, the City Council expressed interest in receiving a formal report. Before this Report could be completed and approved, the CAT learned about the potential for funding for a future implementation phase of the process. Since the deadline for the grant funding was to expire before this formal Report could be completed and approved by the Council, the City Council authorized staff to apply for a Livable Communities Demonstration Account (LCDA) grant in July. The grant would defray costs associated with the development of a Small Area Plan which would include the following items:

- Market Analysis
- Community Needs Analysis
- Transportation Analysis and Plan
- Redevelopment Phasing Plan
- Public Participation Plan
- Financial Analysis of Redevelopment Plan

If awarded, the grant would likely cover all costs associated with the development of the Small Area Plan, outside of in-kind staff time needed for the process.

The grant application envisioned that a team of staff and hired consultants would be responsible for fulfilling each of the provisions. This team would then draft a report, which

would be reviewed by the Planning Commission, and then forwarded to the City Council for consideration. The Community Advisory Team would continue to advise the Planning Commission on implementation strategies.

The Small Area Plan would help to inform and drive change in the district over a period of several years. It would serve as a guide to developers and landowners who may want to make changes to their property.

The Small Area Plan would also be officially incorporated into the City's Comprehensive Plan.

Finally, the City would use the Plan to help communicate with the community about the future of the district.

RECOMMENDATION/CONCLUSION

As it submits this Report, the CAT recommends that:

1. The City Council accept and approve the Report.

2. The City Council adopt the Guiding Principles in this Report as the foundation for development of a small area plan for the GrandView District.

3. The process of developing a small area plan for the GrandView District be led by a community-based advisory team that includes members of the current CAT and Design Team, chosen through an open process similar to that used to form the initial Community Advisory Team.

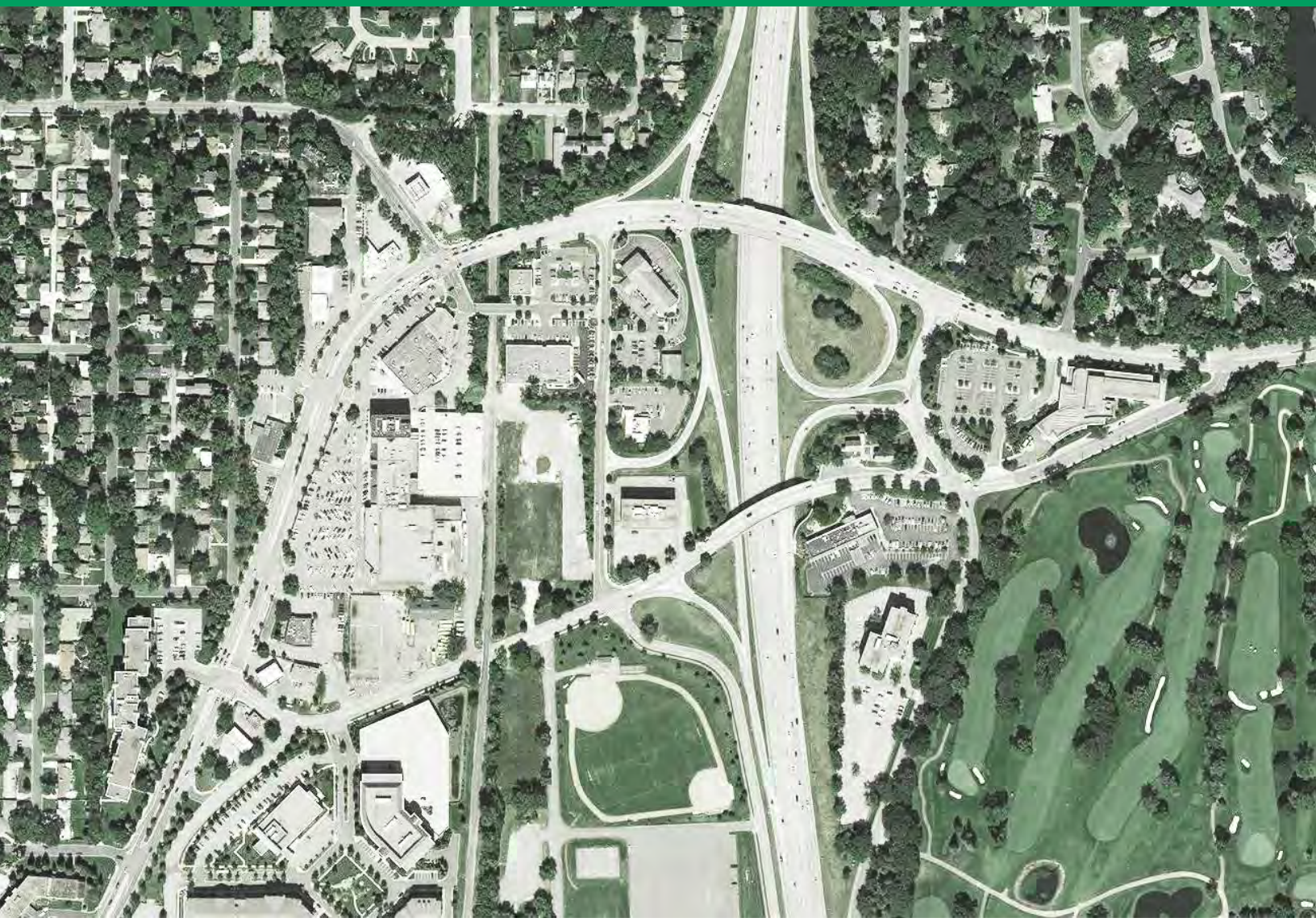
4. The City retain ownership of all city-owned public property in the GrandView District at least while the planning process continues and potentially beyond depending upon the results of the small area planning process.

City of Edina

Grandview District

Transportation Study

August 31st, 2016



PERFORMANCE DRIVEN DESIGN.

PLANNING + DESIGN

Executive Summary

The Grandview District evolved and changed dramatically throughout its history. Recently, the District has been studied in numerous processes, culminating in the "Grandview District Framework Plan." That plan recommended a transportation study be conducted in order to fully understand the impacts and tradeoffs of proposed redevelopment and network changes on all modes of travel. This study addresses that recommendation and uses the Framework Plan as a starting point for understanding potential change in the area. However, this study aims to do more than provide a review, alternatives, and recommendations; it also seeks to align itself with the culture, possibility, and potential for the District to be rejuvenated into a place where Living Streets meets everyday life.

To that end, this document describes a series of recommendations for all modes of transportation, which could be implemented within a range of timeframes. Which general timeframe a specific project appears in depends on contextual issues such as key safety improvements, opportunities related to potential related projects, timing of planned infrastructure improvements, and scale of required planning and funding related to a particular proposal. These enhancements were analyzed for impacts to all modes of transportation and are summarized as follows:

Short Term Changes (0-5 Years)

- Pedestrian crossing and intersection improvements for Vernon and Eden Avenues with controlled intersections, adjusted signal timing, and/or striping
- Adjustments to signal timing and driveway access at the intersection of Interlachen Boulevard and Vernon Avenue
- New direct access from Eden Avenue to Jerry's for all modes
- Conversion of two off-ramps from Highway 100 from existing free-rights to proposed standard signal-controlled right turns
- Reconfiguration of Arcadia Avenue along the former Public Works site to accommodate pedestrians and bikers

Mid Term Changes (5-15 Years)

- North part of Arcadia Avenue converted to a shared street
- Vernon and Eden Avenues converted to support bikes, pedestrians, greenspace, and traffic management
- Add infrastructure to support bicycling on Eden Avenue over Highway 100
- Continued simplification of Highway 100 on-ramps; new northbound access at 50th Street
- Reopen a signalized intersection at 53rd Street and Vernon Avenue
- Enhanced bus stops on Vernon and Eden Avenues
- New frontage road, providing southbound access to Highway 100 and access to development parcels on west side of Highway 100
- Improve parking options at municipal ramp and current School District site, with associated policy improvements

Long Term Changes (15-30 Years)

- Complete pedestrian and bicycle connection along 50th Street, across Highway 100
- New pedestrian and cyclist connection over Highway 100 to City Hall
- New frontage road providing northbound access to Highway 100 and access to development parcels on east side of Highway 100
- Reconfiguration of Eden Avenue, Lind Road, and the library parking lot with improvements for all modes
- Direct connection for high-capacity transit line at a new transit hub on the former Public Works development site
- New District parking options incorporated into the former Public Works site, with associated parking policy

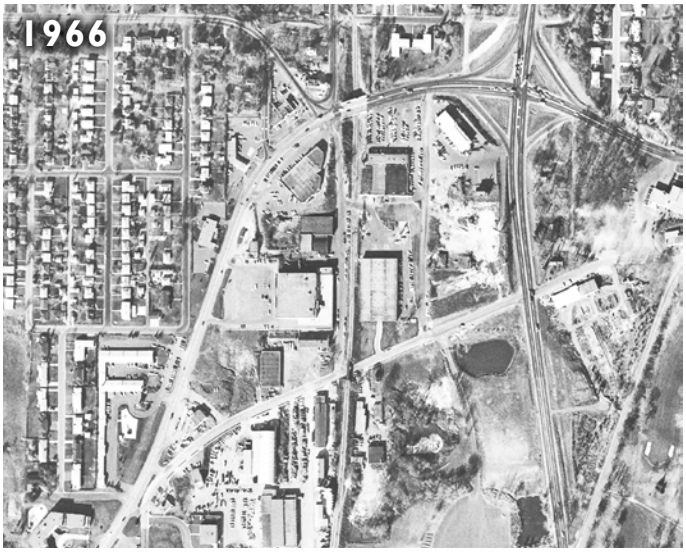
This plan also includes a brief overview of a Far Term Plan that considers the possibility of "lid" over Highway 100. The primary transportation implication of that degree of density, is that it would require implementation of a high-capacity transit system.

Existing Conditions

The Grandview District is an important node of mixed commercial, office, and residential uses between Vernon Avenue and Eden Avenue on either side of Highway 100 (Figure 1.1). It has evolved significantly over its history, from farming to a hub of commercial activity, taking advantage of its access to road and rail transportation networks (Figure 1.2). Formerly, Highway 169 followed the current alignment of Vernon Avenue, making this a critical crossroads of two highways. Even after Highway 169 was realigned, Vernon remained a busy road which has continued to support retail and office uses.

The current character of the Grandview District is described in detail in the Briefing Book (Appendix 1), but a few elements of the transportation system quickly emerged as key to understanding how things work today. First, the District has long been designed for use primarily by automobile traffic. The facilities for bikes and pedestrians are disconnected, uncomfortable, and require safety improvements. Residents are particularly concerned about the difficulty for crossing Vernon Avenue to get to Jerry's Grocery Store, but gaps in the bike and pedestrian network occur throughout the area. This means that even short trips are often conducted by car, rather than by foot or bike, worsening traffic congestion, increasing the need for parking, and decreasing the attractiveness of transit.

Second, there are several areas in the auto transportation network that contribute to difficult circulation patterns. The merge of two on-ramps to southbound Highway 100 has been nicknamed "the death-merge" by motorists. Queuing at Interlachen Boulevard and Vernon Avenue is a source of frustration for motorists and cyclists alike. There are also concerns about speeding traffic on Vernon Avenue, queuing from the drive-through of a coffee shop on Arcadia Avenue, and inadequate or ineffective parking in several locations. In general, there is significant room for improvement throughout the system.



Finally, the public transit system is less desirable and useful than it could be. Existing bus routes are not heavily used and those who would use them struggle with access to nearby parking and with safely and comfortably walking to and from stops. There is also significant interest in supporting passenger rail along the existing freight rail line, but many political and logistical hurdles exist for this proposal. At this time, the Edina Transportation Commission (ETC) is exploring the potential of passenger rail as part of a related but separate planning effort.

Additional information on existing conditions is covered in Appendix 1. This Transportation Study document explores solutions to these and other issues through an interconnected set of proposals in the following chapters.

Project Process

The Grandview District Transportation Study process was intended to build on the progress of previous planning studies. As shown in Figure 1.3, there has been substantial planning for the District in the preceding years. In particular, many residents and stakeholders contributed to the recommendations of the Framework Plan. In particular, that plan described seven guiding principles:

1. Leverage publicly-owned parcels and civic presence to create a vibrant and connected District that serves as a catalyst for high quality, integrated public and private development.

2. Enhance the District's economic viability as a neighborhood center with regional connections, recognizing that meeting the needs of both businesses and residents will make the District a good place to do business.

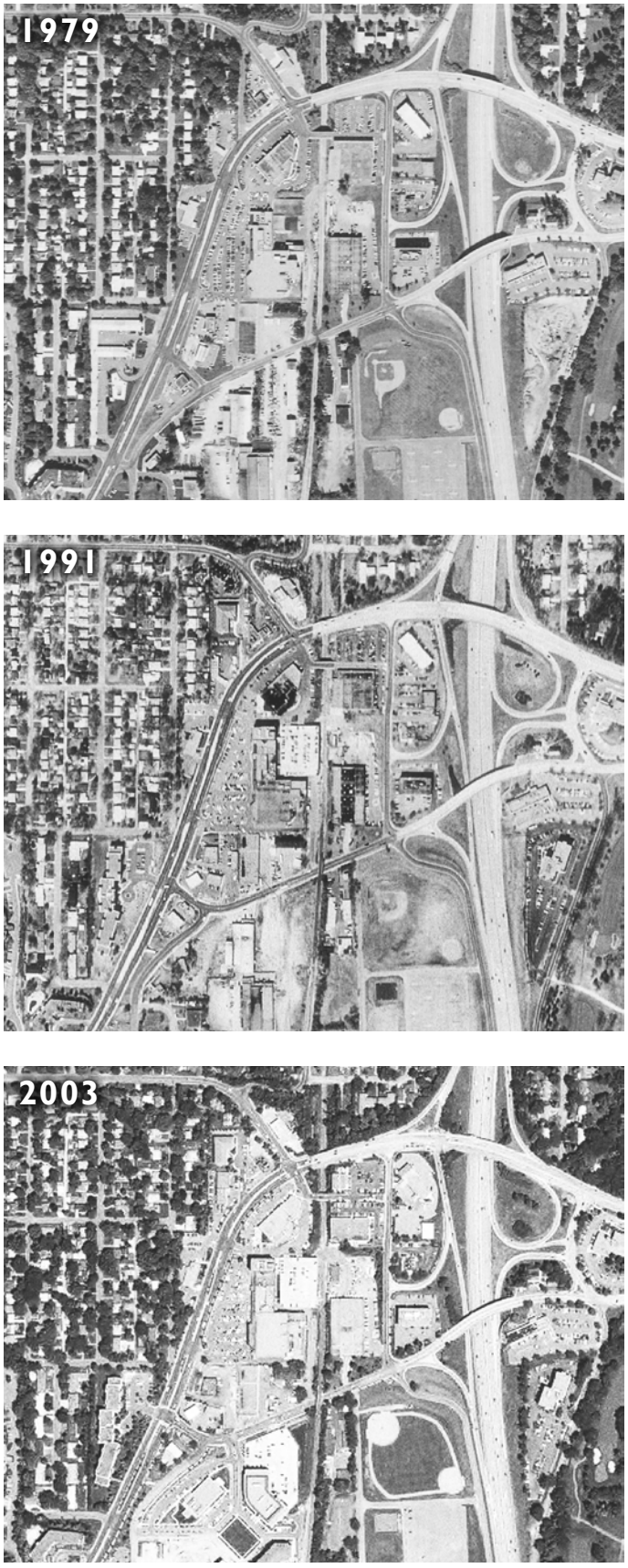


Figure 1.2 Historical aerial photography of the District, from 1947 to 2003. Courtesy of the City of Edina.

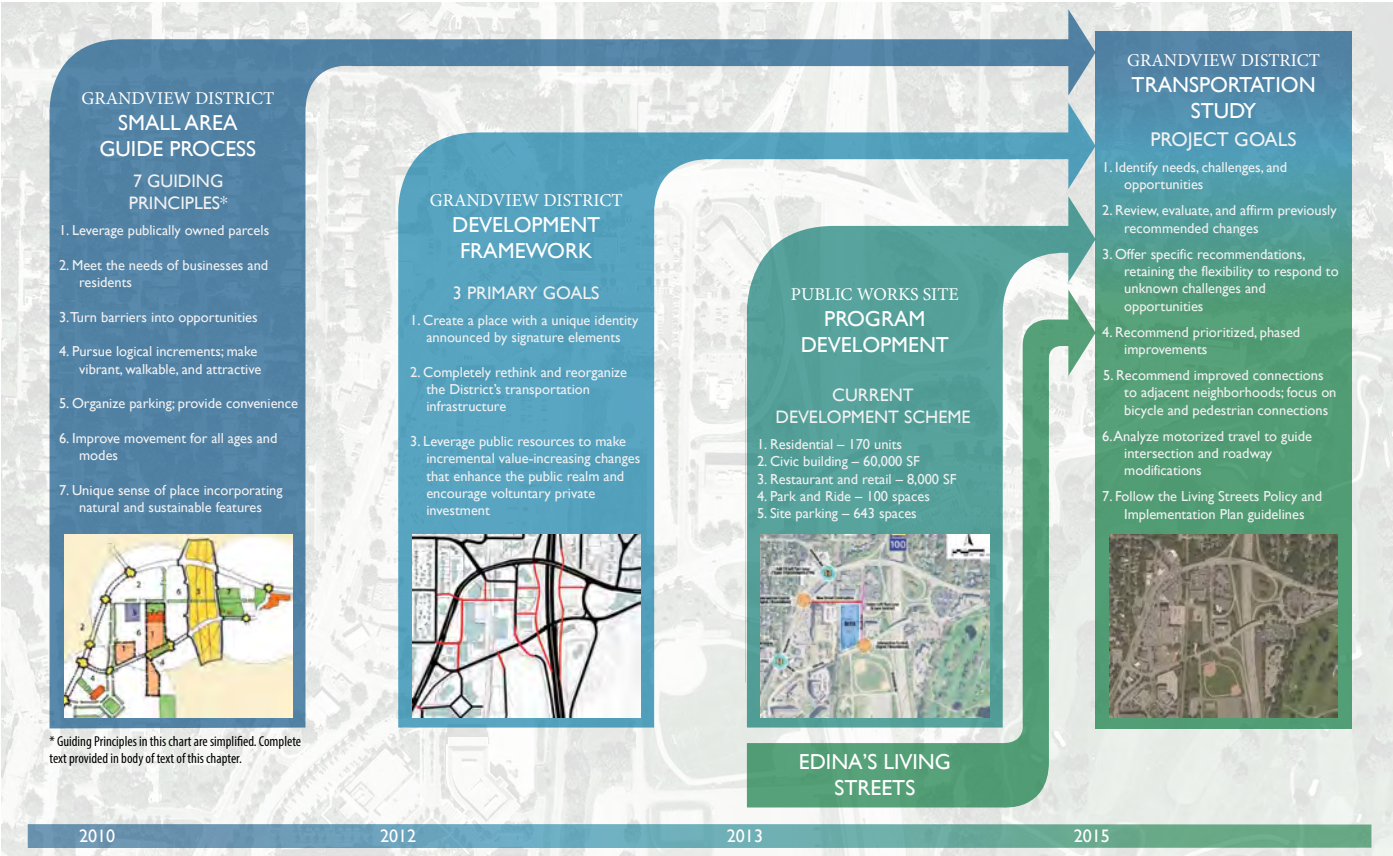


Figure 1.3 Previous planning studies whose results have informed the direction and goals of this transportation study.

3. Turn perceived barriers into opportunities. Consider layering development over supporting infrastructure and taking advantage of the natural topography of the area.

4. Design for the present and the future by pursuing logical increments of change using key parcels as stepping stones to a more vibrant, walkable, functional, attractive, and life-filled place.

5. Organize parking as an effective resource for the District by linking community parking to public and private destinations while also providing parking that is convenient for businesses and customers.

6. Improve movement within and access to the District for people of all ages by facilitating multiple modes of transportation, and preserve future transit opportunities provided by the rail corridor.

7. Create an identity and unique sense of place that incorporates natural spaces into a high quality and sustainable development reflecting Edina's innovative development heritage.

The Framework document both called for the Transportation Study and provided a basis for its assumptions about urban design and redevelopment opportunities. Because of this strong connection, the Transportation Study specifically sought out input from those who had worked on the previous studies, the "Grandview Alumni." Their knowledge and participation formed the core of the public process and were instrumental in the design recommendations made for this report.

The process for the study itself was organized around three phases, each culminating in an intensive week of design and stakeholder engagement. The process was designed to first establish a shared understanding of the project during Convene Week, then explore potential solutions during Imagine Week, and finally review refined solutions during Recommend Week. Each phase is described in more detail, below.

Convene Week

During Convene Week, the design team conducted a site tour (Figure 1.4 and Figure 1.5), analyzed existing conditions, refined the goals of the study, held a public meeting and a focus group meeting with local bike and pedestrian advocates, and presented to both the Transportation Commission and the City Council. In particular, the team used field work and background information to assess the existing transportation network, including street design standards, roadway capacity, parking management, traffic management, transit routes, pedestrian linkages, and bicycle connections.

Based on input from City staff, the team developed four scenarios for analysis:

- Existing conditions
- New development at Edina Comprehensive Plan levels
  - 30 housing units per developable acre
  - 1.5 FAR (Floor Area Ratio)
- New development at potential Framework levels
  - Incorporates Former Public Works Site potential
  - 60 housing units per developable acre
  - 2.0 FAR
  - The Framework Plan does not call for specific redevelopment densities, therefore the analyzed densities reflect the highest foreseeable density possible with the scenarios suggested in that plan, to provide the worst case scenario for analysis.
- New development with a Highway 100 Grandview Green (informally referred to as "the Lid")
  - 120 housing units per developable acre
  - Planning for the Grandview Green has not called for specific redevelopment densities, therefore the analyzed densities reflect the highest foreseeable density possible with the scenarios suggested to date, to provide the worst case scenario for analysis.

During the public meeting, the team presented the initial analysis, along with background on the earlier work done on planning for the District. The attendees then worked through a number of exercises in small groups, aimed at providing applicable local knowledge and establishing key areas for analysis and design. Participants provided substantial information and input and in particular identified the following priorities:

- Consider all modes of movement

Figure 1.4 Existing condition at the north end of Brookside Avenue by the municipal parking ramp behind Jerry's Foods, and west of the railroad corridor. From the design team's site visit, November 2015.

Figure 1.5 Existing condition of Eden Avenue at Arcadia Avenue, showing a lack of pedestrian crossing and sidewalk facilities. From the design team's site visit, November 2015.

- Incorporate Complete Streets/Living Streets
- Reconnect zones within district for all modes
- Transit
  - Bus routes and access
  - Advocacy for Park and Ride
  - Consider passenger rail
- Pedestrian experience
  - Enhance both safety and routing
- Improve experience
- Motorists
  - District parking strategy
  - Reorganize highway ramps
  - Explore street and intersection configurations
  - Consider through-traffic and to-traffic

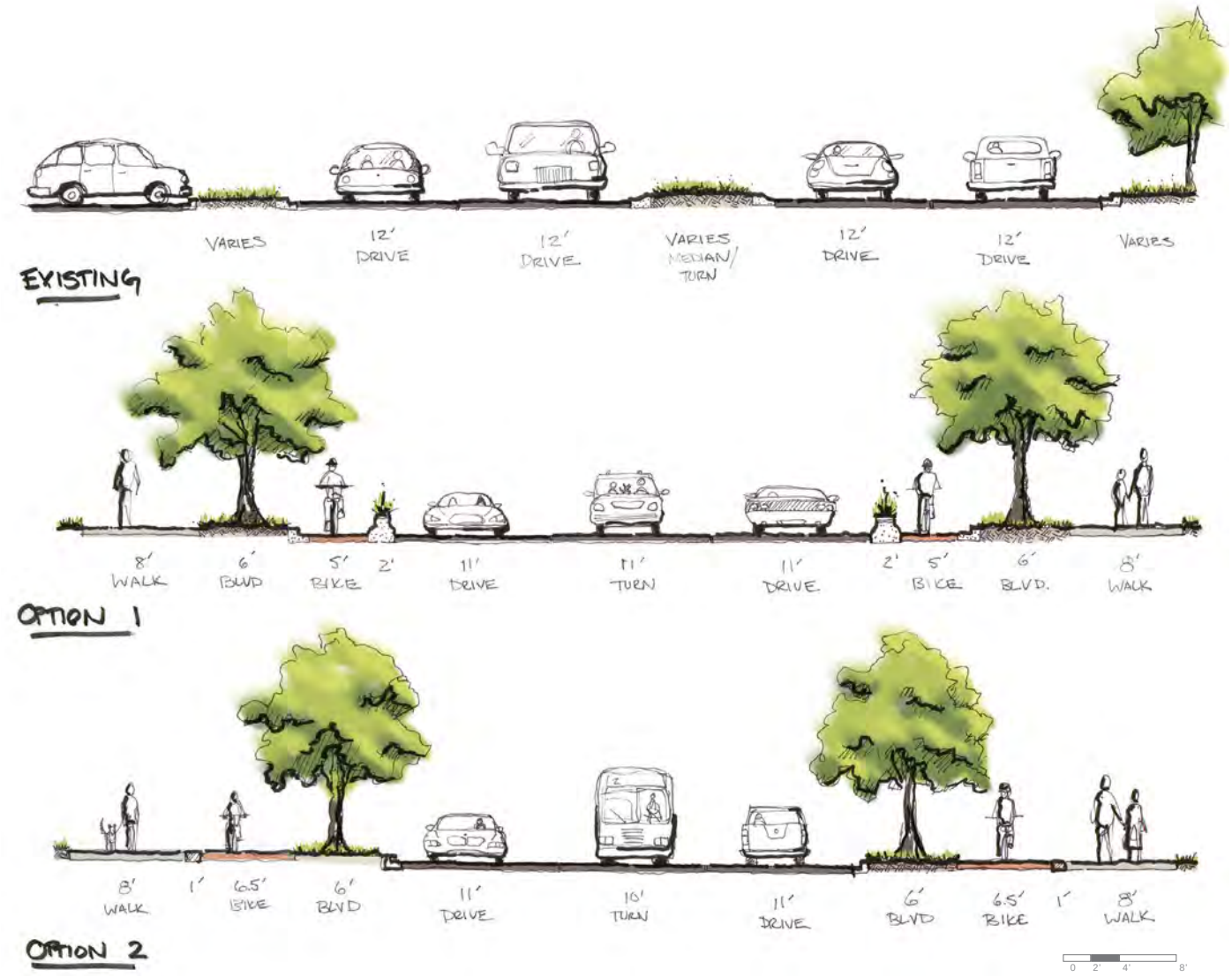


Figure 1.6 Example of proposed solutions and scenarios for Vernon Avenue from Imagine Week design concepts.

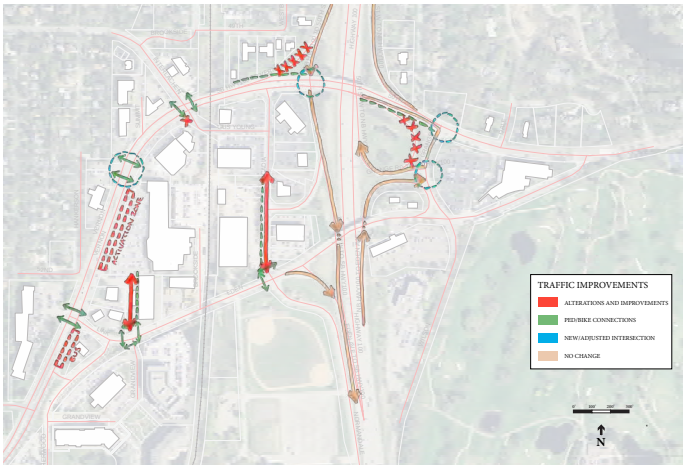


Figure 1.7 Proposed Short Term Changes from Imagine Week.

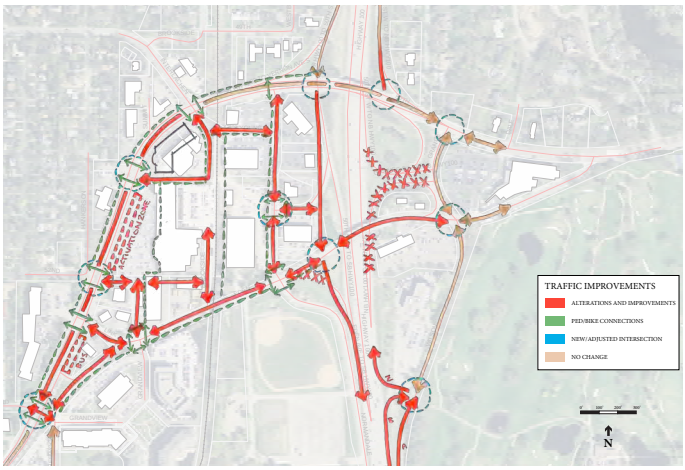


Figure 1.8 Proposed Mid Term Changes from Imagine Week.

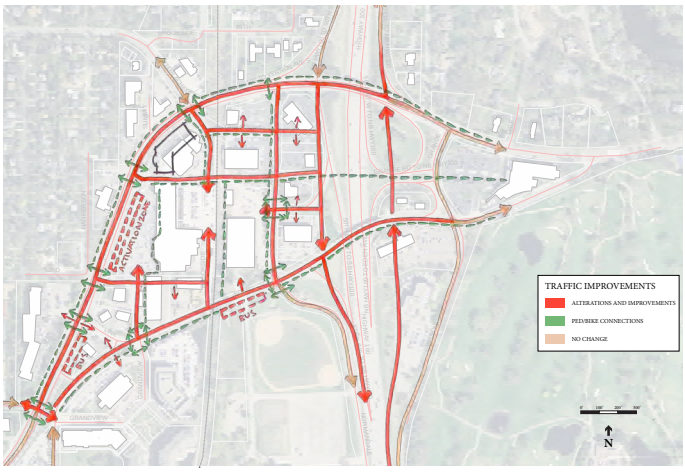


Figure 1.9 Proposed Long Term Changes from Imagine Week.

Following the intensive week, the team also met with a group of local business and property owners to ensure that there was a clear understanding of how the transportation system currently and potentially served their properties.

Finally, the team met with a variety of related agencies, such as staff from Hennepin County, the Minnesota Department of Transportation (MnDOT), Minnehaha Creek Watershed District, railroad staff, and others. Complete notes from those meetings are provided in Appendix 2, but the intent in all cases was to understand the related work being done by those agencies and ensure that we understand their requirements for improvements we might propose. This input, along with the project goals, provided a basis for the work done during later phases of the project.

Imagine Week

During Imagine Week, the team held a design charrette to explore solutions, conducted additional field visits, and once again held a public meeting and presented to both the Transportation Commission and the City Council. During the charrette, the Study Team developed scenarios for the transportation network (Figure 1.6), including envisioning potential solutions based on work done during the analysis phase. The Study Team then verified solutions in the field to ensure that assumptions were accurate and correct. This work resulted in the phased approach described in this document (Figure 1.7 to Figure 1.9).

At the Imagine Week public meeting, the team presented the analysis work done in the Briefing Book (Appendix 1) and explored the phased approach solutions in both a presentation and question-and-answer pin-up review session. The public was very supportive of the improvements in general, and especially the improvements to bicycle and pedestrian safety and access. There were questions about access to particular properties and

about the potential for delay with the reconfigured highway on- and off-ramps. Complete notes are provided in Appendix 2.

Following Imagine Week, there were once again meetings with the local business and property owners and with the related agencies. In addition, the phased approach was developed into a board that was used for "intercepts" at the library, Jerry's grocery store, and Our Lady of Grace Catholic Church. Intercepts provided an opportunity for public stakeholders to review the proposed changes at a time and place that was convenient to them and provide feedback by comment card. Responses were generally positive and only minor modifications to the proposals were suggested.

Recommend Week

During the final week of intensive work, the team held a follow-up design charrette to refine recommendations and graphics and once again held a public meeting and presented to both the Transportation Commission and the City Council. The design charrette was primarily aimed at discussing and resolving key areas of concern and areas where feedback received from the intercept events or other input had been provided more recently.

At the Recommend Week public meeting, the team presented the refined phased approach, highlighting areas that had changed since Imagine Week. Questions and input were encouraged throughout the presentation and opportunities to comment directly on the boards with post-it notes and comment cards

Goals

The role of this Transportation Study was established, based on the Framework Plan recommendations, in advance of the project initiation. The goals were reviewed and were still broadly supported by City staff and stakeholders and therefore were not significantly altered.

The goals of this Transportation Study are to:

- Identify needs, challenges, and opportunities based on variable density scenarios
- Review, evaluate, and affirm recommendations from the Grandview Framework Plan
- Offer specific recommendations, retaining the flexibility to respond to unknown challenges and opportunities
- Recommend prioritized, phased improvements
- Recommend improved connections to adjacent neighborhoods; focus on bicycle and pedestrian connections
- Analyze motorized travel to guide intersection and roadway modifications identified in the Development Framework
- Follow the Living Streets Policy and Implementation Plan guidelines

These goals acted as a framework for decisions that were made throughout the study. More detailed and specific goals became evident for particular aspects of the transportation system and for different focus areas. Those are described in Chapters 2 and 3.

Figure 1.10 Example of discontinuous pedestrian facilities and unmarked crosswalks within the District.

Figure 1.11 Vernon Avenue is currently a difficult barrier for pedestrians navigating the District.

were provided. Once again, the response was very positive and changes were minor.

Following Recommend Week, there were once again meetings with the local business and property owners and with the related agencies. Because there had been a substantive change to the intersections of Vernon Avenue, Eden Avenue, and Sherwood Road, which would affect access for residents in the Grandview neighborhood, and because no residents had been at the public meeting, a special meeting was held just with those residents. Residents were initially very concerned about access to their neighborhood since they only have one access point, but in general seemed more comfortable with the proposed solutions following that discussion. Follow-up meetings were also held with representatives from Edina's emergency services, Jerry's, and Our Lady of Grace to ensure their understanding of the proposed solutions.

Minor modifications were made based on all the feedback received during and after Recommend Week, which is represented in the plans shown in this document.

Metrics

While a more complete discussion of the transportation analysis follows later in Chapter 4, this section describes the Study Team's approach to developing and evaluating the Grandview District scenarios. Since a goal of the transportation study is to determine whether and how well the proposed transportation network could serve the Framework Plan vision, the Study Team outlined a set of goals and evaluation metrics that address multi-modal, and in fact multidisciplinary, evaluation criteria. It is important to recognize that this study explored relatively high density assumptions, not because it advocates for or against those levels of density, but because it is necessary to analyze the transportation system under as much stress as we think is foreseeable and then determine if it can handle those loads and which improvements might help the system to handle those loads more effectively should they occur.

The Study Team began by examining the ultimate vision described in the Grandview District Framework Plan, which is intended to unfold over many years. The team also acknowledged, however, that improvements would not unfold all at once, but over time, and are tied to safety, mobility, or development needs

(Figure 1.10 and Figure 1.11). The transportation investments recommended in the Framework Plan were supportive of the vision outlined in the Framework document, but needed to be grouped and analyzed in a manner that would facilitate their implementation. With this recognition in mind, it became necessary to develop scenarios that were not necessarily alternatives to one another, but instead that built upon each other cumulatively in order to suggest how they might progress as development advances.

The scenarios were refined during Recommend Week, based on workshops between the team and City staff, considering feedback from the public during Imagine Week and other outreach events. The scenarios for analysis defined by the Study Team are outlined in Figure 1.13.

The transportation improvements outlined and analyzed in this document are intended to support the level of development envisioned in each scenario. It is not necessary to realize the full scale of development envisioned in each scenario; rather, the scenarios offer guidance on the character and level of transportation investment that might be required to support the corresponding level of investment. The following section describes the scenarios, including the scale of development, timeframe for such development, and key enhancements that could be delivered to support such development.

Figure 1.12 Example of an unmarked crosswalk within the District.

In developing and evaluating the scenarios, the Study Team sought to incorporate, understand, and address both the technical needs of the network as well as community, stakeholder, and agency concerns. The chosen evaluation metrics are intended to inform a discussion of trade-offs where they exist, so that all involved have an understanding of network performance for all users, rather than prioritizing any one type of travel or development. Finally, the metrics were designed to be measurable across the various scenarios, so that staff and stakeholders could understand how the network would perform and change over time. With all of this information compiled together, the

Scenario	Timeframe	Development Scale
Existing Conditions	Current	Current
Existing Conditions + Early Action Items	0-2 years	Current
Short Term Changes	2-5 years	30 dwelling units per acre
Mid Term Changes	5-15 years	60 dwelling units per acre
Long Term Changes	15-30 years	120 dwelling units per acre

Figure 1.13 Scenarios for analysis in the Grandview District Transportation Study.

Figure 1.14 Example of discontinuous pedestrian facilities and unmarked crosswalks within the District. Oversized highway on- and off-ramps occupy a large amount of space that could be better utilized if re-allocated into developable parcels.

parties could best understand what to expect of the network and assess whether and when to pursue changes.

To this end, the Study Team proposed a combination of metrics that demonstrate changes in safety, mobility, connectivity, and access. The metrics evaluated include:

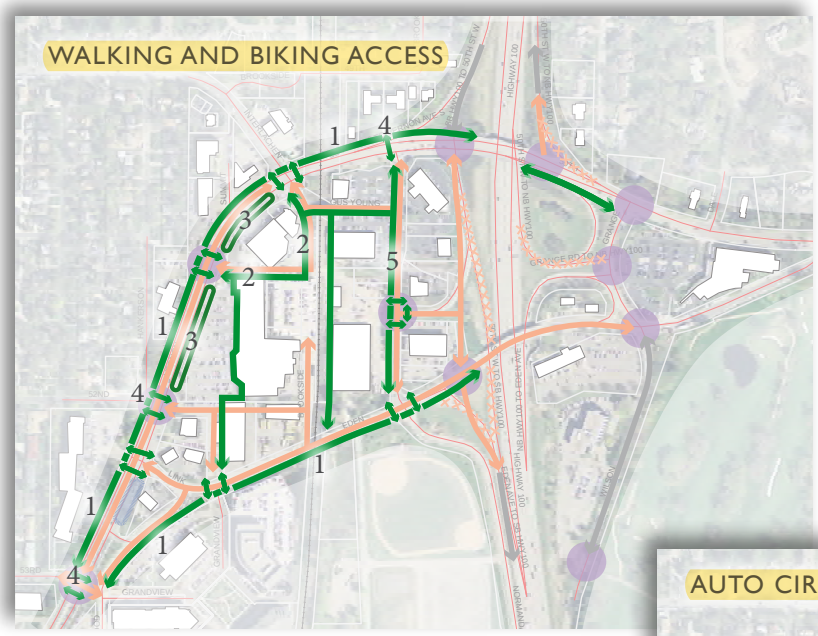
- Number of vehicle trips (District-wide)
- Average vehicle delay (District-wide, and at key intersections)
- Average vehicle speed (District-wide)
- Access to parking
- Pedestrian connectivity (% of sidewalks that are continuous)
- Pedestrian crossing experience (% of crosswalks that are marked) (Figure 1.12 and Figure 1.14)
- Bicycle connectivity (% of marked routes that are continuous)
- Access to transit

The evaluation includes both qualitative and quantitative measures. The primary sources of data for evaluating performance across these metrics include:

- Trip generation and traffic operations analysis
- Conceptual designs
- Data and case studies of other complete streets projects in similar settings
- Stakeholder and community outreach

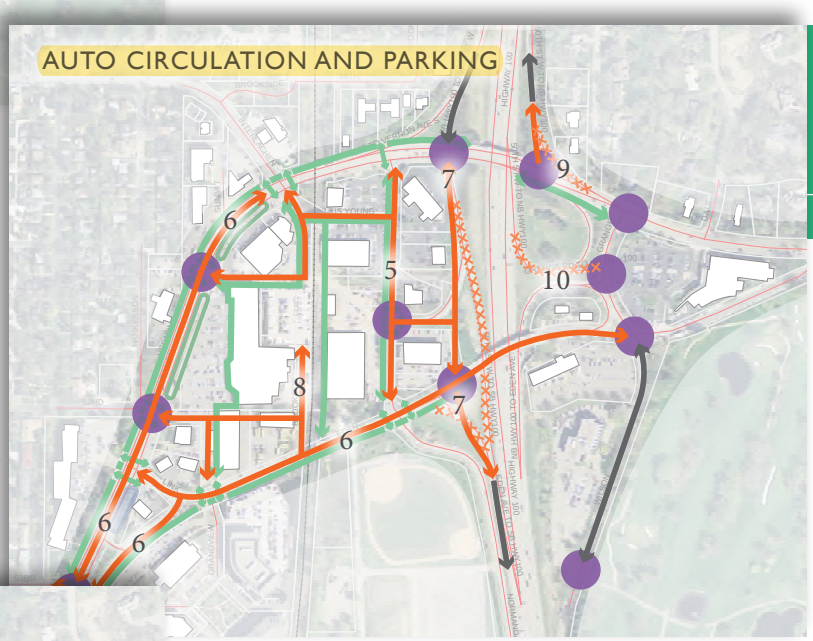
There was some discussion as to whether one goal might be more important than others, i.e. pedestrian safety or traffic flow; however, the goal of this effort is to support mobility and development for everyone circulating to, from, and within the Grandview District. No one metric outshined another. As a result no weighting is assigned to individual metrics or modes.

The evaluation of these metrics are described in greater detail in Chapter 4, with a deeper technical discussion of the traffic analysis in Appendix 3. With each scenario and as more projects are implemented, performance of the transportation network would improve, and the network would become increasingly supportive of the type of future envisioned for the Grandview District. A more detailed discussion of the elements included in each scenario are discussed in Chapter 3.



LEGEND

- CROSSWALKS
- SEPARATED WALK AND BIKE PATHS
- VEHICULAR CIRCULATION IMPROVEMENT
- REMOVAL OF REDUNDANT ROADWAYS
- EXISTING HIGHWAY RAMP ACCESS
- IMPROVED INTERSECTION
- IMPROVED BUS FACILITIES



Mid Term Changes

1. Create separated bike lanes and pedestrian paths on Vernon Avenue and Eden Avenue
2. Improve pedestrian circulation by Jerry's and general retail
3. Create activation zones along streetfront of Vernon Avenue
4. Add more pedestrian crossings on Vernon Avenue
5. Expand walk/bike connections within district interior and improve circulation
6. "Right-sizing" design for Vernon Avenue and Eden Avenue
7. Integrate highway ramp circulation with district street network
8. Develop district parking strategy
9. Free-right turns replaced with controlled intersection onto Highway 100 northbound
10. Remove northbound looping ramp
11. Transit schedule and frequency improvements

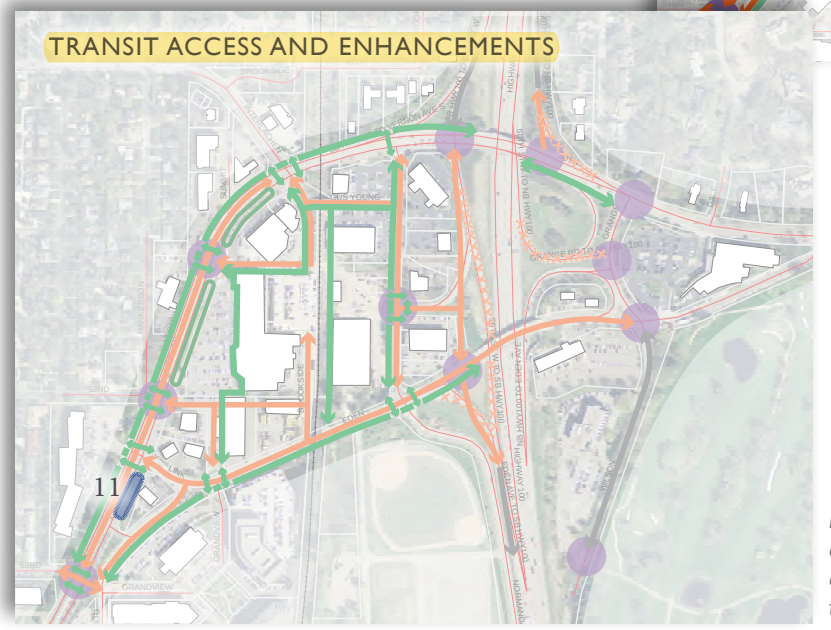


Figure 2.6 Diagrams of proposed improvements for walking and biking access, auto circulation and parking, and transit access and enhancements. Diagrams were developed during the Imagine Week phase of the Transportation Study.

8 – Highway Access

Highway 100 plays a significant role in the Grandview District providing access to and from regional routes by intersecting with 50th Street and Eden Avenue in a combined diamond/cloverleaf intersection configuration. In order for the development of the District to be fully implemented, access to and from Highway 100 remains an important element of the transportation system, but it is also acknowledged that the existing interchange severely limits pedestrian and bicycle connections on either side of the Highway (Figure 3.38).

The proposed reconfiguration of the Highway 100 interchange at both 50th Street and Eden Avenue would facilitate enhanced pedestrian and bicycle access while increasing safety as well as enabling developable parcels adjacent to the highway.

Figure 3.39 shows the proposed west side configuration at both 50th Street and Eden Avenue. At 50th Street the signalized intersection with Highway 100 remains with the addition of a southbound right turn lane which replaces the free-right turn ramp that forces pedestrians and bicyclists to cross wide ramps with fast-moving vehicles. The eastbound free right turn lane to the southbound frontage is also removed to be replaced by a shared through/right-turn lane. The removal of these "free" right turn movements enables a continuous sidewalk with crosswalks to be implemented on both the north and south sides of 50th Street. A new intersection at Eden Avenue is created with the frontage road meeting Eden Avenue at grade at a signalized intersection. The existing southbound ramp from Eden Avenue which currently merges with the frontage road ramp is replaced by a single ramp to remove the merging area that is an existing safety concern. The new west side frontage road provides opportunities for not only vehicular access to the Grandview District and Highway 100 but also for an enhanced multi-modal experience with sidewalks and bicycle facilities.

On the east side of Highway 100 (Figure 3.39), the cloverleaf ramps are removed to enable development parcels to be created adjacent to the Highway with access provided by a frontage road mimicking the configuration on the west side. Access to northbound Highway 100 from 50th Street is provided from both eastbound and westbound 50th Street at a signalized intersection which enables the intersection footprint to be narrowed from the existing ramps with associated safety improvements for pedestrians and bicyclists. Access from northbound Highway 100 is enabled by a reconfigured ramp at Eden Avenue leading to the frontage road which also provides access to Grange Avenue and City Hall. These changes were analyzed for their traffic impacts on local streets, as described in Chapter 4.

The changes on the east side of Highway 100 would require the relocation of the historic structures in Frank Tupa Park. Those structures are not at their historic location and a separate process was already underway to determine if a more historically suitable and publicly accessible location is available. Reconstructing the ramps does not necessitate the elimination of the park itself, which could be reconfigured to complement the pedestrian bridge over Highway 100 and connectivity to the campus of City Hall.

Figure 3.38 Existing redundant ramps and under-utilized space on east side of Highway 100.

Grandview East Area Transportation Study

EDINA 161189

Edina, MN | September 22, 2021

SEH

Building a Better World for All of Us®

Engineers | Architects | Planners | Scientists

Grandview East Area Transportation Study

Prepared for the City of Edina.

1 Introduction

The interchange area of Trunk Highway (TH) 100 at Vernon Avenue and West 50th Street includes a complex roadway network with a non-traditional interchange type and many local road connections.

With redevelopment occurring within and adjacent to the study area, there is desire from the City to improve safety for all modes, traffic operations, access and reduce the complexity of the existing roadway network within the Grandview District area.

The study area includes Vernon Avenue to the north and west, and Eden Avenue to the south and east; however, the focus area is just west of TH 100 to Eden Avenue, including the freeway ramp connections.

Tax Increment Financing (TIF) funds are being considered for near term transportation improvements adjacent to upcoming redevelopment opportunities within the project area.

Figure 1 represents the entire project area and the focus area in Grandview District.

1.1 Background

The project area has been studied several times in recent years. Some of the analysis was conducted to develop Traffic Impact Studies (TIS) for specific redevelopment parcels, while other studies included local roadway and intersection improvements and high-level planning concepts. At the time of this study, the following studies and information was used by either incorporating the data or using the study as a reference.

- Eden Avenue Traffic Study (2020)
- Grandview Green Transportation Study (2018)
- Grandview District Transportation Study (2016)
- Grandview District Development Framework (2012)
- Traffic Impact Studies (various locations)
  - Traffic and Parking Study for 4917 Eden Avenue (2021)
  - Our Lady of Grace Expansion TIS (2019)
  - Planned development at 5100 Eden Avenue (no current TIS)
  - Planned development at 5146 Eden Avenue (no current TIS)

More details about these studies will be provided in a later section of this report.

Figure 1 – **Project Location**

2 Existing Conditions

The following is a description of each of the major roadways and intersections within the project area.

Highway 100

TH 100 is a north-south freeway facility that extends over 15-miles through the western side of the metro area. Through the interchange, TH 100 has 3-travel lanes in each direction, with a posted speed limit of 60 miles per hour (MPH) and carries approximately 124,000 vehicles per day.

- Northbound TH 100 has a single low speed (20 MPH) exit ramp that connects to Grange Road. There are two entrance ramps from W. 50th Street to northbound TH 100 with an eastbound loop ramp and a westbound right turn.
- Southbound TH 100 has a single lane exit to access Vernon Avenue to the west and 50th Street to the east, a connection to a collector-distributer (CD) roadway system also allows access to Arcadia Avenue. There is a single entrance ramp connection to southbound TH 100 that is part of the CD roadway with access from both Vernon Avenue and Eden Avenue.

Vernon Avenue S

Vernon Avenue S is a west-east A-Minor Arterial roadway designated as a County State Aid Highway 158 (CSAH 158) for Hennepin County. It is a 4-lane divided roadway that serves as a primary regional corridor, connecting drivers to TH 62, TH 100, residential areas, and commercial areas such as the Grandview District. The posted speed limit is 30 MPH. Sidewalk facilities exist primarily on the north side of Vernon Avenue S within the focus area. Vernon Avenue S transitions into W 50th Street on the east side of TH 100. Access to both directions of TH 100 is provided from Vernon Avenue. In the study area, the corridor carries between 12,400 to 19,000 vehicles per day based on the most recent daily traffic numbers.

W 50th Street

W 50th Street and Vernon Avenue S are a common roadway, with Vernon Avenue S designated to the west of TH 100 and W 50th Street designated to the east of TH 100. Like Vernon Avenue S, W 50th Street is also a west-east A-Minor Arterial roadway within the study area. It is a 4-lane roadway that also serves as a regional corridor in the City. The posted speed limit is 30 MPH. Near the TH 100 overpass, sidewalk facilities exist only on the north side of the roadway. Sidewalk facilities are provided on both sides of the roadway east of Grange Road. In the study area, the corridor carries between 19,000 to 27,000 vehicles per day based on the most recent daily traffic numbers.

Eden Avenue

Eden Avenue is a west-east Minor Collector roadway designated as a Municipal State Aid (MSA) Route for the City of Edina. It is a 3-lane undivided roadway that connects between Vernon Avenue to the west and W 50th Street to the east with a posted speed limit of 30 miles per hour (MPH). Sidewalk facilities exist on both sides of the roadway except a short segment with sidewalk only on the south side between Brookside Avenue and Arcadia Ave/Normandale Rd; this missing segment will be constructed with a planned 2021 project. Access to southbound TH

2.1 Crash History

Crash data from January 1st, 2015 through December 31st, 2019 was provided from the MnDOT Crash Mapping Analysis Tool (MnCMAT2). The type and severity of the crashes were reviewed, and crash rates and critical rates were calculated for the study intersection.

The crash rate at each intersection is expressed as the number of crashes per million entering vehicles (MEV). The critical crash rate is a statistical value that is unique to each intersection and is based on vehicular exposure and the statewide average crash rate for similar intersections. An intersection with a crash rate higher than the critical rate can indicate a safety concern at the intersection and the site should be reviewed.

Crash severity is separated into five categories based on injuries sustained during the crash.

- Fatal – Crash that results in a death
- Severity A – Crash that results in an incapacitating injury or serious injury
- Severity B – Crash that results in a non-incapacitating injury or minor injury
- Severity C – Crash that results in possible injury
- Property Damage – Crash that results in property damage only, with no injuries

The crash information is summarized in **Table 1**. There was a total of 36 crashes that occurred in the 5-year timeframe at the 17 study intersections; none of the study intersection are approaching the critical crash rate. Not exceeding the critical rate indicates there has been no existing major safety problems, though it doesn't alleviate all safety concerns. The southbound TH 100 ramp has the highest intersection crash frequency with 9 crashes in the 5-years, 6 of the crashes involved at least one a southbound ramp vehicle.

Seven of the study intersections had no crashes during the analysis period; the table only includes the 10 intersections that had a crash occur at the intersection.

Table 1 – Crash History 2015-2019

Intersection:	Crash Severity						Crash Rates	
	Fatal	Sev A	Sev B	Sev C	Property Damage	Total	Int. Rate	Critical
Vernon Ave at Eden Ave**	0	0	1	0	1	2	0.08	0.91
Vernon Ave at Interlachen Blvd**	0	0	0	1	5	6	0.25	0.91
Vernon Ave at Arcadia Ave	0	0	0	0	2	2	0.06	0.38
Vernon Ave at TH 100 SB Ramps**	0	0	0	1	8	9	0.19	1.02
W 50th St at Grange Rd**	0	0	0	1	4	5	0.10	1.01
W 50th St at Dale Dr	0	0	0	1	2	3	0.07	0.37
W 50th St at Eden Ave	0	0	0	0	1	1	0.02	0.36
Grange Rd at TH 100 NB Ramps	0	0	0	0	1	1	0.04	0.42
Eden Ave at Grange Rd	0	0	1	1	1	3	0.13	0.43
Eden Ave at Arcadia Ave	0	0	1	1	2	4	0.23	0.48
TOTAL	**0**	**0**	**3**	**6**	**27**	**36**		

Notes: **Signalized Intersection

4.3 Alternative Scenarios

Due to the planning level nature of this analysis, the time frame of improvements in the study area varies significantly. Portions of the analysis may be implemented in near term projects, while others are being analyzed as long-term solutions with no actual construction timeline.

In the near term, the intersection of Eden Avenue at Grange Road and Willson Road may be programmed for improvements related to redevelopment in the area and possible TIF funds. The existing all-way stop controlled intersection is skewed and has a large footprint that adds to driver confusion. To address the intersection skew, improve safety, and improve operations, the intersection was evaluated for a change to roundabout control. Two preliminary concepts were developed:

- Two mini roundabouts – includes two separate T-intersections along Eden Avenue with Grange Road and Willson Road.
- Mini "dog bone" roundabout – includes a single mini roundabout with an elongated shape.

Additional analysis considered medium or long-term potential improvements that include the following:

- W. 50th Street
  - Corridor safety improvements at various intersections.
  - Provide on-street, buffered bike lanes.
  - Previous Grandview Study typical section (off-street, separated bike lanes).
- Grange Road
  - W. 50th Street Intersection improvements.
  - Add Trail to existing corridor.
  - Realign Grange Road between Willson Road and Dale Drive. The existing parking lot drive lanes would be converted to Grange Road and a new signal would be installed at the Grange/Dale intersection. The parking lot would be relocated to west of the realigned Grange Road with a potential bridge over Grange Road to provide pedestrian access to City Hall.
- TH 100 Interchange Modifications:
  - Reconfigure to Split Offset Single Point Urban Interchange (SPUI), includes single two-way frontage roads on the west side of TH 100, using a concept from Grandview Transportation Study.
  - Reconfigure to Split Diamond interchange, includes one-way frontage roads and an option for two-way frontage roads.
  - Reconfigure to Diverging Diamond Interchange at Vernon Ave.

These design concepts and the operational analysis will be discussed and reviewed further in the following section.

5.3 TH 100 Interchange Alternatives

The reconfiguration of the TH 100 interchange is currently not planned for reconstruction. Previous transportation studies have conducted high level analysis of various options to reconfigure the interchange to a more standard design to improve driver navigation as well as potential create more developable land within the current interchange area.

Based on the previous Grandview Green Transportation Study (2018) and City staff input, a split diamond and a split single point interchange were evaluated alongside the No Build conditions. After reviewing the traffic volumes and design, an additional interchange alterative with a diverging diamond interchange was developed.

Only a 2040 operations analysis was conducted for the interchange alternatives.

5.3.1 No Build Conditions

The current interchange design is a non-standard design with various elements from traditional interchange combined.

Southbound has a single exit ramp with a partial collector-distributer (CD) road system, an exit to Arcadia Avenue is provided from the CD roadway. Vehicles can enter southbound TH 100 from either Vernon Avenue or Eden Avenue.

Northbound TH 100 exits to a buttonhook design connecting to Grange Road, entering TH 100 can be done from the eastbound Vernon Avenue loop ramp or the westbound Vernon Avenue free right turn movement. Access from Grange Road to the northbound TH 100 loop is also provided.

Two changes will be made to the interchange prior to 2024. The Eden Avenue ramp to southbound TH 100 will be closed and all traffic must enter southbound from Vernon Avenue. The southbound exit ramp to westbound Vernon Avenue will be reconfigured so the right turn is at the intersection.

Figure 14 represents the existing interchange configuration. Under the current design, all intersections operate at a LOS C or better in 2040, see **Table 11**.

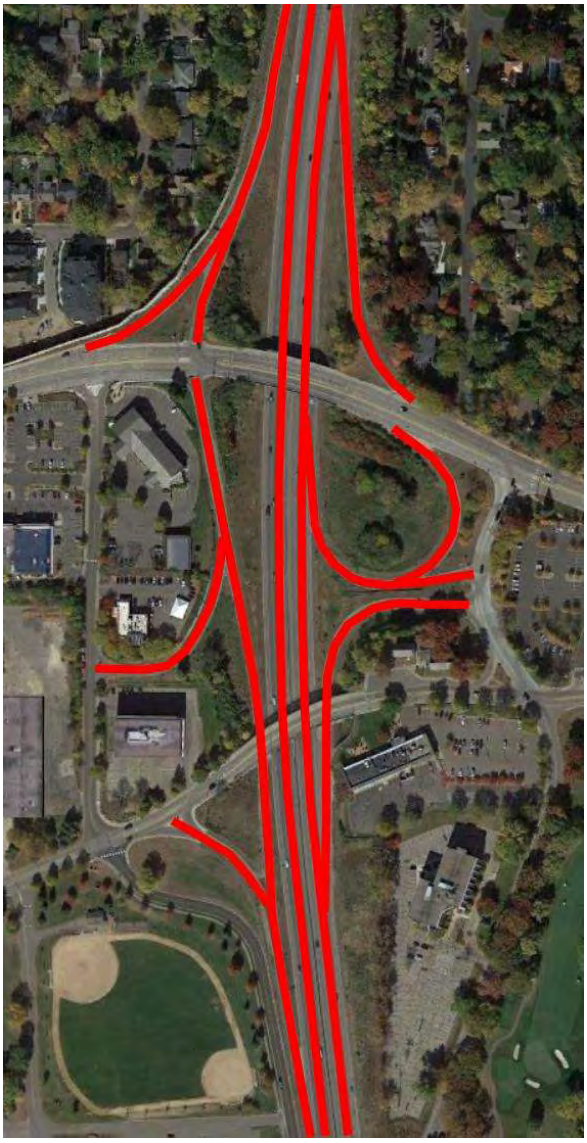


Figure 14 – TH 100 Interchange – No Build

5.3.4 Diverging Diamond Interchange (DDI)

This interchange reconfiguration was incorporated based on review of the existing traffic volumes and design considerations as part of this study.

The configuration is similar to a standard diamond interchange; however, the interchange intersections crossovers are incorporated to shift the arterial traffic on the opposite side of the roadway. This design works extremely well for high turning movement interchanges as the left turn movements operates similar to a free right turn movement.

At the interchange, only between 35% and 50% (AM and PM peaks) of the traffic on Vernon Avenue or W. 50th Street approaching the interchange continues along the arterial roadway past TH 100. Most of the traffic volumes at the interchange intersections is turning onto or from the TH 100 ramps. Based on the volumes reconfigured for the DDI design, approximately 70% to 85% of the total entering volumes at the interchange make a left or right turn at a ramp intersection; this high turning traffic is ideal for the DDI configuration. The existing interchange design has only approximately 65% of the total entering volumes at the interchange turn to or from the ramps, the lower percentage is due to the ramp connections on other roadways.

Diverging diamond interchanges can be found around the Twin Cities metro area at I-35W at CSAH 96, Highway 169 at Highway 41, and at I-494 at 34th Avenue.

Figure 17 shows the preliminary interchange design. The figure shows the planned mini roundabout at Eden Avenue and Arcadia Avenue, as well as the two mini roundabout design option on the east side of TH 100. See **Appendix C** for the full layout.

The subsequent **Table 14** represent the 2040 traffic operations analysis, **Appendix B** includes the operational results for all the study intersections. Using the HCS analysis for the DDI, these intersections will operate with all intersections at a LOS C or better. The operations analysis included traffic signals at the two Vernon Avenue intersections with all interchange traffic on this roadway. Eden Avenue would no longer carry any interchange traffic.

The design of this interchange would not require replacing the existing bridge structures on either Vernon Avenue or Eden Avenue over TH 100. Due to the free left turn movements, turn lanes are not required at the ramp intersections along Vernon Avenue and the existing bridge can remain.

Pedestrian facilities are located at the center of the bridge, with crossings at all the ramp crossovers. The combination of a center sidewalk and median allows for a more efficient use of the existing bridge deck, providing 11-foot lanes and a 12-foot center multi-use trail.

The placement of the ramp intersections on both sides of TH 100 does create close intersection spacing to the existing Grange Road signal. While this design should be considered with the potential Grange Road realignment, due to the simple signal phasing of the DDI signals and the T-intersection phasing at Grange Road, coordination of the intersections should not be problematic; note Grange Road will have significantly less volume without TH 100 traffic.

The DDI interchange provides a reduction in vehicle conflict points compared to a standard diamond, with the DDI only having 14 conflict points compared to 26 at a standard diamond. The existing interchange requires multiple intersections to be included and would have more conflicts than a standard diamond interchange. Crash modification data from FHWA suggests up to a 44% reduction in crashes converting a standard diamond to a diverging diamond interchange.

The construction cost of the DDI is estimated to be approximately $4,000,000 to $6,000,000.

Figure 17 – TH 100 – Diverging Diamond

5.3.5 Interchange Traffic Operation Results

As previously noted, due to the long-term planning of any type of interchange reconfiguration, only the 2040 forecasts volumes were analyzed.

Table 11 represent the No Build conditions at the four main interchange intersections. All intersections operate at a LOS C or better in both the AM and PM peak hours and all approaches operate at a LOS D or better.

Table 10 – 2040 Interchange Operations – No Build

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Approach (Delay / LOS)	Intersection (Delay / LOS)	Approach (Delay / LOS)	Intersection (Delay / LOS)
Vernon Ave at SB TH 100 Ramps (Signal)	EB	21.1 / C	26.7 / C	17.4 / B	28.4 / C
	WB	30.7 / C		32.1 / C	
	SB	30.0 / C		39.7 / D	
Vernon Ave at NB TH 100 Ramps	EB	2.7 / A	3.8 / A	2.6 / A	2.6 / A
	WB	4.6 / A		2.7 / A	
50th St at Grange Rd (Signal)	EB	1.5 / A	9.8 / A	3.9 / A	11.5 / B
	WB	8.0 / A		8.5 / A	
	NB	36.1 / D		35.8 / D	
Grange Road at NB TH 100 Ramps (Minor Stop)	EB	7.2 / A	4.9 / A	12.8 / B	8.0 / A
	WB	3.1 / A		7.1 / A	
	NB	2.5 / A		3.0 / A	
	SB	0.5 / A		0.5 / A	

Table 12 represent the Offset SPUI design at the two main interchange intersections. Both intersections operate at a LOS C or better in both the AM and PM peak hours.

Table 11 – 2040 Interchange Operations – Offset Split SPUI

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Approach (Delay / LOS)	Intersection (Delay / LOS)	Approach (Delay / LOS)	Intersection (Delay / LOS)
Vernon Ave at TH 100 Ramps (Signal)	EB	11.3 / B	21.7 / C	15.1 / B	22.7 / C
	WB	21.3 / C		26.9 / C	
	NB	26.4 / C		31.8 / C	
	SB	34.0 / C		25.4 / C	
Eden Ave at TH 100 Ramps (Signal)	EB	20.1 / C	21.7 / C	22.7 / C	20.8 / C
	WB	28.9 / C		36.5 / D	
	NB	22.2 / C		13.2 / B	
	SB	16.9 / B		15.8 / B	

Table 13 represent the Split Diamond interchange design at the four main interchange intersections. All intersections operate at a LOS C or better in both the AM and PM peak hours. As previously mentioned, providing two-way frontage roads with this scenario is expected to have negligible impacts to the intersection operations.

Table 12 – 2040 Interchange Operations – Split Diamond

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Approach (Delay / LOS)	Intersection (Delay / LOS)	Approach (Delay / LOS)	Intersection (Delay / LOS)
Vernon Ave at SB TH 100 Ramps (Signal)	EB	6.2 / A	13.5 / B	14.4 / B	20.0 / C
	WB	10.9 / B		14.1 / B	
	SB	26.9 / C		29.5 / C	
Vernon Ave at NB TH 100 Ramps (Signal)	EB	9.1 / A	11.3 / B	5.7 / A	9.4 / A
	WB	8.6 / A		6.7 / A	
	NB	27.0 / C		30.2 / C	
Eden Ave at SB TH 100 Ramps (Roundabout)	EB	5.9 / A	7.3 / A	6.9 / A	5.9 / A
	WB	8.1 / A		3.4 / A	
	SB	7.7 / A		7.2 / A	
Eden Ave at NB TH 100 Ramps (Roundabout)	EB	2.8 / A	11.9 / B	2.5 / A	9.4 / A
	WB	9.4 / A		7.5 / A	
	NB	21.3 / C		16.0 / C	

Table 14 represent the Diverging Diamond interchange design at the two main interchange intersections. Both intersections operate at a LOS C or better in both the AM and PM peak hours. This analysis was conducted using the Highway Capacity Software (HCS) and was only evaluated at the two ramp terminal intersections; HCS results are in **Appendix B**.

Table 13 – 2040 Interchange Operations – DDI (HCS Analysis)

Intersection	Approach	AM Peak Hour		PM Peak Hour	
		Approach (Delay / LOS)	Intersection (Delay / LOS)	Approach (Delay / LOS)	Intersection (Delay / LOS)
Vernon Ave at SB TH 100 (Signal)	EB	7.3 / A	14.0 / B	15.6 / B	19.0 / B
	WB	18.4 / B		21.8 / C	
	SB	15.6 / B		15.7 / B	
Vernon Ave at NB TH 100 (Signal)	EB	20.7 / C	16.5 / B	40.1 / D	26.6 / C
	WB	11.0 / B		12.0 / B	
	NB	15.8 / B		15.7 / B	

5.3.6 TH 100 Interchange Alternative Comparison

The following is a comparison of the various TH 100 interchange design alternatives. All concepts provide acceptable operations and would provide a safe interchange design, even the No Build alternative.

Table 14 – TH 100 Interchange Comparison

Scenario	Advantages	Disadvantages
No Build TH 100 Interchange	- No costs - Acceptable safety and operations	- Confusing and unconventional design - Limited development area - Freeway traffic impacts up to 6 separate intersections
Offset SPUI Design	- Freeway traffic limited to one side of TH 100 and at two main intersections - East side of TH 100 fully open for redevelopment opportunities - Reduces WB to NB TH 100 vehicle speeds and moves away from NE quadrant	- High cost with 4 new structures and retaining walls; cost up to $25 million - Concentration of freeway traffic occurs at two main intersections with overall highest delays - Close spacing of new Arcadia Ave roundabout intersection - Close spacing to new Vernon Ave rail bridge limits left turn storage
Split Diamond One-Way Frontage Design	- Freeway traffic focused to four main intersections with limited movements - East side of TH 100 open for redevelopment between frontage and Grange Ave. - Vernon Ave Signals operate well as do the mini roundabouts on Eden Ave	- High cost with 2 new structures and extensive retaining walls; cost up to $25 million - Close spacing of new Arcadia Ave roundabout intersection - Close spacing with existing Grange Ave signal; operations should be acceptable
Split Diamond Two-Way Frontage Design	- Freeway traffic focused to four main intersections with limited movements - East side of TH 100 fully open for redevelopment with Grange removed - Vernon Ave Signals operate well as do the mini roundabouts on Eden Ave	- High cost with 2 new structures and extensive retaining walls cost up to $27 million - Two-way frontage are redundant roadways; assume Grange is removed - Close spacing of new Arcadia Ave roundabout intersection
Diverging Diamond Design	- Freeway focus to two main intersections on Vernon Avenue only; Eden Ave carries no freeway traffic - Redevelopment opportunities. - DDI design performs very well with high turning traffic and is a safer interchange design - Low cost with no bridge structure replacement; costs $4 - 6,000,000.	- Unconventional design, though more are being designed and constructed due to advantages. - Signal coordination can be challenging if in a long corridor

5.4.3.1 Existing TH 100 Interchange

With the existing TH 100 interchange in place, the Grange Road realignment would require all northbound traffic exiting TH 100 to go to Eden Avenue at the current intersection or the western mini roundabout if constructed.

With no interchange reconfiguration, the northbound TH 100 exit ramp would need to be reconfigured to loop down to Eden Avenue and become the north leg at the western mini roundabout or the "dog bone" roundabout. This change would increase the northbound left turn on the new Grange Road alignment, requiring the traffic signal to have dual left turn lanes and a right turn lane.

As discussed in the previous alternatives analysis sections, realigning Grange Road would continue to provide acceptable traffic operations at all intersections along Grange Road, Eden Avenue, and 50th Street.

The construction cost of this alternative, including optional pedestrian bridge over the realigned Grange Road, is estimated to be approximately $4,000,000 to $5,800,000. Without the bridge, pedestrians would be forced to cross the realigned Grange Road at the either W 50th Street or Eden Ave. The cost of this alternative is estimated to be between $1,800,000 and $3,600,000.

5.4.3.2 TH 100 Interchange Reconfiguration

With the four TH 100 interchange reconfigurations, the realignment of Grange Road becomes unnecessary, and not recommended, as the northbound TH 100 exit ramp would be realigned to other roadways. Under the existing conditions the northbound exit ramp carries approximately 7,000 vehicles per day and the access to northbound TH 100 entrance ramp carries approximately 1,500 vehicles per day that will be removed from Grange Road.

- **Offset Split SPUI** – with this interchange design all freeway traffic is located on the west side of TH 100. The volumes on Grange Road will be significantly reduced. Intersection spacing is not a concern as the TH 100 ramp is west of TH 100.
- **Split Diamond One-Way Frontage** – with this interchange design all freeway traffic is located at TH 100 and the volumes on Grange Road will be significantly reduced. Intersection spacing is not a major concern as closely spaced signals operate as T-intersections.
- **Split Diamond Two-Way Frontage** – with this interchange design all freeway traffic is located at TH 100 and the volumes on Grange Road will be significantly reduced. The two-way frontage road makes Grange Road a redundant connection and the roadway could actually be removed.
- **Diverging Diamond -** with this interchange design all freeway traffic is located on Vernon Avenue at TH 100. The volumes on Grange Road will be significantly reduced. Intersection spacing is not a major concern as closely spaced signals operate as T-intersections.

8 Conclusion

This study was intended to provide both short-term analysis and long-term potential solutions for the east side of the Grandview area.

Eden Avenue Improvements
Estimated construction cost (TH 100 to 50th St): $1.4 – 2.0 million

With potential TIF funds being available in the immediate area, the intersection of Eden Avenue at Grange Road/Willson Road is a short-term improvement design option. The existing all-way stop intersection is skewed and has a large footprint that creates some driver confusion as to who has the right-of-way. Both mini roundabout options evaluated provide a safer and more efficient intersection. Based on the overall intersection safety, operations, and construction costs, the two mini roundabout alternative is recommended. While the mini roundabout options are very similar, the two mini roundabouts provide for better flexibility with any future roadway changes.

W. 50th Street Improvements
Estimated construction cost (Grange to Eden): $2.1 – 3.1 million

The existing corridor includes a traffic signal at Grange Road and minor street stop control at Dale Drive and Eden Avenue. While the Grange Road signal operates well, the Dale Drive intersection does have poor levels of service during the peak hours for traffic trying to enter W. 50th Street. Three build mitigations were reviewed for this corridor.

To improve the safety and operations of the corridor, a reduced access scenario with turn lanes is recommended. Dale Drive and Eden Avenue were converted to ¾ intersection. While the change at Eden Avenue would have little impact to existing vehicles, at Dale Drive the minor street lefts would have to use adjacent roadways to continue to their destination. The addition of left turn lanes and reduced access would considerably improve the safety of the corridor; however, the additional width for turn lanes and medians would require approximately 20-feet of right of way on the north side of Eden Avenue.

Grange Road relocation
Estimated construction cost: $300,000

The existing Grange Road corridor is a short segment between Eden Avenue and W. 50th Street that includes the northbound TH 100 ramp intersection. The existing TH 100 intersection has wide medians and non-standard design elements that add to some driver confusion.

To improve the existing corridor, the TH 100 intersection could be reconfigured to a standard intersection design with a potential trail or sidewalk connection on the west side of Grange Road. The reconfiguration would create a normal intersection with easier driver navigation and the trail would provide a connection between W. 50th Street and Eden Avenue.

TH 100 Interchange Reconfiguration
Estimated construction costs:

- *Split offset single point urban interchange: $20.0 – 27.0 million*
- *Split diamond interchange: $19.0 – 26.5 million*
- *Diverging diamond interchange: $ 4.0 – 6.0 million*

The existing interchange is a non-standard design with multiple ramp connections to different arterials. This study reviewed three proposed interchange designs that would all improve the area from a safety, operational, and driver navigation standpoint.

Previous studies proposed a split offset single point urban interchange (SPUI) design. The design would create a 2-way frontage road on the west side of TH 100 with flyover bridges for the two northbound ramp connections to TH 100. This design would provide a safe and efficient options; however, the design requires extensive retaining walls and bridge structures. The construction costs are estimated between $20 million and $27 million.

Another option previously proposed is a split diamond interchange configuration. This would create frontage roads on both sides of TH 100 to connect between Eden Avenue and W. 50th Street; the frontage roads could be either one-way or two-way configurations. A typical split diamond only requires one-way frontage roads to provide the supporting arterial network for this interchange design; one-way frontages also offer the ability to tighten the design. Providing two-way frontages provides redundant connections and increase the design with for the roadways and intersections to allow for all movements. The base construction costs are estimated to be between $19 million and $25 million; the two-way frontages would increase the costs by approximately $1 million to $1.5 million.

The last interchange concept developed is the recommended option based on the existing and future traffic demands and the existing bridge structure. A diverging diamond interchange (DDI) was evaluated as this design works very well for high turning volumes and within limited bridge structure. This interchange could be constructed without the need to replace the existing bridge over TH 100, significantly reducing the construction cost. The design also removes all interchange traffic from Eden Avenue which will improve the safety and operations of the corridor. The construction costs are estimated to be between $4 million and $6 million for this reconfiguration.

Pedestrian Bridge

Estimated construction costs:

- *Shorter bridge (with diverging diamond interchange): $2.4 – 3.5 million*
- *Longer bridge (with existing, SPUI, or offset diamond interchange): $3.9 – 5.6 million*

A pedestrian connection over TH 100 has been considered in previous studies and is considered vital to the vibrancy of the area. The structure is very dependent on the TH 100 interchange design as the bridge length is tied to the existing and future ramp connections.

The diverging diamond would provide the shortest bridge structure length and ultimately the least expensive options; the approximate 475-foot structure is estimated to be between $2.4 million and $3.5 million.

The existing, SPUI, and offset diamond would have a significantly longer structure, an approximate 800-foot bridge would be required to span the ramps and frontage roads. This option is estimated to be between $3.9 million and $5.6 million

Hennepin County
2040
Bicycle Transportation Plan:
Making bicycling safe and comfortable

April 14, 2015

Hennepin

ThreeRivers
PARK DISTRICT

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.

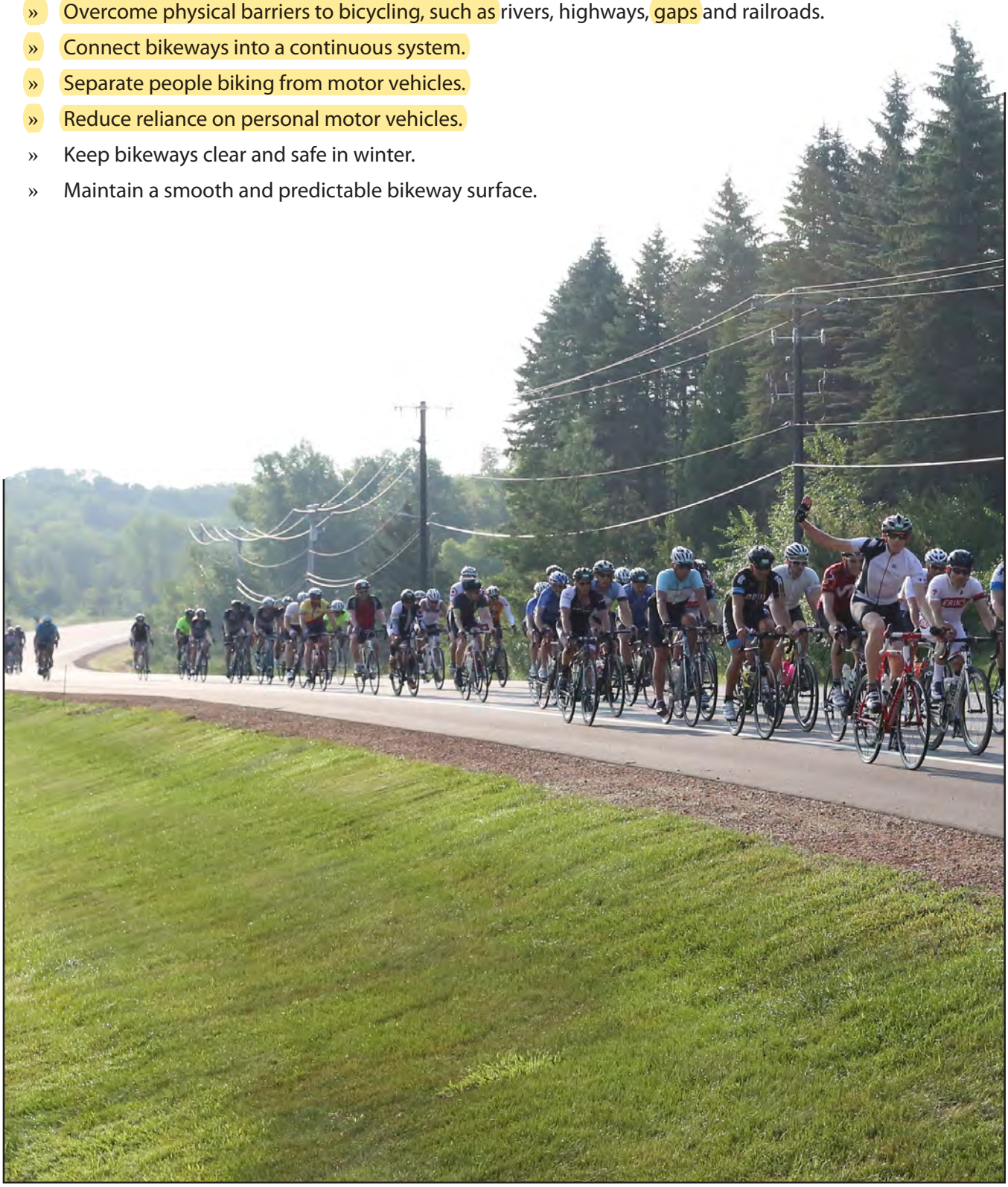
» Connect bikeways into a continuous system.

» 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.

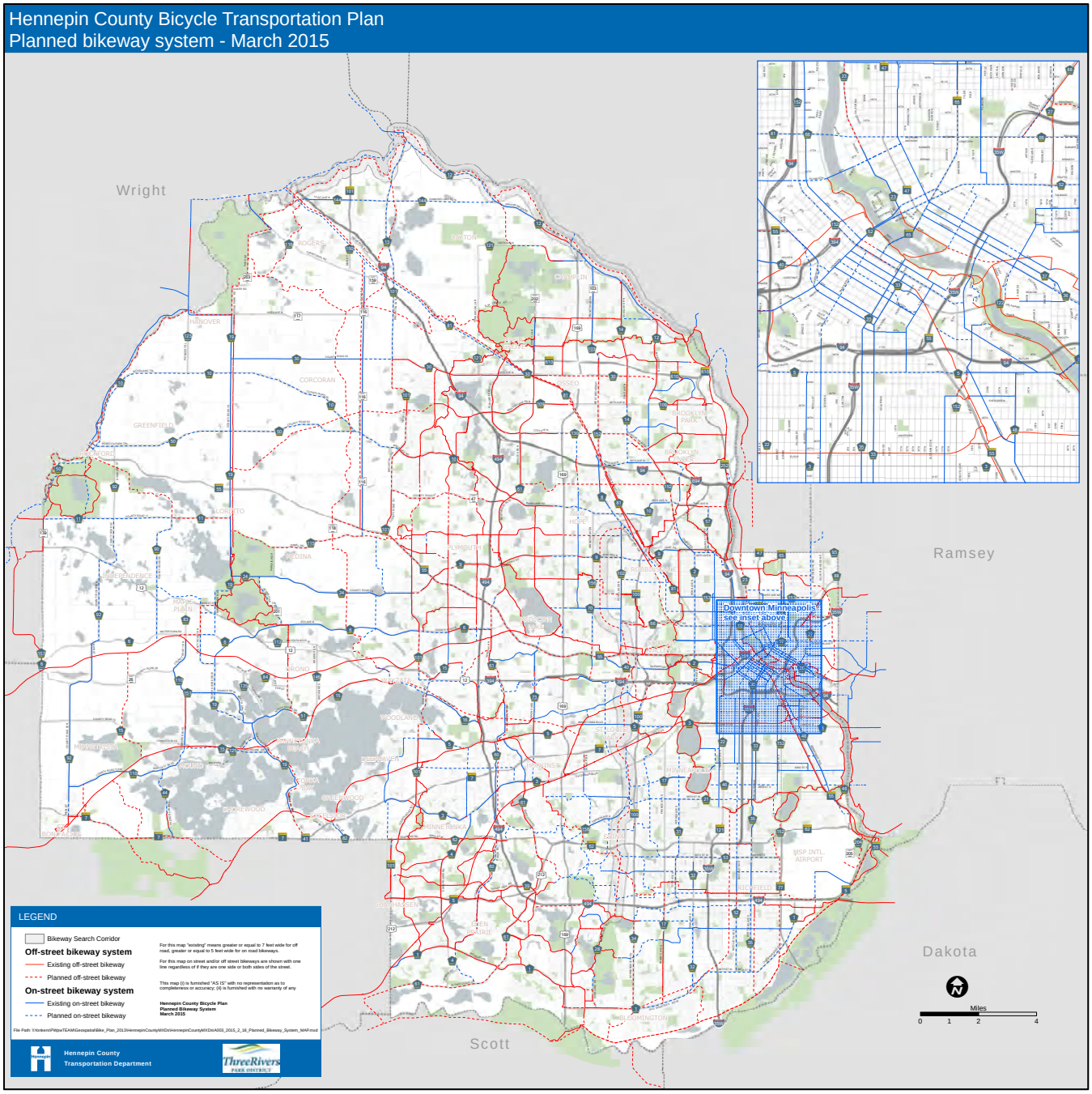


Hennepin County 2040 Bikeway System

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**

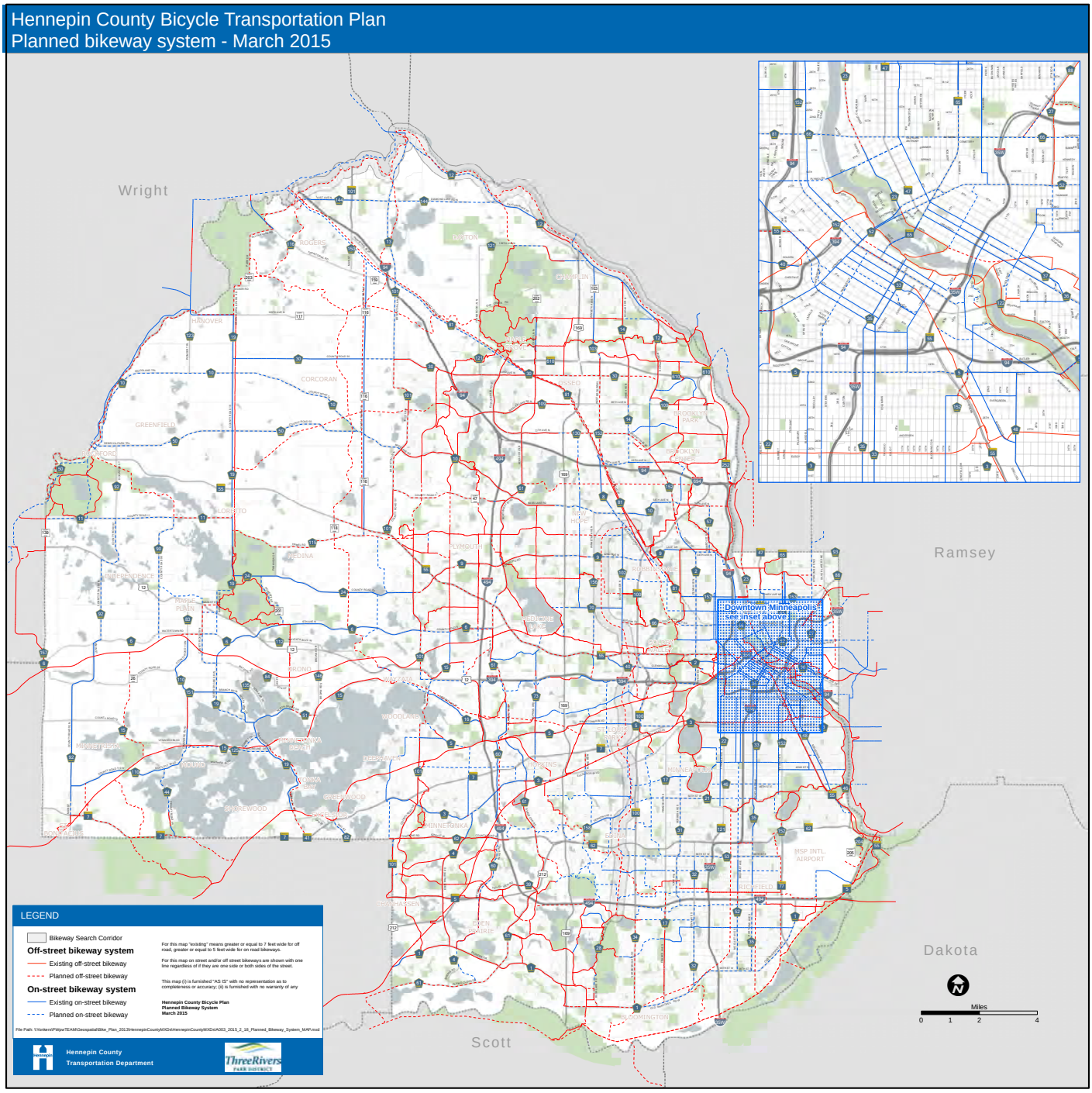


Figure 10: 2040 bikeway system

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**

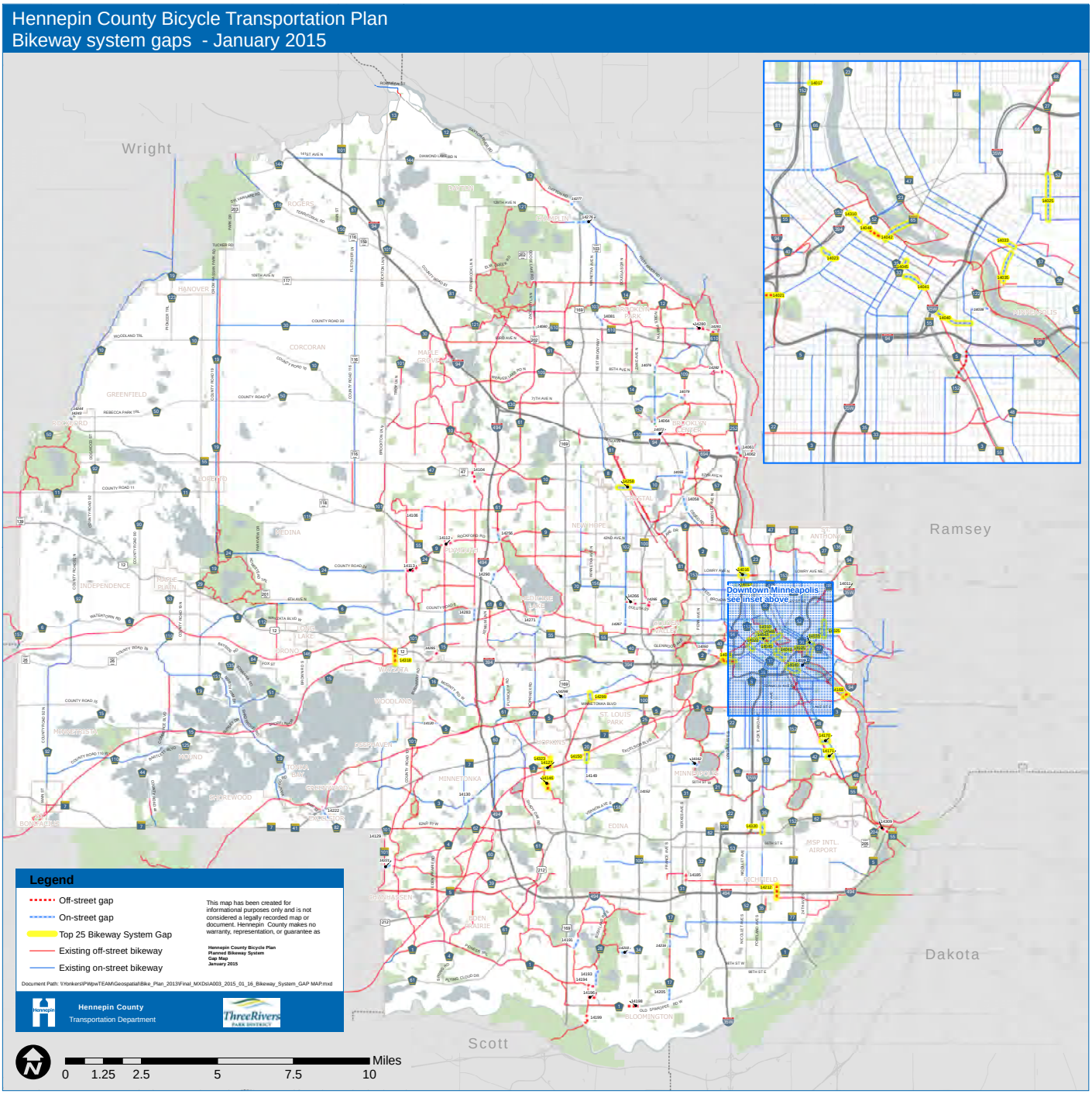


Figure 12: Bikeway system gaps

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**

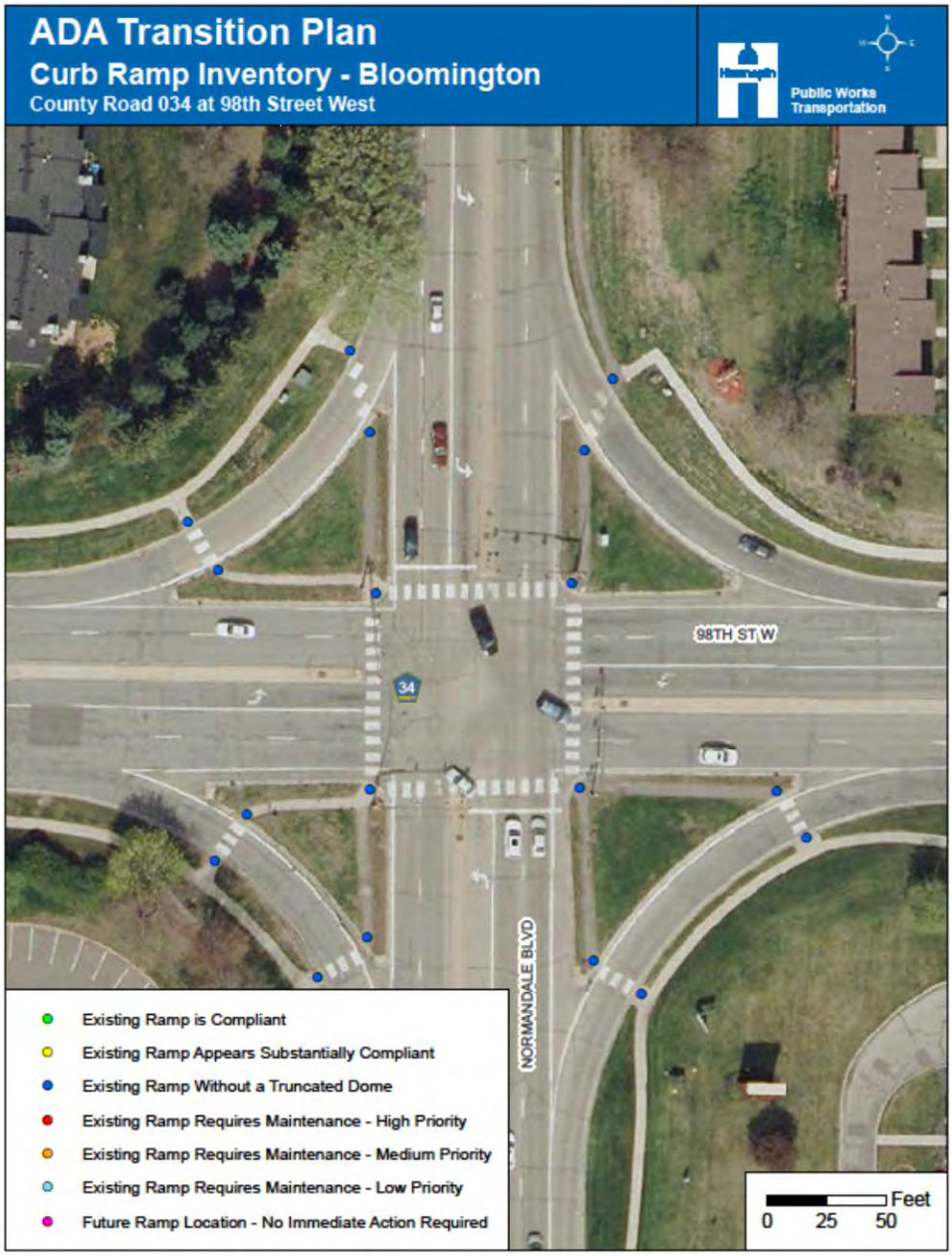
Americans with Disabilities Act **Hennepin County Program Access And Transition Plan** For County Highway Rights of Way

Released August 2015

Version: 2015-03 - 8/31/2015 3:19:00 PM

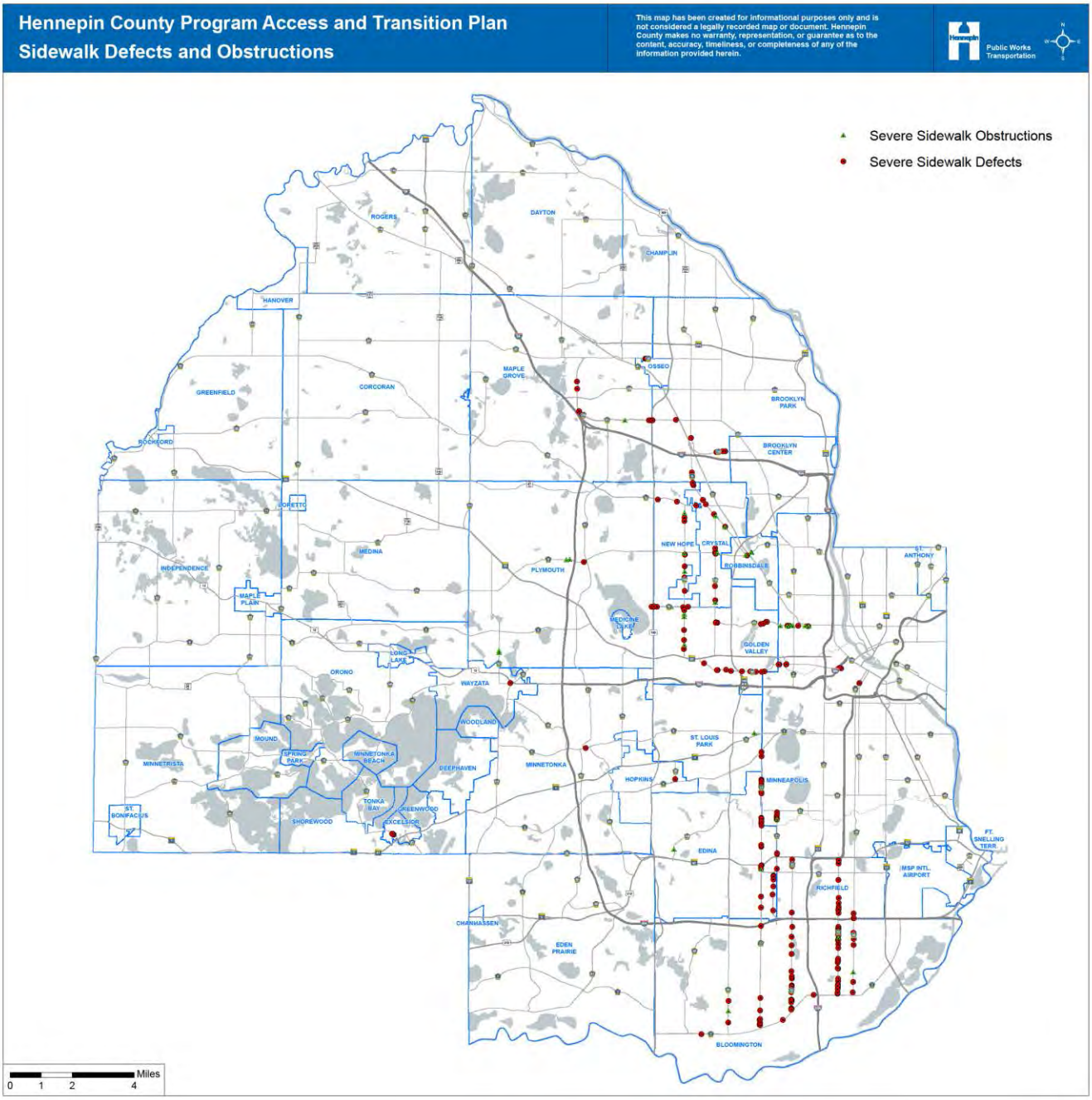
In addition to the pedestrian ramp reports by municipality, a detailed map of each intersection is available by request from the Transition Plan Implementation Engineer. Figure C-1 shows an example of the inventory.

Figure C-1
Pedestrian Ramp Intersection Map - Example



In addition to the sidewalk reports available for each municipality, a detailed map of severe sidewalk defects and obstructions within Hennepin County is available by request from the Transition Plan Implementation Engineer. A sample map is shown in Figure C-4.

Figure C-4
Sidewalk Defects and Obstructions Map



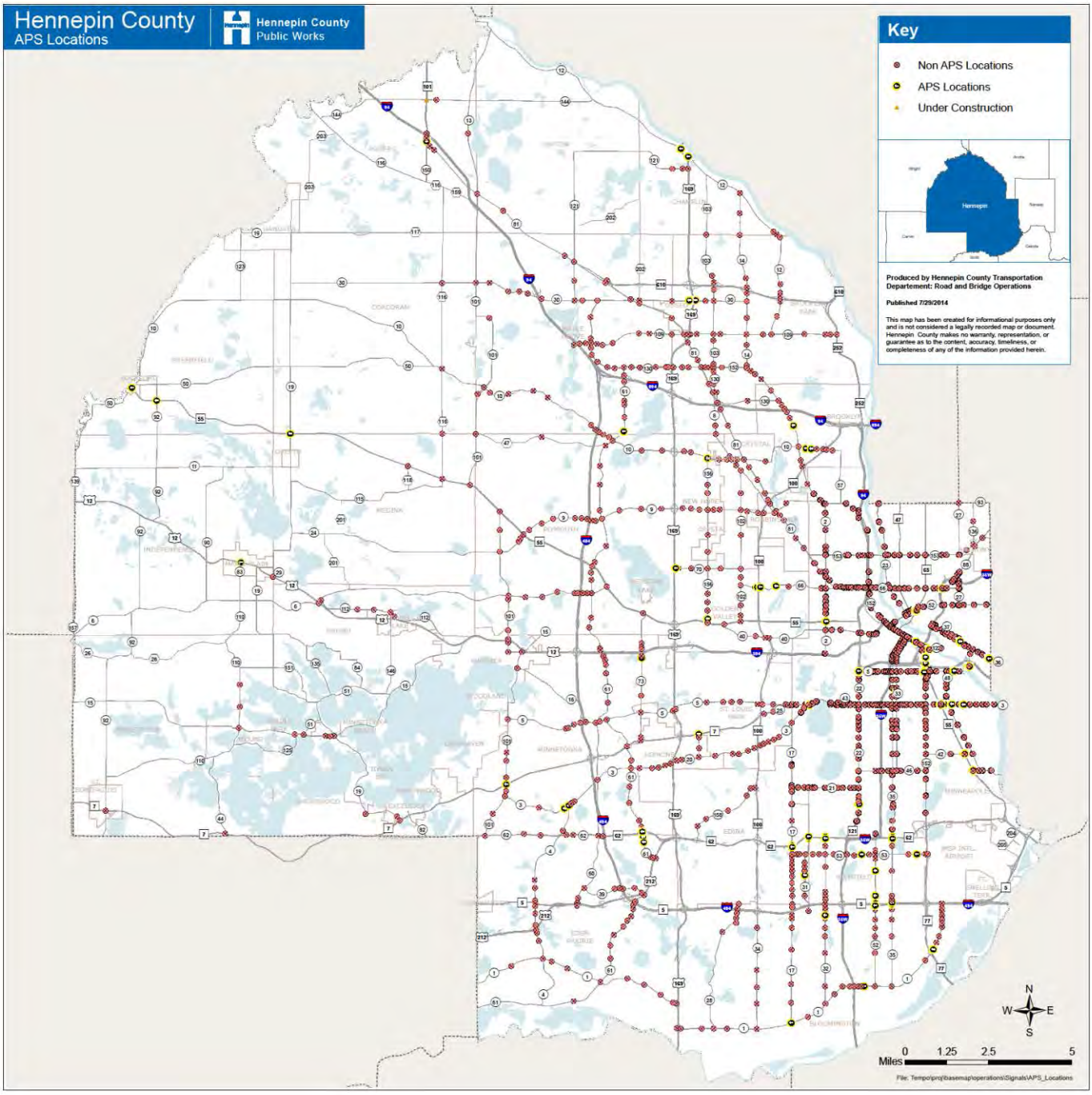
Accessible Pedestrian Signals (APS)

The traffic signals within county highway rights of way and along its county roadways were evaluated in 2014 to determine the number of APS. This information will be updated annually as traffic signals are installed or replaced along the county roadway system. An example of the component that communicates to pedestrians the “WALK” and “DON’T WALK” phases is shown in Figure C-5.

Figure C-5
Traffic Signal Pedestrian Phase

More detailed information regarding the Hennepin County’s Policy for the installation of Accessible Pedestrian Signals may be found in Appendix D. Table C-4 provides the results of APS Evaluation by municipality, which includes the number of traffic signals, number of APS and number of inaccessible pedestrian signals. Figure C-6 provides a map with the traffic signal locations that currently provide APS and the locations of traffic signals that do not currently provide this feature.

Figure C-6
APS and Non-APS Traffic Signals



Hennepin County Pedestrian Plan

Adopted by the Hennepin County Board of Commissioners, September 24, 2013

Made possible with funding from the Centers for Disease Control and Prevention

Hennepin

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

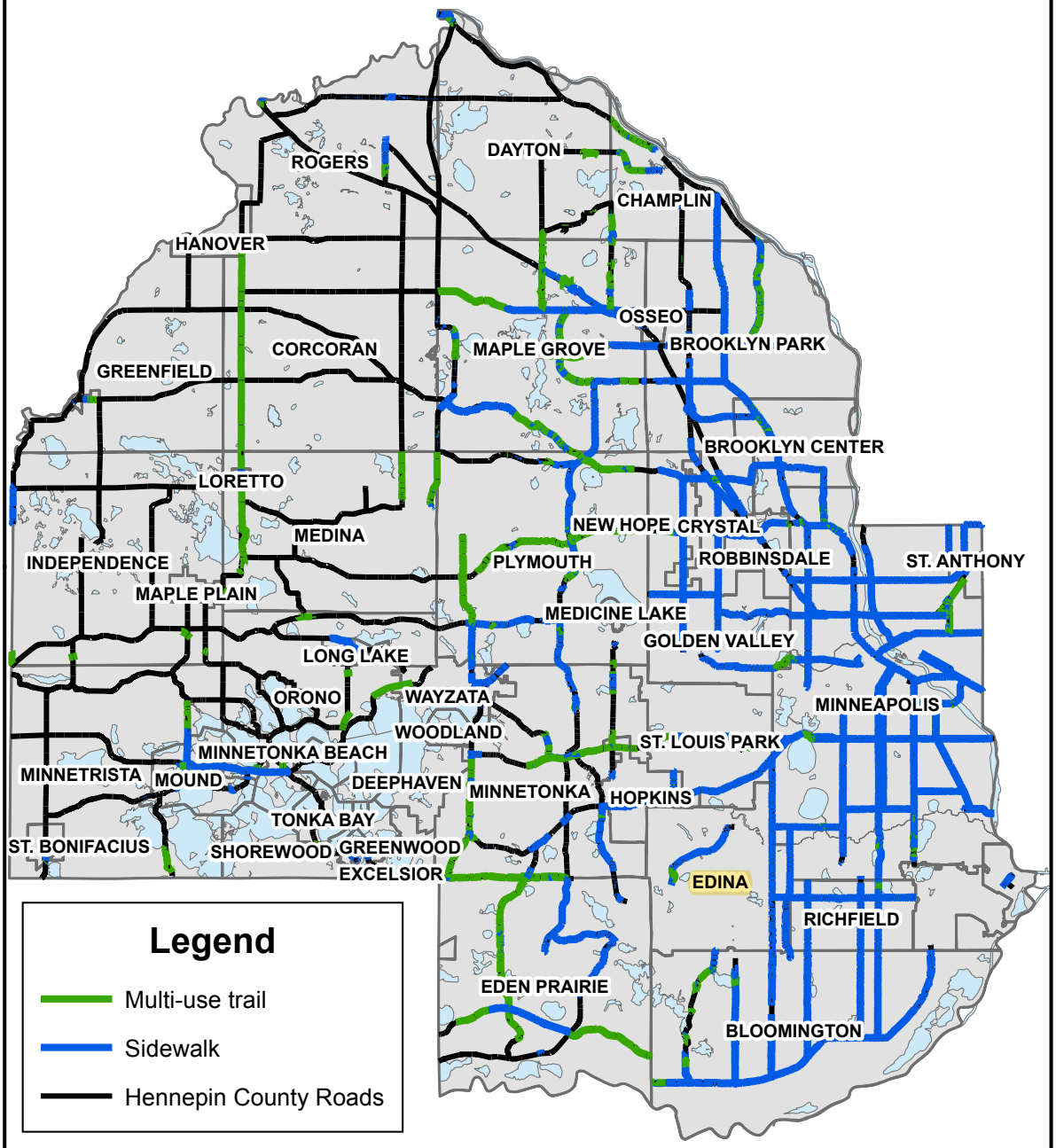
RECOMMENDATIONS TO INCREASE WALKING FOR TRANSPORTATION

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

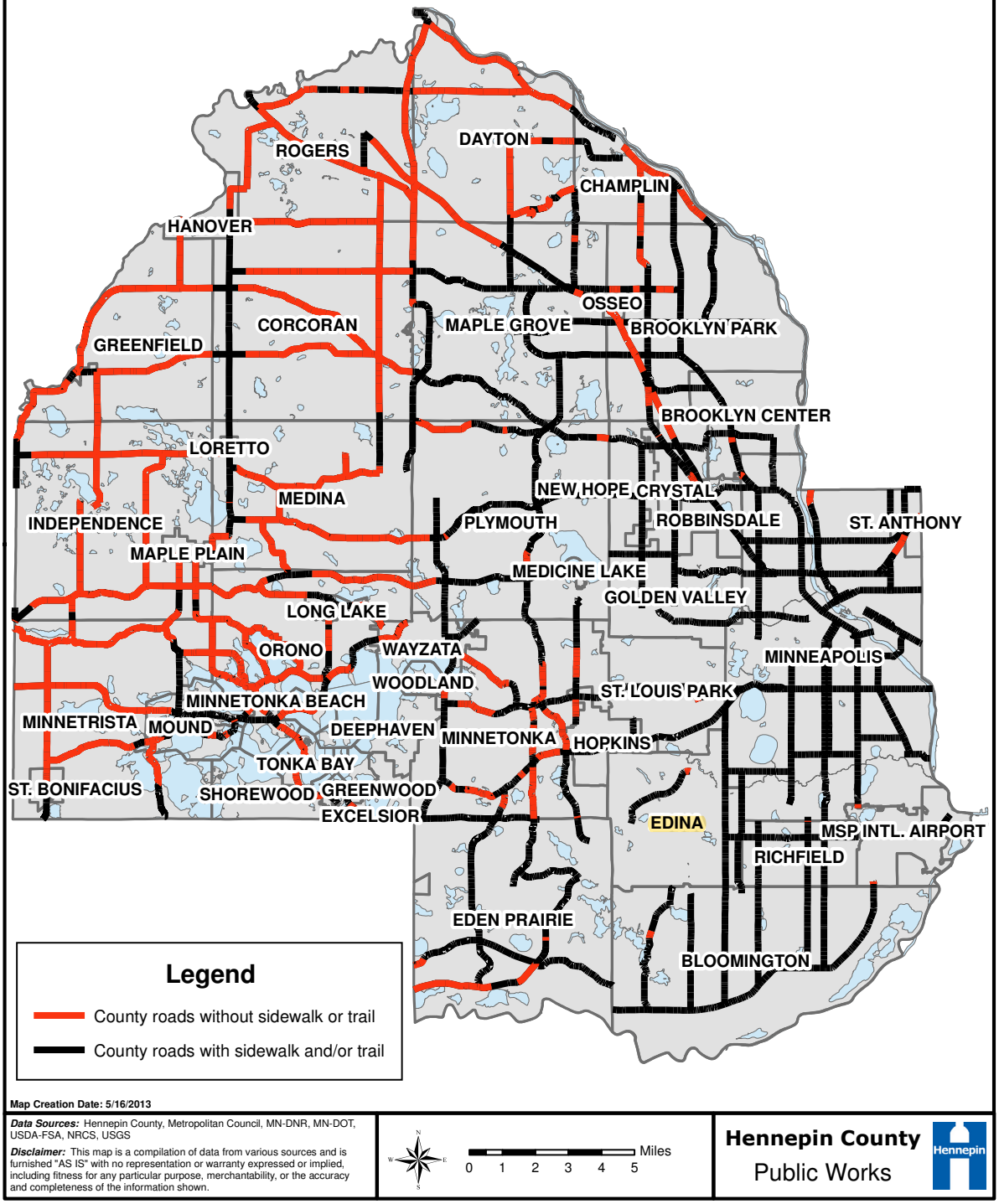
RECOMMENDATIONS TO IMPROVE THE HEALTH OF COUNTY RESIDENTS THROUGH WALKING

- 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

Existing Sidewalk and Trail along Hennepin County Roads



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:

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

HENNEPIN COUNTY
MINNESOTA

March 25, 2022

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

Re: Support for 2022 Regional Solicitation Application
CSAH 158 (Vernon Avenue) Interchange Project at TH 100

Dear Ms. Koutsoukos,

Hennepin County has been notified that the City of Edina is submitting an application for funding as part of the 2022 Regional Solicitation through the Metropolitan Council. The proposed project is the redesign of the existing interchange along CSAH 158 (Vernon Avenue) at TH 100 which is anticipated to include the following improvements:

- Redesign of the existing interchange configuration to improve mobility and safety through the area
- Upgrades to the existing off-road facilities for people walking and biking through the area
- Creation of green space for alternative uses beyond the transportation domain

Hennepin County supports this funding application and agrees to operate and maintain the roadway facilities along CSAH 158 (Vernon Avenue) for the useful life of improvements. At this time, Hennepin County has no funding programmed for this project in its 2022-2026 Transportation Capital Improvement Program (CIP). Therefore, county staff is currently unable to commit county cost participation in this project. As a reminder, the county is actively working on the replacement of the Vernon Avenue Bridge #4510 over the Canadian Pacific (CP) Railroad that's located within close proximity (SP 027-758-006). We kindly request that the City of Edina includes county staff in the project development process to ensure project success. We look forward to working together to improve the safety and mobility of people walking, using transit, biking, and driving along CSAH 158 (Vernon Avenue).

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

Streams (Data through 12/31/2020)

About Streams

Search by Property Name or Address

Or Search by HUD, MN Housing, Public Housing, USDA/RD, or Tax Credit ID

Or filter by:

Funding Source
- Federal
- State
- Local
- Philanthropic

Funding Categories
- Project-Based Subsidy
- Public Housing
- Tax Credit
- Tax Credit (LIHTC 4%)
- Tax Credit (LIHTC 9%)
- Subsidized-Other

Groups Served
- Family
- Elderly
- Disabled

Obligation End Year
Start Year / End Year

Last Finance Year
Start Year / End Year

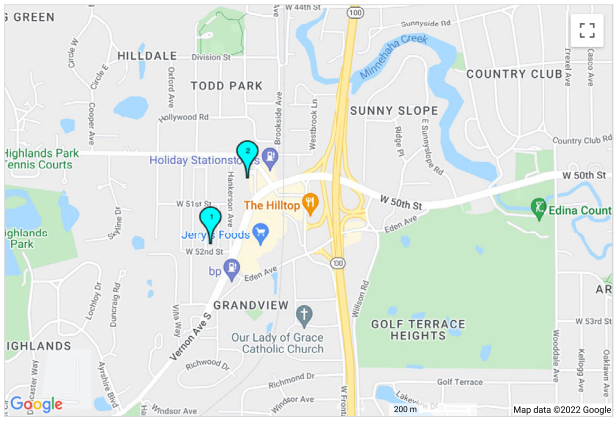
First Finance Year
Start Year / End Year

- New Construction
- Other

Show Results

Clear All

Map Search | City Search | Greater MN



Send us feedback

Properties found.

Property Search Summary

Properties	Total Units	30% AMI*	50% AMI*	60% AMI*	80% AMI*	Total Aff Units*
2	35	6	0	29	0	35

* AMI level and units are estimated if not provided, set to least restrictive AMI for largest number of units.
** Obligation expiration dates are estimated based on program definition if not provided.
*** There may be other funders. This funder provided for reference.

Property Detail (click on property row for additional detail)

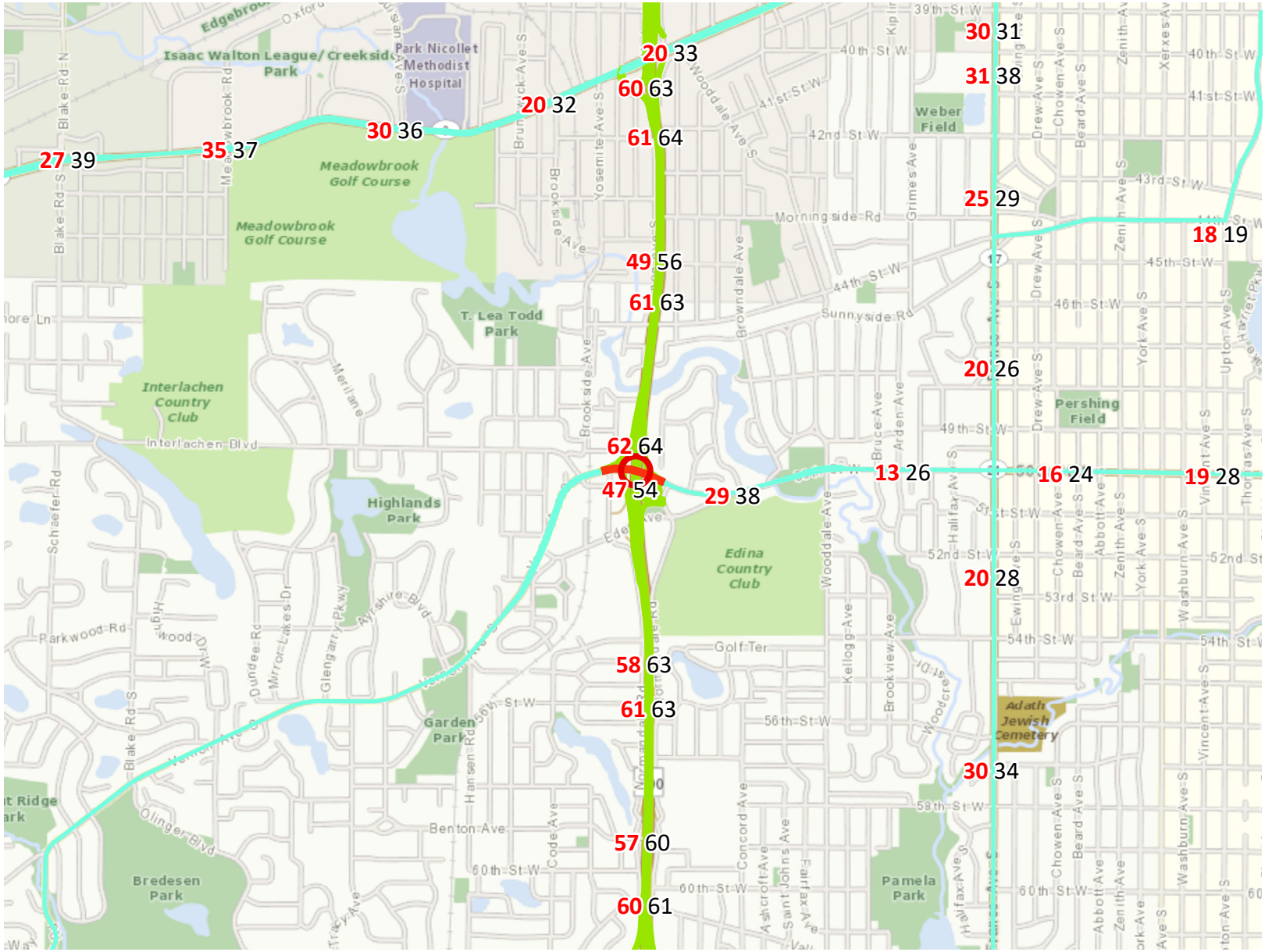
Sort By: 1st Name A-Z 2nd Name A-Z 3rd Name A-Z Resort

Click here to export these search results to a csv file. (Use indicates acceptance of our Data Use Agreement.)

Ref	Name	Address	City	Address Count	Primary Funder***	Property ID	Total Units	30% AMI	50% AMI	60% AMI	80% AMI	Total Afford. Units* Est	1st Close	Last Funding	Earliest Release**	Est
1	Interlodge Fka Spotless Lodge	5141 William Ave	Edina	1	MHFA	D3806	6	6				6	08/02/2007	08/02/2007	08/02/2027	
2	Woodhaven Aka Summit Point	5010 Summit Ave	Edina	1	HUD	800011402	29			29		29	01/01/2005	02/13/2007	02/12/2027	

Level of Congestion

Roadway Reconstruction/Modernization Project: Trunk Highway 100/Hennepin CSAH 158 (Vernon Avenue) Intercha | Map ID: 164761782



Project Points — Principal Arterials — Principal Arterials Planned

Project — A Minor Arterials — A Minor Arterials Planned

0 0.275 0.55 1.1 1.65 2.2 Miles

Created: 3/18/2022
LandscapeRSA1

METROPOLITAN COUNCIL