Application

19839 - 2024 Roadway Expansion
20050 - Roadway Expansion of CP 50-033, CSAH 50 from 170th St to 175th St in Lakeville
Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	12/13/2023 6:31 PM

Primary Contact

Feel free to edit your profile anytime your information changes. Create your own personal alerts using My Alerts.

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

Organization Information

Name:	DAKOTA COUNTY		
Jurisdictional Agency (if different):			
Organization Type:	County Government		
Organization Website:			
Address:	TRANSPORTATION DEPT 14955 GALAXIE AVE		
*	APPLE VALLEY City	Minnesota State/Province	55124 Postal Code/Zip
County:	Dakota		
Phone:*	952-891-7100 Ext.		
Fax:			
PeopleSoft Vendor Number	0000002621A15		

Project Information

Project Name	I-35/CR 5/50 Interchange Reconstruction
Primary County where the Project is Located	Dakota
Cities or Townships where the Project is Located:	City of Lakeville
Jurisdictional Agency (If Different than the Applicant):	N/A

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)	The interchange at I-35 and CR 5/50 connects the growing area of Lakeville and Dakota County to the Twin Cities region, the state of Minnesota and beyond. However, the interchange is lacking sufficient capacity, sight distance and turn lanes, which results in delays and safety issues on CR 5/50 in Lakeville at an area of congestion on the I-35 mainline. The interchange was built as an interim configuration with only one westbound lane and no trail or sidewalk on the north side of CR 5/50 due to constraints of the existing I-35 bridge. CR 5/50 carries 25,500 vehicles per day and is projected to grow to 34,000 vehicles by 2040. The proposed project is a full interchange reconstruction including CR 5/50 from 175th St to 170th St and the I-35 bridge. The two CR 5/50 westbound through lanes that currently end at 175th St will be extended north under I-35 to 170th St. A raised median will be included to separate eastbound and westbound through lanes. A new road connection (173rd St) will be constructed north of 175th St between CR 5/50 and Junelle Path to allow local traffic, including trips from Arris Apartments, to more easily access I-35. A new signalized intersection and marked crossing will be added at Kenyon Trail. The project will address a range of additional deficiencies by improving geometrics, sightlines, turn lanes, and vertical clearance. The project will include improvements to the adjacent local roadway system and multimodal facilities. The project will incorporate additional through lanes on the I-35 bridge based on the recommendations of the I-35 Corridor Study that is underway. The I-35 lane expansion is a separate project that may be coordinated and completed in conjunction with the interchange project. The project will add quality, ADA-compliant multiuse paths on both sides of CR 5/50 under I-35. On the west, the new paths will connect with existing paths at 170th St, filling a Medium Priority pedestrian and bicycle gap identified in the Dakota County Pedestrian and Bicycle Study. On the east, new paths will connect with the existing sidewalk at 175th St. The project will enhance the two existing CR 5/50 crossings and add an additional marked crossing at the new signalized Kenyon Trail intersection. The crossings will include a range of pedestrian safety features such as pedestrian signal heads with countdown timers, audible tones and/or speech messages, high-visibility crosswalk markings and signage, pedestrian refuge islands, and leading pedestrian interval. All crossings will be ADA-compliant with appropriate ramp slopes, tactile paving at ramps, and push buttons. These improvements will be necessary to support safe, efficient, and accessible travel for all users within this growing area of Lakeville and Dakota County.

(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. *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).*	Reconstruction of the I-35/CR 5/50 Interchange in Lakeville
Project Length (Miles) *to the nearest one-tenth of a mile*	0.6

Project Funding

Are you applying for competitive funds from another source(s) to implement this project?	Yes
If yes, please identify the source(s)	USDOT 2023 MPDG Infra Grant (submitted August 2023)
Federal Amount	$10,000,000.00
Match Amount	$22,670,000.00

Minimum of 20% of project total

Project Total $32,670,000.00

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

Match Percentage 69.39%

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

Source of Match Funds Dakota County and City of Lakeville funds

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

Preferred Program Year

Select one: 2028, 2029

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

Additional Program Years: 2026, 2027

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

Project Information-Roadways

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

SAP#:

County, City, or Lead Agency Dakota County

Functional Class of Road A-Minor Arterial

Road System CSAH

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

Road/Route No. 50

i.e., 53 for CSAH 53

Name of Road Kenwood Trail

Example; 1st ST., MAIN AVE

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

From:
Road System Interchange at I-35 and CSAH 50/5

Road/Route No.

i.e., 53 for CSAH 53

Name of Road 170th St

Example; 1st ST., MAIN AVE

To:
Road System

DO NOT INCLUDE LEGAL DESCRIPTION

Road/Route No.

i.e., 53 for CSAH 53

Name of Road 175th St

Example; 1st ST., MAIN AVE

In the City/Cities of: Lakeville

(List all cities within project limits)

OR:

At:
Road System

(TH, CSAH, MSAS, CO. RD., TWP. RD., City Street)

Road/Route No.

i.e., 53 for CSAH 53

Name of Road

Example; 1st ST., MAIN AVE

In the City/Cities of:

(List all cities within project limits)

PROJECT LENGTH

Miles 0.6

(nearest 0.1 miles)

Primary Types of Work (check all the apply)

New Construction Yes

Reconstruction Yes

Resurfacing

Bituminous Pavement Yes

Concrete Pavement Yes

Roundabout	
New Bridge	
Bridge Replacement	Yes
Bridge Rehab	
New Signal	Yes
Signal Replacement/Revision	Yes
Bike Trail	Yes
Other (do not include incidental items)	Lighting, striping and crosswalk markings, pedestrian ramps.

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:	
New Bridge/Culvert No.:	
Structure is Over/Under (Bridge or culvert name):	

OTHER INFORMATION:

Zip Code where Majority of Work is Being Performed	55044
Approximate Begin Construction Date	03/01/2026
Approximate End Construction Date	10/31/2026
Miles of Trail (nearest 0.1 miles)	1.2
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of trail on the Regional Bicycle Transportation Network (nearest 0.1 miles):	0
Is this a new trail?	Yes

Requirements - All Projects

All Projects

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

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

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

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

Goal A: Transportation System Stewardship (Page 2.2). Objective A (Page 2.2), Strategy A1 (Page 2.2).

Goal B: Safety and Security (Page 2.5). Objective A (Page 2.5), Strategy B1 (Page 2.5), Strategy B6 (Page 2.8).

Goal C: Access to Destinations (Page 2.10). Objective A (Page 2.10), Objective B (Page 2.10), Objective D (Page 2.10), Objective E (Page 2.10), Strategy C1 (Page 2.11), Strategy C2 (Page 2.11), Strategy C7 (Page 2.16), Strategy C17 (Page 2.24).

Goal D: Competitive Economy (Page 2.26), Objective B (Page 2.26), Strategy D1 (Page 2.26), Strategy D3 (Page 2.27).

Goal E: Healthy and Equitable Communities (Page 2.30), Objective A (Page 2.30), Objective C (Page 2.30), Objective D (Page 2.30), Strategy E3 (Page 2.31), Strategy E6 (Page 2.34), Strategy E7 (Page 2.34).

Goal F: Leveraging Transportation Investment to Guide Land Use (Page 2.35). Objective C (Page 2.35).

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.

-2024 - 2028 Dakota County Capital Improvement Program (CIP) (p.24)

-2024 - 2028 City of Lakeville Capital Improvement Plan (CIP) (p.18)

-I-35 Corridor Concepts and Evaluation Study (ongoing)

Limit 2,800 characters, approximately 400 words

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

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

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

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

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

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

7. The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is $500,000 and the maximum award is the total amount available each funding cycle (approximately $4,000,000 for the 2024 funding cycle).

Strategic Capacity (Roadway Expansion): *$1,000,000 to $10,000,000*
Roadway Reconstruction/Modernization: *$1,000,000 to $7,000,000*
Traffic Management Technologies (Roadway System Management): *$500,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

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

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

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

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

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

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

Date plan completed: 06/01/2018

Link to plan: https://www.co.dakota.mn.us/Transportation/TransportationStudies/Past/Documents/ADATransitionPlan.pdf

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

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

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

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

11. The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement. This includes assurance of year-round use of bicycle, pedestrian, and transit facilities, per FHWA direction established 8/27/2008 and updated 4/15/2019. Unique projects are exempt from this qualifying requirement.

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

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

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

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

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

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

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

Roadways Including Multimodal Elements

1. All roadway projects must be identified as a principal arterial (non-freeway facilities only) or A-minor arterial as shown on the latest TAB approved roadway functional classification map. Bridge Rehabilitation/Replacement projects must be located on a minor collector and above functionally classified roadway in the urban areas or a major collector and above in the rural areas.

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

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

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

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

Check the box to indicate that the project meets this requirement. 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 in-place structure is 20 feet or longer.

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

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

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

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

7. All roadway projects that involve the construction of a new/expanded interchange or new interchange ramps must have approval by the Metropolitan Council/MnDOT Interchange Planning Review Committee prior to application submittal. Please contact David Elvin at MnDOT (David.Elvin@state.mn.us or 651-234-7795) to determine whether your project needs to go through this process as described in Appendix F of the 2040 Transportation Policy Plan.

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

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$880,000.00
Removals (approx. 5% of total cost)	$850,000.00
Roadway (grading, borrow, etc.)	$1,600,000.00
Roadway (aggregates and paving)	$4,500,000.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$3,000,000.00
Ponds	$500,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$1,500,000.00
Traffic Control	$1,800,000.00
Striping	$250,000.00
Signing	$280,000.00
Lighting	$500,000.00
Turf - Erosion & Landscaping	$350,000.00
Bridge	$6,000,000.00
Retaining Walls	$3,800,000.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$1,050,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$5,310,000.00
Other Roadway Elements	$0.00
Totals	**$32,170,000.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$100,000.00
Sidewalk Construction	$240,000.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$160,000.00
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	**$500,000.00**

Specific Transit and TDM Elements

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

Transit Operating Costs

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

PROTECT Funds Eligibility

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

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

Response:

Several elements of the proposed project are eligible to receive PROTECT funds, with a combined $3,850,000 of eligible project costs. These include Storm Sewer ($3,000,000), Ponds ($500,000), and Turf - Erosion & Landscaping ($350,000). These improvements will increase resilience for the I-35/CR 5/50 interchange area and adjacent communities through improved stormwater management, which will help decrease the magnitude and duration of flood events at the project site.

Totals

Total Cost	$32,670,000.00
Construction Cost Total	$32,670,000.00
Transit Operating Cost Total	$0.00

Congestion within Project Area:

The measure will analyze the level of congestion within the project area. Council staff will provide travel speed data on the "Level of Congestion" map. The analysis will compare the peak hour travel speed within the project area to fee-flow conditions.

Free-Flow Travel Speed:	46
The Free-Flow Travel Speed is the black number.	
Peak Hour Travel Speed:	43
The Peak Hour Travel Speed is the red number.	
Percentage Decrease in Travel Speed in Peak Hour compared to Free-Flow:	6.52%
Upload Level of Congestion map:	1702504206530_Make-a-Map Level of Congestion.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor	Ipava Avenue
Adjacent Parallel Corridor Start and End Points:	
Start Point:	176th Street
End Point:	173th Street

Free-Flow Travel Speed:	39
The Free-Flow Travel Speed is the black number.	
Peak Hour Travel Speed:	28
The Peak Hour Travel Speed is the red number.	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow:	28.21%
Upload Level of Congestion Map:	1702504206530_Make-a-Map Level of Congestion.pdf

Principal Arterial Intersection Conversion Study:

Proposed interchange or at-grade project that reduces delay at a High Priority Intersection:	
(80 Points)	
Proposed at-grade project that reduces delay at a Medium Priority Intersection:	
(60 Points)	
Proposed at-grade project that reduces delay at a Low Priority Intersection:	
(50 Points)	
Proposed interchange project that reduces delay at a Medium Priority Intersection:	
(40 Points)	
Proposed interchange project that reduces delay at a Low Priority Intersection:	
(0 Points)	
Not listed as a priority in the study:	Yes
(0 Points)	

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

Existing Employment within 1 Mile:	3762
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	100
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1702504267121_Make-a-Map Regional Economy.pdf
Please upload attachment in PDF form	

Measure C: Current Heavy Commercial Traffic

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

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

Measure A: Current Daily Person Throughput

Location	CR 5/50 between the I-35 southbound ramps and 175th St
Current AADT Volume	25500
Existing Transit Routes on the Project	467
For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (if applicable).	
Upload Transit Connections Map	1702504314167_Make-a-Map Transit Connections.pdf
Please upload attachment in PDF form	

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	33150.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume	No
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	Dakota County Multi-Modal Travel Demand Model Update
Forecast (2040) ADT volume	34000

Measure A: Engagement

i. Describe any Black, Indigenous, and People of Color populations, low-income populations, disabled populations, youth, or older adults within a ½ mile of the proposed project. Describe how these populations relate to regional context. Location of affordable housing will be addressed in Measure C.

ii. Describe how Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing were engaged, whether through community planning efforts, project needs identification, or during the project development process.

iii. Describe the progression of engagement activities in this project. A full response should answer these questions:

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

Response:

The I-35/CR 5/50 interchange project area includes populations that are relevant to Metropolitan Council's equity goals. According to U.S DOT's Screening Tool for Equity Analysis of Projects (STEAP), within ½ mile of the project 15% of residents identify as people of color, 6% identify as Hispanic, 13% are aged 65 and older, 11% have a disability, and 21% of households have access to one or less cars. The City of Lakeville has similar portions of residents identifying as people of color (15%) and households that have access to one or less cars (23%). However, Lakeville has smaller portions of residents aged 65 and older (9%), that identify as Hispanic (4%), and that have a disability (9%) when compared to the project area.

The I-35/CR 5/50 interchange area is a core focus of the ongoing MnDOT I-35 Corridor Concepts and Evaluation Study (I-35 Corridor Study), and engagement for the I-35/CR 5/50 project has been conducted as a part of this effort.

The Study sponsors established equity as a guiding principle at the project outset. To ensure that equity would be meaningfully integrated throughout the Study's public engagement, the study team opted to use the Zan Equity Scorecard Tool (ZEST), an approach that incorporates the principles and practices of MnDOT's Equity Lens Framework. This tool provided a framework for research, strategies, and language that helped the study team engage and elevate the voices of historically underrepresented communities.

Engagement was conducted in three phases that focused on educating the public about the project, building a shared corridor vision, and collecting input on residents' project priorities. In-person outreach activities included tabling and pop-up engagements at a variety of community events in Lakeville and Burnsville, with approximately 350 attendees.

Online tools were used to engage those unable to attend events in-person. An online survey and interactive comment map were available on the project website from February 1-May 19, 2023 for community members to provide feedback on their priorities for the interchange reconstruction. The survey gathered input on travel habits, priorities, and improvement ideas, and received 1,423 responses. The comment map allowed residents to specify issue areas and the I-35/CSAH 50 interchange received 212 comments.

Input received through engagement with stakeholders, underrepresented communities, and the general public was used to inform the study's Purpose and Need as well as development of the I-35/CR 5/50 interchange reconstruction as a priority project to address the overall corridor needs.

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

Measure B: Disadvantaged Communities Benefits and Impacts

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

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

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

Acknowledge and describe any negative project impacts to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Describe measures to mitigate these impacts. Unidentified or unmitigated negative impacts may result in a reduction in points.

Below is a list of potential negative impacts. This is not an exhaustive list.

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

Response:

The I-35/CR 5/50 interchange area is home to transportation disadvantaged communities, with two Census Tracts adjacent to the interchange (608.14; 608.13) having high levels of unemployment, housing cost burden, mobile homes housing units, residents 17 or younger, and residents with a disability as compared to the state as a whole (USDOT Equitable Transportation Community Explorer). The project will have a range of positive impacts on these communities, with key benefits including improved air quality, better local connectivity, and improved access to transit.

The project will address congestion at the interchange, significantly reducing emissions from idling and slow-moving vehicles. Modeling done for the I-35 Corridor Study indicates that I-35 at the interchange will operate at LOS E and F during peak hours by 2046 under no-build conditions. The project will correct deficiencies of the interchange caused by the I-35 bridge including improving geometrics, sightlines, turn lanes, vertical clearance, and adding a second westbound travel lane on CR 5/50. The project will replace the existing I-35 bridges with bridges wide enough to accommodate traffic needs on I-35, consistent with the findings of the I-35 Corridor Study. These improvements are anticipated to greatly improve traffic flow and reduce congestion and emissions at the interchange.

Adjacent residents will also benefit from better connectivity across I-35. The single sidewalk available at the existing crossing today is insufficient given the volumes and speeds on CR 5/50, resulting in safety concerns and conditions designated as high-risk and high-stress within the Dakota County Pedestrian and Bicycle Study. Given the variety of uses located on either side of the interchange, the existing crossing acts as a barrier for surrounding residents to access the range of opportunities located only a short distance away on the opposite side of I-35. The project will add multiuse paths on both sides of CR 5/50, improving this essential link for those who rely on it.

The project also will benefit access to transit and quality of transit service. The improved crossing will enhance non-motorized access to the Kenrick Park & Ride (north of the interchange), which provides transit service to downtown Minneapolis and other destinations. Roadway improvements, including improved sight distances, capacity, and turn lanes, will allow buses to more efficiently navigate the intersection, improving travel times and reliability. These improvements will allow users to more easily and safely reach buses, and experience better service.

The project will have significant health and quality of life benefits for adjacent disadvantaged residents, including improved local and regional mobility and better air quality.

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

Measure C: Affordable Housing Access

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

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

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

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

Response:

As shown on the Socio-Economic Conditions map, there are 106 publicly subsidized rental housing units in census tracts within a 1/2 mile of the project. In addition, several naturally occurring affordable housing developments are available within 1/2 mile of the project, including Queen Anne Courts mobile home park and Connelly's Mobile Home Park.

The project will provide a variety of benefits to existing and future affordable housing residents. According to the US DOT Bureau of Transportation Statistics, households in the lowest income quintile spent 30.2% of their after-tax income on transportation in 2022. This compares to the 11.6% of after-tax income that households in the highest income quintile spent. Given this high transportation cost burden, disadvantaged communities more often rely on active transportation and transit for their daily travel, and are most affected when safe, convenient, and accessible facilitates are not available.

With residential and commercial uses clustered on both sides of I-35, the CR 5/50 crossing is a critical link for commuters traveling between work and home, or those looking for employment opportunities. The crossing also provides multimodal access for those traveling on foot or by bike to the Kenrick Park & Ride from the west, including residents of Queen Anne Courts mobile home park.

The project's multimodal improvements will add multiuse paths on both sides of CR 5/50 under I-35. Enhancements will also be made to the existing signalized crossings of CR 5/50 at the I-35 northbound and southbound ramps, and a new signalized crossing will be added at Kenyon Trail. These improvements will provide affordable housing residents safe and convenient access to local opportunities within the interchange area while improving connections to transit lines serving downtown Minneapolis and beyond.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Project?s census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	
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.	1702504375496_Make-a-Map Socio-Economic Conditions.pdf

Measure A: Infrastructure Age

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1965.0	0.5	982.5	893.182
2004.0	0.6	1202.4	1093.091

1	2185	1986

Average Construction Year

Weighted Year	1986.273

Total Segment Length (Miles)

Total Segment Length	1.1

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay without the Project:	Total Peak Hour Delay by the Project:	Total Peak hour Delay Reduced by project	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
19.7	19.0	0.7	14735	14705	290279.5	279395.0	10884.5	N/A	1702504456088_CSAH 50 Traffic Summary Report.pdf
						279395			

Vehicle Delay Reduced

Total Peak Hour Delay Reduced		Total Peak Hour Delay Reduced	Delay Reduced Total
	290279.5	279395.0	10884.5
	290279.5	279395.0	10884.5
	290279.5	279395.0	10884.5

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):
20.47	19.53	0.94
20	**20**	**1**

Total

Total Emissions Reduced:	0.94
Upload Synchro Report	1702504545934_CSAH 50 Traffic Summary Report.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: Benefit of Crash Reduction

Crash Modification Factor Used:

-CMF ID 7848: Install a traffic signal

-CMF ID 8428: Improve angle of channelized right turn lane

-CMF ID 7732: Add a through lane on both directions and a raised median

-CMF ID 7924: Increase from 4 lanes to 6 lanes

-Elimination of an intersection (CSAH 50 and 175th St W/175th Ct), assuming all crashes associated with left- and right-turns are eliminated.

-New intersection of CSAH 50 and NB I-35 off-ramp/173rd St crashes estimated using MnDOT average crash rates in intersection toolkits

(Limit 700 Characters; approximately 100 words)

Rationale for Crash Modification Selected:

The above crash modification factors were selected as they were the best factors available for the proposed improvements. CMF ID 7848 selected for CSAH 50 & Kenyon Avenue as it is the most applicable CMF for signalizing this intersection. CMF ID 8428 selected for CSAH 50 & I-35 SB ramp terminal intersection as it was the only CMF found related to the changes proposed at this intersection. The crashes at the new NB I-35 off-ramp/173rd St intersection were estimated using the 2022 MnDOT average crash rate for a high-volume Traffic Signal and the crash severity distribution from the 2015 MnDOT intersection toolkit. Since the intersection of CSAH 50 and 175th St W/175th Ct is having the EB and WB connections cut off as part of the proposed conditions, all left-turn and right-turn crashes were considered eliminated. The typical section for the project varies slightly but CMF IDs 7732 and 7924 represent the best CMF available for their respective applications along the corridor.

(Limit 1400 Characters; approximately 200 words)

Project Benefit ($) from B/C Ratio:	$569,949.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	49
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:	1
Worksheet Attachment	1702504649726_I-35 CSAH 50_BC.pdf

Please upload attachment in PDF form

Roadway projects that include railroad grade-separation elements:

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

Measure B: Pedestrian Safety

Determine if these measures do not apply to your project. *Does the project match either of the following descriptions?*

If either of the items are checked yes, then ***score for entire pedestrian safety measure is zero****. Applicant does not need to respond to the sub-measures and can proceed to the next section.*

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

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

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

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

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

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

Response:

The I-35/CR 5/50 interchange serves as a key crossing location for non-motorized trips. Due to the large distances between crossings of I-35, users rely heavily on the crossing at CR 5/50 for non-motorized access to jobs, shopping, services, and transit. On CR 5/50, non-motorized travelers use the two existing crossings to access destinations on either side of the county highway. Given the importance of the I-35/CR 5/50 interchange for non-motorized travel, the project has been developed to provide safer, more convenient, and more accessible crossing of both I-35 and CR 5/50 as a primary design criterion.

The existing I-35 bridge over CR 5/50 was built in 1965. County Road 5/50 was widened as an interim configuration in 2004, but the existing interchange bridge constrains the I-35 crossing to a single sidewalk on the south side of CR 5/50. CR 5/50 at the interchange has posted speeds of 35 to 45 mph and carries 25,500 vehicles per day, with volumes projected reach 34,000 by 2040. These high speeds and volumes led the Dakota County Pedestrian and Bicycle Study to assign this segment of CR 5/50 the highest Level of Traffic Stress score, describing roadways where few people are comfortable bicycling. The study further describes the corridor as a High-Risk Roadway for pedestrians and bicyclists.

Existing crossings on CR 5/50 are not to ADA standards. Marked crossings within the project area are located at the I-35 northbound and southbound ramps. Crosswalk markings at these locations are highly faded and barely visible, and ramps, push button orientation, and other features generally lack ADA-compliance.

The reconstructed I-35/CR 5/50 interchange will add quality, ADA-compliant multiuse paths on both sides of CR 5/50 under I-35. The project will also enhance the two existing CR 5/50 crossings and add an additional marked crossing at the new signalized Kenyon Trail intersection. The crossings will include a range of pedestrian safety features such as pedestrian signal heads with countdown timers, audible tones and/or speech messages, high-visibility crosswalk markings and signage, incorporation of the raised median as a pedestrian refuge, and a leading pedestrian interval. All crossings will be ADA-compliant with appropriate ramp slopes, tactile paving at ramps, and push buttons. Crossings will link to and provide continuity between the new multiuse paths.

Project improvements will allow the I-35/CR 5/50 interchange crossings to accommodate higher pedestrian and bicycle volumes, enhance comfort, and increase actual and perceived safety. Importantly, the project will provide critical safety and accessibility improvement for the area's disadvantaged residents who may depend on active modes for their daily travel.

(Limit 2,800 characters; approximately 400 words)

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

Select one: No

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

Response:

(Limit 1,400 characters; approximately 200 words)

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

Select one: Yes

If yes,
? How many intersections will likely be affected?

Response: 2

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

Response:

While total curb-to-curb roadway width along the corridor will increase as a result of adding one westbound through lane, effective measures will be taken to reduce crossing distances and exposure for pedestrians. Existing marked crossings are located along CR 5/50 at the I-35 northbound and southbound ramps. Crosswalk markings at these locations are faded and barely visible, and ramps and other features generally lack ADA-compliance. These crossings will be enhanced and a new signalized crosswalk will be added at the Kenyon Trail intersection as part of the interchange reconstruction.

The improved and new crossings will include a range of pedestrian safety features such as pedestrian signal heads with countdown timers, audible tones and/or speech messages to indicate crossing status, high-visibility crosswalk markings and signage, and a leading pedestrian interval. All crossings will be ADA-compliant with appropriate ramp slopes, tactile paving at ramps, and push buttons. Additionally, the raised median will be incorporated as a pedestrian refuge to reduce crossing distance and provide two-stage crossing.

These improvements will improve visibility, reduce crossing distances, and limit exposure for pedestrians using this high-speed, high-volume roadway.

(Limit 1,400 characters; approximately 200 words)

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

Response:

N/A

(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:

N/A

(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:

As part of the interchange project, CR 5/50 will be reconstructed from 170th St to 175th St and a raised median will be added to separate lanes. The raised median will support organized traffic flow, preventing weaving and providing a clear and predictable path for drivers. This will aid motorists in maintaining controlled speeds and encourage driver awareness. Raised medians will also result in a visual narrowing effect, naturally promoting slower driving speeds and increased caution. Adding trails on both sides of the road will introduce a more urban, active context that cues drivers to slow down. Physically separating lanes will reduce the risk of head-on collisions, which tend to be more severe.

The project will enhance existing marked crossings and add a new crossing to improve visibility and protection for pedestrians crossing CR 5/50. Improvements will include a new signalized intersection with marked crossing at Kenyon Trail, as well as improvements to the existing crossings at the I-35 northbound and southbound ramps. The crossings will include a range of pedestrian safety features such as pedestrian signal heads with countdown timers, audible tones and/or speech messages to indicate crossing status, high-visibility crosswalk markings, pedestrian refuges, and leading pedestrian interval. All crossings will be ADA-compliant with appropriate ramp slopes, tactile paving at ramps, and push buttons. These improvements will support increased driver awareness, slower driver speeds, and increased awareness of crossing pedestrians.

(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 posted speeds on CR 5/50 are 35 mph east of the interchange and 45 mph west of the interchange. No change in posted speeds is proposed as part of the project.

(Limit 1,400 characters; approximately 200 words)

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

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

Existing road configuration is a One-way, 3+ through lanes

or

Existing road configuration is a Two-way, 4+ through lanes

Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of 30 MPH or more	Yes
Existing road has AADT of greater than 15,000 vehicles per day	Yes
List the AADT	25500

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

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

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

If checked, please describe:

The project is within 500' of several shopping and dining destinations. HOM Furniture, Pizza Ranch, Wyndham Lakeville Hotel, Cracker Barrel, Summit Orthopedics, Holiday Gas Station, and Upright Health Muscle & Joint are located adjacent to CR 5/50 on the west of the interchange.

East of the interchange, CR 5/50 is within 500' of two small shopping centers that include Red's Savory Pizza, Sport Clips, H&R Block, and a variety of other dining and shopping uses. Additional adjacent uses include Valvoline Oil Change, College Hunks Junk Removal, and Affinity Plus Credit Union.

A variety of other commercial uses, including banks, grocery stores, restaurants, and fitness centers are located within walking distance of the project. The new multiuse paths on CR 5/50 will increase multimodal access to these destinations from either side of the Interstate.

(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:

The project is located within 500' of several multifamily developments. The Queen Anne Courts mobile home park is located adjacent and to the southwest. The new Arris Apartments is a 197-unit residential development is located to the northeast, and will be connected by existing sidewalks to the new multiuse paths. Residents of this multifamily housing will greatly benefit from the increased multimodal access and safety provided by the project.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The I-35/CR 5/50 interchange is the only crossing along a 2.4-mile segment of I-35, making it an essential link across this major bicycle and pedestrian barrier. With residential and commercial uses clustered on both sides of I-35 and CR 5/50, crossings of these facilities are critical for residents traveling between work and home, those looking for job opportunities, and those using active transportation for exercise and leisure. The area's only transit line, Route 467, makes its southernmost stop at the Kenrick Park & Ride, giving the crossing critical importance for those relying on transit to travel to or from the area.

The existing I-35 undercrossing is limited to a single sidewalk on the south side of CR 5/50, which is inadequate given the high speeds and volumes along CR 5/50. These conditions are reflected in the Dakota County Pedestrian and Bicycle Study (Pedestrian and Bicycle Study), which designates this section of CR 5/50 as high-risk and high-stress for non-motorized users. Existing crossings on CR 5/50 are faded and generally lack ADA-compliance. Since the interchange was built, Dakota County has adopted a policy of providing multiuse paths on both sides of county highways.

For those choosing active transportation for commuting or recreation, these conditions are inconvenient. But for the transportation disadvantaged, including those without a vehicle, those who cannot drive, or those with mobility impairments, the existing conditions reduce the ability to complete essential trips. Adjacent census tracts (608.14; 608.13) have relatively high levels of unemployment, housing cost burden, mobile homes housing units, residents 17 or younger, and residents with a disability when compared to the state (USDOT Equitable Transportation Community Explorer). Disadvantaged residents are more likely to rely on non-motorized options for their daily travel, and bear the heaviest burden when safe, convenient, and accessible facilities are absent.

The reconstructed intersection will add quality, ADA-compliant multiuse paths on both sides of CR 5/50 from 170th St to 175th St. The new paths will connect with existing paths on the west and existing sidewalk on the east. The existing CR 5/50 crossings located at the I-35 northbound and southbound ramps will be enhanced, and a marked crossing will be added at the new signalized Kenyon Trail intersection. The project will include improvements to adjacent sidewalks, which will be connected to the new multiuse paths.

At present, I-35 and CR 5/50 act as barriers separating residents from the range of nearby destinations. Project improvements will provide a safe and accessible connections across I-35 and CR 5/50, allowing all residents to access the opportunities available within this area of the city.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

If the applicant is completing a transit application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.

Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1. Public Involvement (20 Percent of Points)

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

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

100%

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

50%

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

50%

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

25%

No outreach has led to the selection of this project.

0%

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

Response:

The I-35/CR 5/50 interchange area is part of the ongoing MnDOT I-35 Corridor Concepts and Evaluation Study (I-35 Corridor Study), and engagement for the I-35/CR 5/50 project has been conducted as a part of this effort. Engagement was conducted in three phases that focused on educating the public about the project, building a shared corridor vision, and collecting input on residents' project priorities. Given the project area's diverse residents, engagement strategies were designed to reach a large number of people, provide flexibility, and more effectively involve populations traditionally underserved in community engagement and planning processes.

In-person events were held at a variety of community locations in Lakeville and Burnsville. These included:

- Burnsville Polar Fest: The study team set up a table at the event on Sat, February 11. Participants were asked to identify priorities for improvements within the project area. A total of 119 residents were engaged. Of the 26 residents that chose to self-identify race, half identified as people of color.

- Lakeville Landscape, Home, and Consumer Expo: The project team staffed a table at the expo on Sat, March 18. Participants were asked to identify priorities for improvements within the project. A total of 152 residents provided feedback to project team members.

- Burnsville MVTA Transit Station: Project staff set up a table during the morning commute on Wed, Apr 19 to catch people as they waited for the bus. Participants were asked to identify priorities for improvements within the project. The project team talked to a total of 30 commuters.

- Apple Valley High School One District Many Voices: Project staff hosted a table at the One District Many Voices cultural night event at Apple Valley High School on Friday, May 5. The team engaged with a total of 48 people, 17 of which self-identified as people of color.

Online tools were used to engage those unable to attend events in-person. An online survey and interactive comment map were available on the project website from February 1-May 19, 2023 for community members to provide feedback on their priorities for the interchange reconstruction. The survey gathered input on travel habits, priorities, and improvement ideas, and received 1,423 responses. The comment map allowed residents to specify issue areas at the interchange, and received 212 comments.

Public communication materials included the project website hosted by MnDOT, an informational handout, and an email update sent via GovDelivery. Advertisements on Facebook and Instagram were purchased that targeted zip codes at the study area. These communications focused on informing the public about the study and encouraging them to participate in the online survey and comment map.

(Limit 2,800 characters; approximately 400 words)

2. Layout (25 Percent of Points)

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

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

100%

A layout does not apply (signal replacement/signal timing, stand-alone streetscaping, minor intersection improvements). Applicants that are not certain whether a layout is required should contact Colleen Brown at MnDOT Metro State Aid ? colleen.brown@state.mn.us.	
100%	
For projects where MnDOT trunk highways are impacted and a MnDOT Staff Approved layout is required. Layout approved by the applicant and all impacted local jurisdictions (i.e., cities/counties), and layout review and approval by MnDOT is pending. A PDF of the layout must be attached along with letters from each jurisdiction to receive points.	Yes
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	1702504793345_I-35 Interchange Concept.pdf
Please upload attachment in PDF form	
Additional Attachments	1702505017036_Letters of Support_Combined.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	
50%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified	Yes
25%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified	
0%	
5. Railroad Involvement (15 Percent of Points)	
No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable)	Yes
100%	
Signature Page	
Please upload attachment in PDF form	
Railroad Right-of-Way Agreement required; negotiations have begun	
50%	
Railroad Right-of-Way Agreement required; negotiations have not begun.	
0%	

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$32,670,000.00

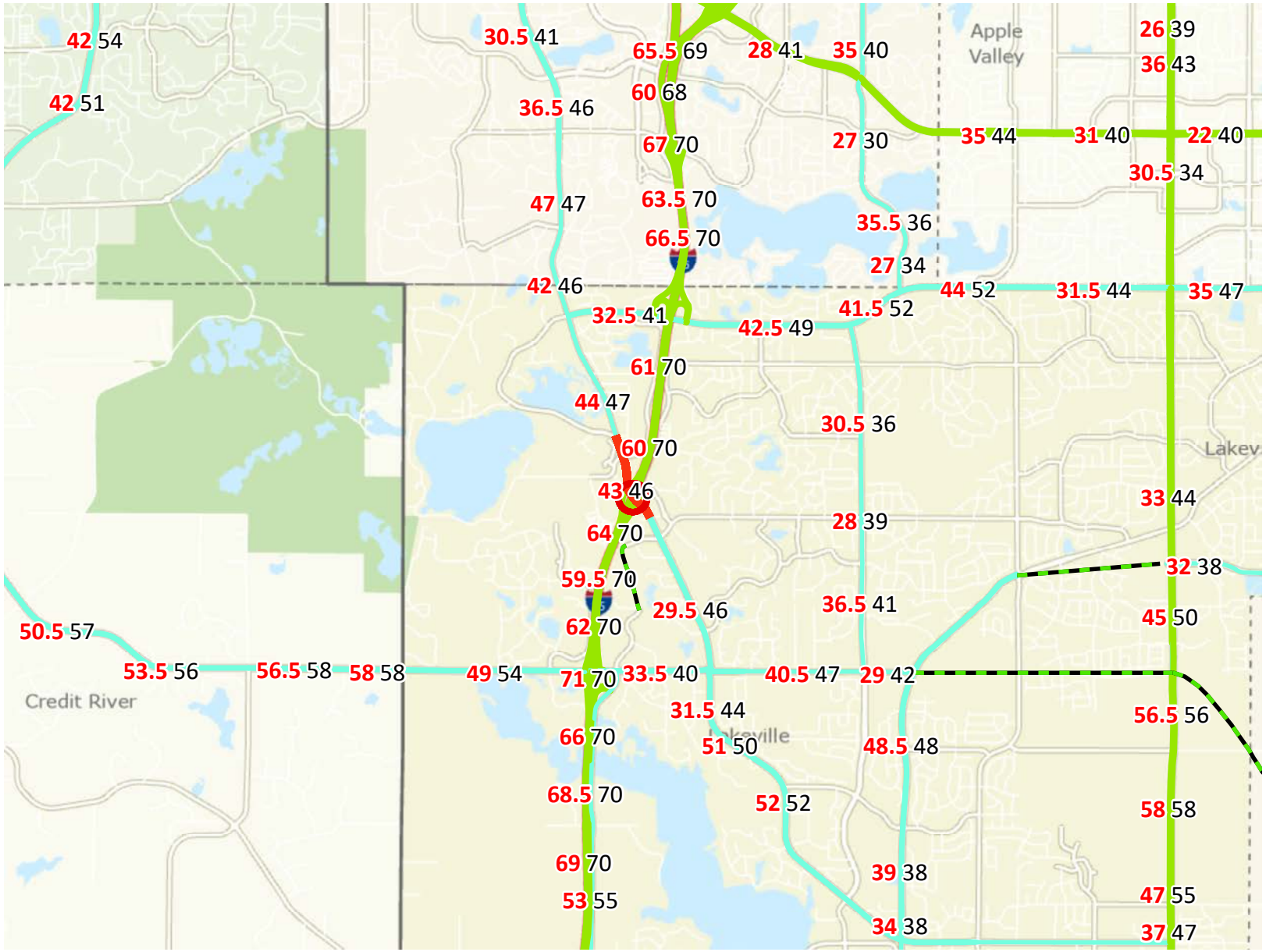
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$32,670,000.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
Attachment A_One-Pager.pdf	One-Page Project Summary	1.2 MB
Attachment B1_CSAH 50 Traffic Packet Part 1.pdf	CSAH 50 Traffic Packet Part 1	561 KB
Attachment B2_CSAH 50 Traffic Packet Part 2.pdf	CSAH 50 Traffic Packet Part 2	741 KB
Attachment C_I-35 & CSAH 50 Crash Summary.pdf	2020 - 2022 Project Crash Summary	64 KB
Attachment D_I-35 & CSAH 50_CMF Calculation.pdf	CMF Information and Calculation Tables	436 KB
Attachment E_Photo_Existing Conditions.pdf	Existing Conditions Photograph	397 KB

Level of Congestion

Strategic Capacity Project: I-35 and CR 5/50 Interchange Reconstruction in Lakeville | Map ID: 1701459227464



Project Points — Principal Arterials — Principal Arterials Planned

Project — A Minor Arterials — A Minor Arterials Planned

0 0.5 1 2 3 4 Miles

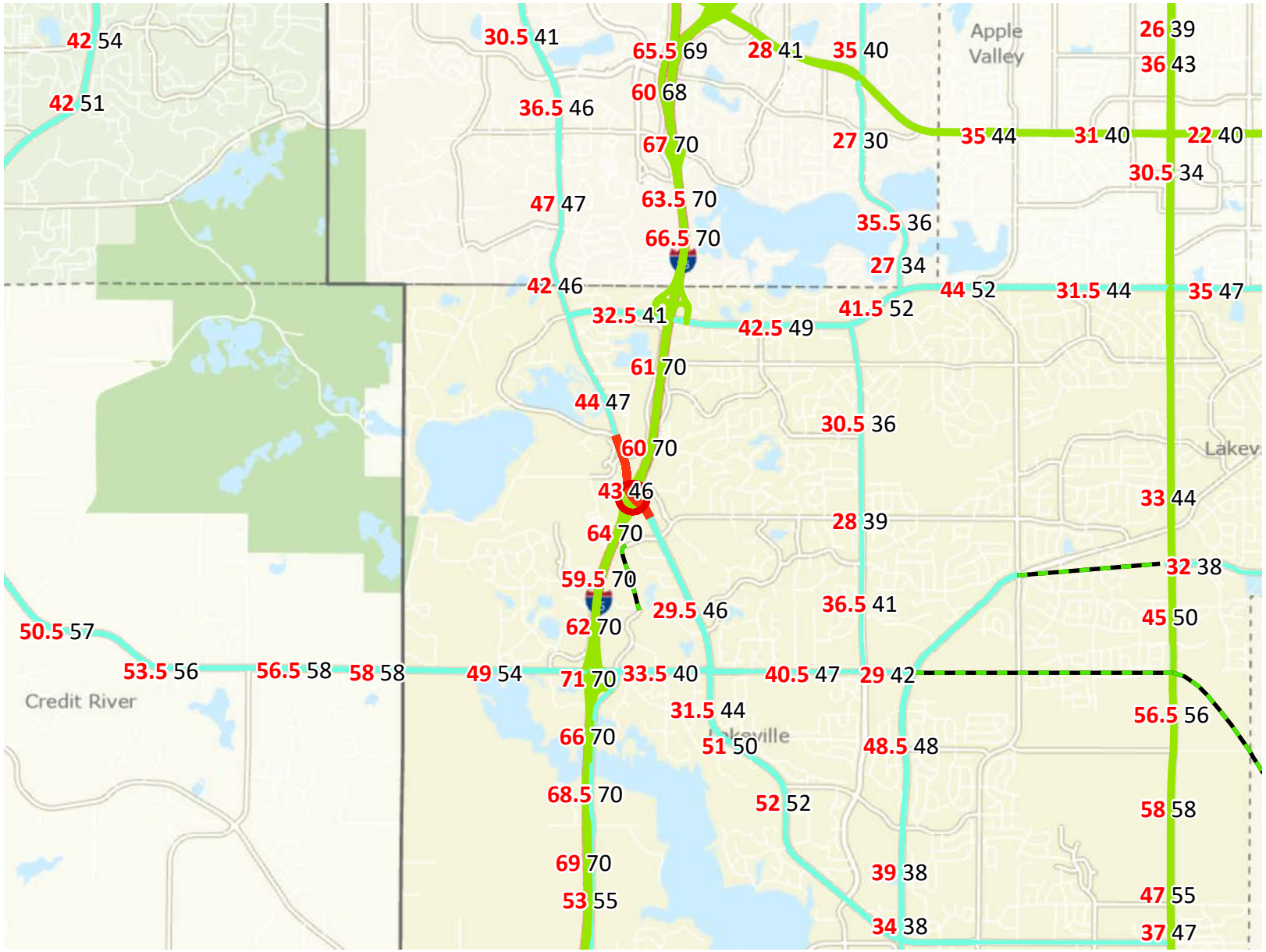
Created: 12/1/2023
LandscapeRSA1

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

METROPOLITAN COUNCIL

Level of Congestion

Strategic Capacity Project: I-35 and CR 5/50 Interchange Reconstruction in Lakeville | Map ID: 1701459227464



Project Points — Principal Arterials — Principal Arterials Planned

Project — A Minor Arterials — A Minor Arterials Planned

0 0.5 1 2 3 4 Miles

Created: 12/1/2023
LandscapeRSA1

For complete disclaimer of accuracy, please visit
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METROPOLITAN COUNCIL

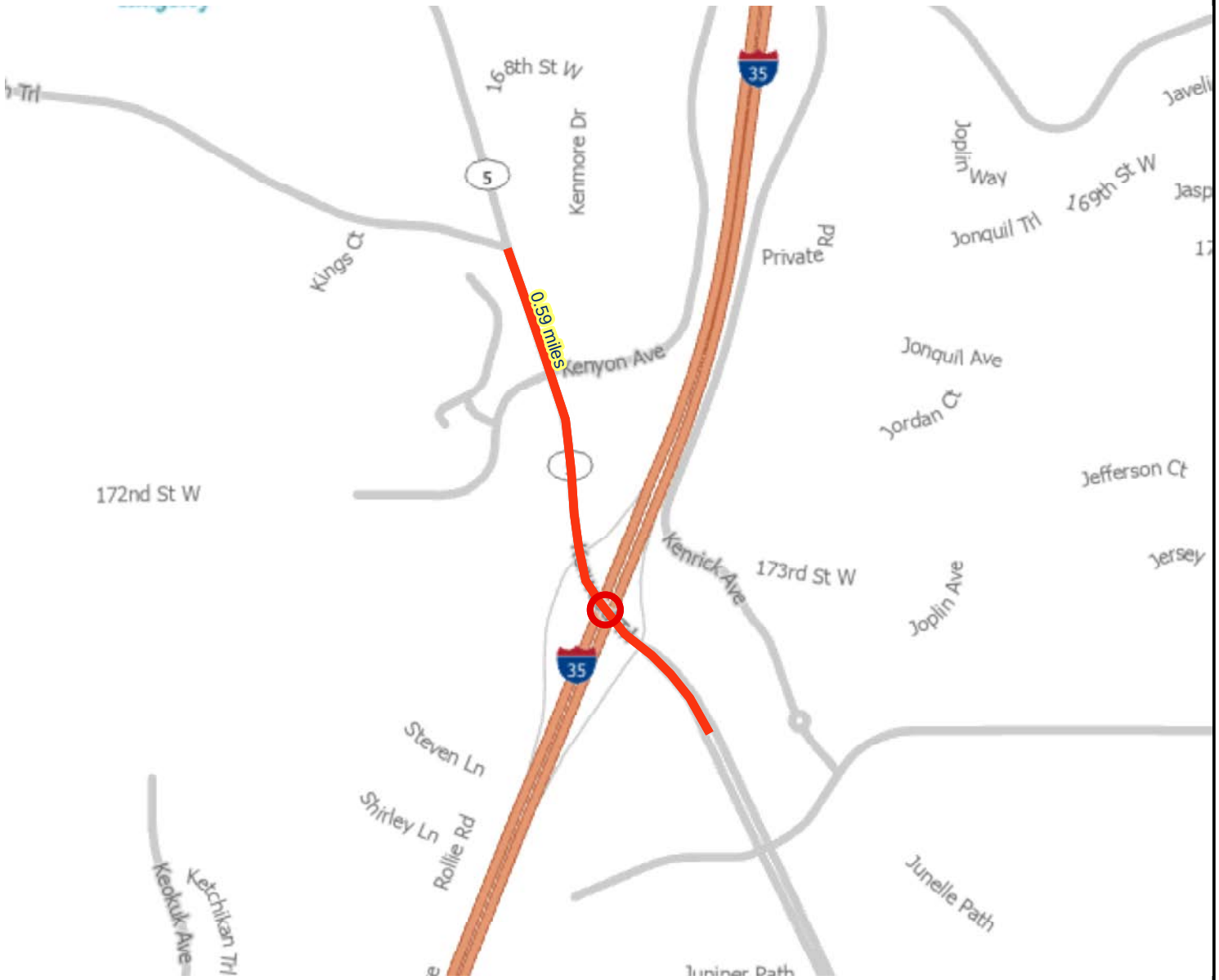
Regional Economy

Strategic Capacity Project: I-35 and CR 5/50 Interchange Reconstruction in Lakeville | Map ID: 1699969125980

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Lakeville
Population: 12724
Employment: 3762
Mfg and Dist Employment: 100



Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.1 0.2 0.4 0.6 0.8 Miles

Created: 11/14/2023
LandscapeRSA5

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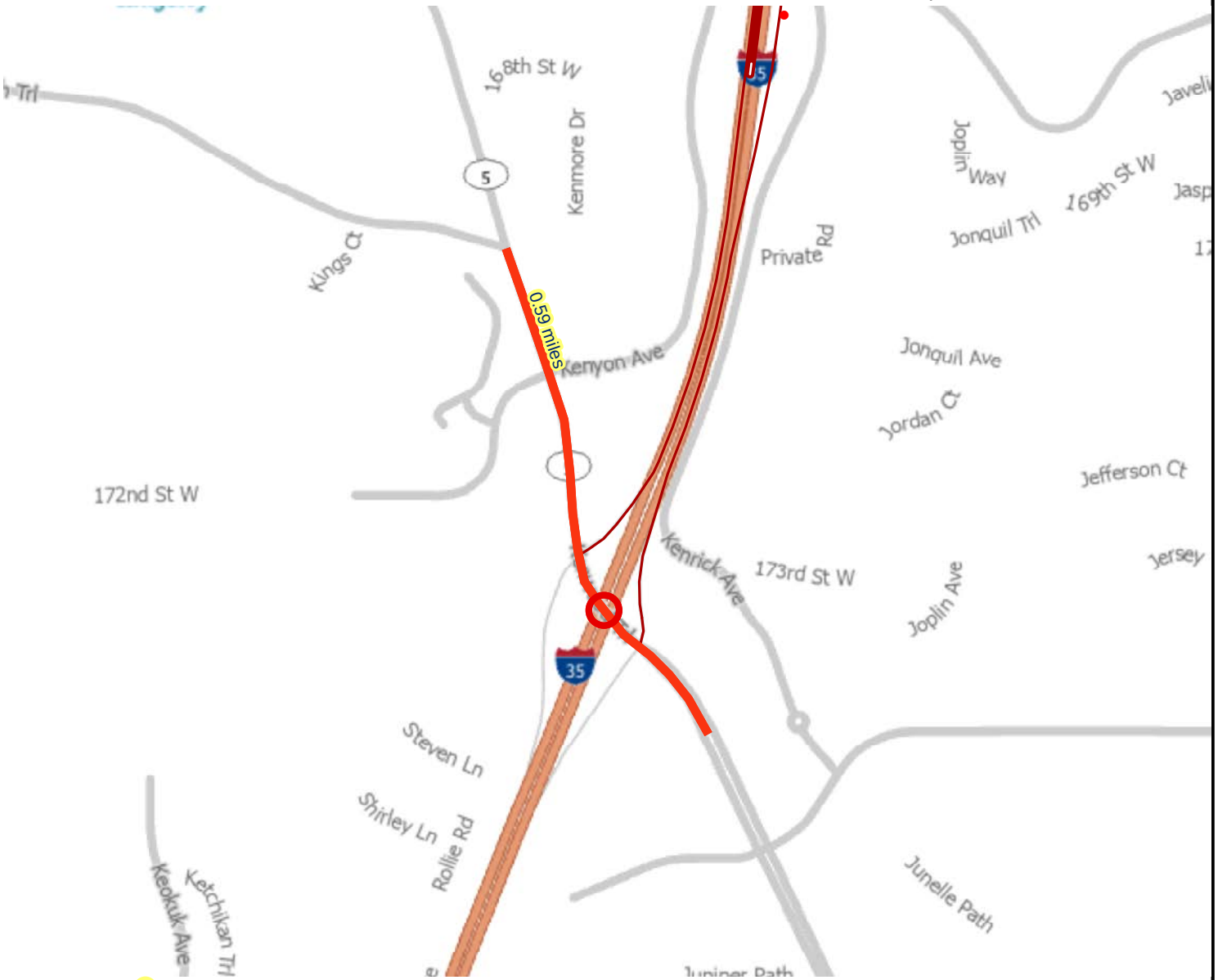
METROPOLITAN COUNCIL

Transit Connections

Strategic Capacity Project: I-35 and CR 5/50 Interchange Reconstruction in Lakeville | Map ID: 1699969125980



Results

Transit with a Direct Connection to project: 467

**indicates Planned Alignments*

Transit Market areas: 4

Project Points	Commuter Rail	Commuter Rail	Arterial Bus Rapid Transit	Undetermined	Light Rail
Project	Dedicated Bus Rapid Transit	Dedicated Bus Rapid Transit	Dedicated Bus Rapid Transit	Arterial Bus Rapid Transit	Modern Streetcar
Project Area	Highway Bus Rapid Transit	Highway Bus Rapid Transit	Highway Bus Rapid Transit	Commuter Rail	Undetermined
Active Stop	Light Rail	Light Rail	Light Rail	Dedicated Bus Rapid Transit	
Arterial Bus Rapid Transit	Arterial Bus Rapid Transit	Transit Routes	Modern Streetcar	Highway Bus Rapid Transit	

0 0.1 0.2 0.4 0.6 0.8 Miles

Created: 11/14/2023
LandscapeRSA3

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METROPOLITAN COUNCIL

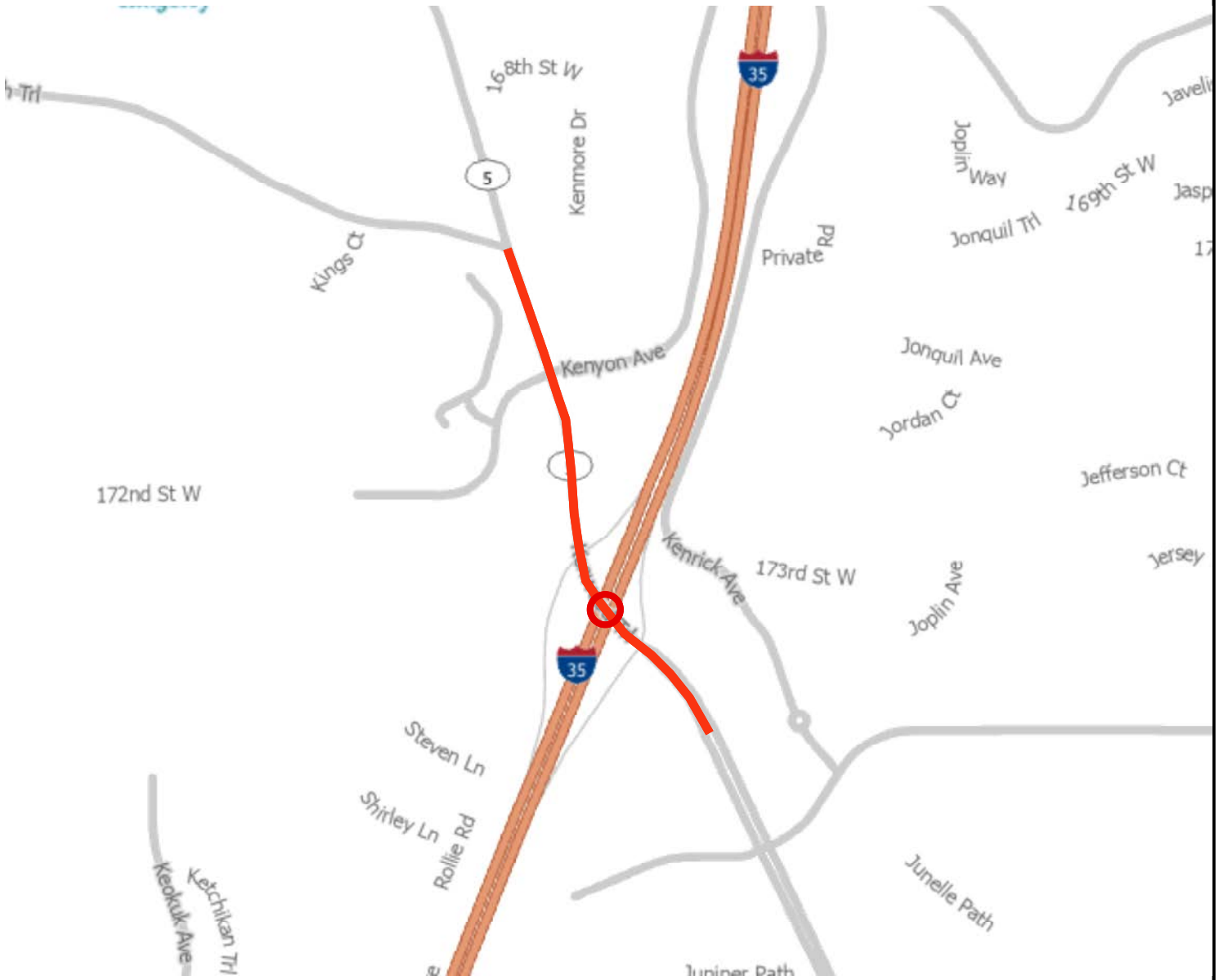
Socio-Economic Conditions

Strategic Capacity Project: I-35 and CR 5/50 Interchange Reconstruction in Lakeville | Map ID: 1699969125980

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 106

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 0.1 0.2 0.4 0.6 0.8 Miles

Created: 11/14/2023
LandscapeRSA2

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METROPOLITAN COUNCIL

CSAH 5/50 Interchange Project
Existing vs. Build Analysis - Kenyon Ave to Kenrick Ave

Existing Conditions (CSAH 50 set to EB/WB direction)

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	22	296	30	
Total Delay (seconds)	0	1,098	3,564	34,928	39,590	
Emissions						Total
CO (kg)	0.19	0.46	0.22	0.59	1.46	
NOx (kg)	0.04	0.09	0.04	0.12	0.29	2.09
VOC (kg)	0.04	0.11	0.05	0.14	0.34	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	16		44	30	
Total Delay (seconds)	15,019	10,784		45,584	71,387	
Emissions						Total
CO (kg)	0.83	0.57		1.60	3.00	
NOx (kg)	0.16	0.11		0.31	0.58	4.27
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #33	CSAH 50 at NB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,216	321		2,927	
Delay (sec/veh)	7	4	52		11	
Total Delay (seconds)	9,730	4,864	16,692		31,286	
Emissions						Total
CO (kg)	0.77	0.57	0.50		1.84	
NOx (kg)	0.15	0.11	0.10		0.36	2.63
VOC (kg)	0.18	0.13	0.12		0.43	

Intersection #34	CSAH 50 at 175th St				3/4 Access	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,525	1,018	44	269	2,856	
Delay (sec/veh)	3	0	11	14	3	
Total Delay (seconds)	4,575	0	484	3,766	8,825	
Emissions						Total
CO (kg)	1.42	0.42	0.03	0.23	2.10	
NOx (kg)	0.28	0.08	0.01	0.05	0.42	3.01
VOC (kg)	0.33	0.10	0.01	0.05	0.49	

Intersection #35	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,229	949	298	443	2,919	
Delay (sec/veh)	23	26	48	58	32	
Total Delay (seconds)	28,267	24,674	14,304	25,694	92,939	
Emissions						Total
CO (kg)	1.43	1.42	0.51	0.76	4.12	
NOx (kg)	0.20	0.28	0.10	0.15	0.73	5.81
VOC (kg)	0.33	0.33	0.12	0.18	0.96	

Intersection #36	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.37	0.26	0.27	0.30	1.20	
NOx (kg)	0.07	0.05	0.05	0.06	0.23	1.71
VOC (kg)	0.09	0.06	0.06	0.07	0.28	

Intersection #37	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	374	293	359		1,026	
Delay (sec/veh)	8	8	10		9	
Total Delay (seconds)	2,992	2,344	3,590		8,926	
Emissions						Total
CO (kg)	0.25	0.17	0.24		0.66	
NOx (kg)	0.05	0.03	0.05		0.13	0.95
VOC (kg)	0.06	0.04	0.06		0.16	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	74,113	52,224	46,319	117,135	289,791	
Emissions						Total
CO (kg)	5.26	3.87	1.77	3.48	14.38	
NOx (kg)	0.95	0.75	0.35	0.69	2.74	20.47
VOC (kg)	1.22	0.90	0.42	0.81	3.35	

Total Volume (All Intersections) 14,735
Total Delay (All Intersections, seconds) 289,791
Total Emissions (CO, NOX, VOC) 20.47

Proposed Build Conditions

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	19	96	12	
Total Delay (seconds)	0	1,098	3,078	11,328	15,504	
Emissions						Total
CO (kg)	0.19	0.46	0.21	0.25	1.11	
NOx (kg)	0.04	0.09	0.04	0.05	0.22	1.59
VOC (kg)	0.04	0.11	0.05	0.06	0.26	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	23		43	32	
Total Delay (seconds)	15,019	15,502		44,548	75,069	
Emissions						Total
CO (kg)	0.83	0.55		1.58	2.96	
NOx (kg)	0.16	0.11		0.31	0.58	4.23
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #133	CSAH 50 at NB I-35 Entrances				Rights Only	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,346			2,736	
Delay (sec/veh)	0	0			0	
Total Delay (seconds)	0	0			0	
Emissions						Total
CO (kg)	0.33	0.24			0.57	
NOx (kg)	0.06	0.05			0.11	0.82
VOC (kg)	0.08	0.06			0.14	

Intersection #134	CSAH 50 at NB I-35 Exit/175th St				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,334	1,004	321	306	2,965	
Delay (sec/veh)	17	7	39	25	17	
Total Delay (seconds)	22,678	7,028	12,519	7,650	49,875	
Emissions						Total
CO (kg)	1.17	0.88	0.40	0.25	2.70	
NOx (kg)	0.23	0.17	0.08	0.05	0.53	3.85
VOC (kg)	0.27	0.20	0.09	0.06	0.62	

Intersection #135	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,245	949	298	406	2,898	
Delay (sec/veh)	24	29	48	53	32	
Total Delay (seconds)	29,880	27,521	14,304	21,518	93,223	
Emissions						Total
CO (kg)	1.55	1.46	0.51	0.66	4.18	
NOx (kg)	0.30	0.28	0.10	0.13	0.81	5.96
VOC (kg)	0.36	0.34	0.12	0.15	0.97	

Intersection #136	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.54	0.26	0.28	0.30	1.38	
NOx (kg)	0.10	0.05	0.05	0.06	0.26	1.95
VOC (kg)	0.12	0.06	0.06	0.07	0.31	

Intersection #137	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	431	293	375		1,099	
Delay (sec/veh)	9	8	7		8	
Total Delay (seconds)	3,879	2,344	2,625		8,848	
Emissions						Total
CO (kg)	0.26	0.28	0.26		0.80	
NOx (kg)	0.05	0.05	0.05		0.15	1.13
VOC (kg)	0.06	0.06	0.06		0.18	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	84,986	61,953	40,211	92,207	279,357	
Emissions						Total
CO (kg)	4.87	4.13	1.66	3.04	13.70	
NOx (kg)	0.94	0.80	0.32	0.60	2.66	19.53
VOC (kg)	1.12	0.96	0.38	0.71	3.17	

Total Volume (All Intersections) 14,705
Total Delay (All Intersections, seconds) 279,357
Total Emissions (CO, NOX, VOC) 19.53

Total Delay CHANGE (All Intersections, seconds) 10,434
Total Emissions CHANGE (CO, NOX, VOC) 0.94

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	22	296	30
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	22	296	30
Total Delay (hr)	0	0	1	10	11
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	41	17	2	14
Total Travel Time (hr)	2	3	2	10	17
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	8	21
Fuel Economy (mpg)	26.3	17.1	11.8	2.0	11.4
CO Emissions (kg)	0.19	0.46	0.22	0.59	1.47
NOx Emissions (kg)	0.04	0.09	0.04	0.12	0.29
VOC Emissions (kg)	0.04	0.11	0.05	0.14	0.34
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	16	44	30
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	16	44	30
Total Delay (hr)	4	3	13	20
Stops / Veh	0.51	0.60	0.81	0.67
Stops (#)	333	406	841	1580
Average Speed (mph)	19	15	11	13
Total Travel Time (hr)	7	5	18	31
Distance Traveled (mi)	135	77	191	403
Fuel Consumed (gal)	12	8	23	43
Fuel Economy (mpg)	11.4	9.4	8.4	9.4
CO Emissions (kg)	0.83	0.57	1.60	3.00
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.70
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	11	17	45

33: NB I-35 & CSAH 50

Direction	EB	WB	NB	All
Future Volume (vph)	1390	1216	321	2927
Control Delay / Veh (s/v)	6	4	52	10
Queue Delay / Veh (s/v)	1	0	0	0
Total Delay / Veh (s/v)	7	4	52	11
Total Delay (hr)	3	1	5	9
Stops / Veh	0.28	0.16	0.71	0.28
Stops (#)	396	200	229	825
Average Speed (mph)	22	26	9	19
Total Travel Time (hr)	7	6	6	19
Distance Traveled (mi)	159	147	52	358
Fuel Consumed (gal)	11	8	7	26
Fuel Economy (mpg)	14.4	18.1	7.4	13.7
CO Emissions (kg)	0.77	0.57	0.50	1.83
NOx Emissions (kg)	0.15	0.11	0.10	0.36
VOC Emissions (kg)	0.18	0.13	0.12	0.42
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	33	12	4	49

34: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1525	1018	44	269	2856
Control Delay / Veh (s/v)	3	0	11	14	3
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	3	0	11	14	3
Total Delay (hr)	1	0	0	1	3
Stops / Veh	0.68	0.03	1.00	1.00	0.49
Stops (#)	1042	32	44	269	1387
Average Speed (mph)	33	35	13	14	30
Total Travel Time (hr)	6	4	0	2	12
Distance Traveled (mi)	185	149	3	26	362
Fuel Consumed (gal)	20	6	0	3	30
Fuel Economy (mpg)	9.1	25.0	NA	7.9	12.1
CO Emissions (kg)	1.42	0.42	0.03	0.23	2.10
NOx Emissions (kg)	0.28	0.08	0.01	0.04	0.41
VOC Emissions (kg)	0.33	0.10	0.01	0.05	0.49
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

35: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1229	949	298	443	2919
Control Delay / Veh (s/v)	23	26	48	58	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	23	26	48	58	32
Total Delay (hr)	8	7	4	7	26
Stops / Veh	0.56	0.60	0.70	0.62	0.60
Stops (#)	691	568	210	276	1745
Average Speed (mph)	15	20	12	6	14
Total Travel Time (hr)	12	12	7	9	39
Distance Traveled (mi)	179	243	79	52	554
Fuel Consumed (gal)	20	20	7	9	57
Fuel Economy (mpg)	8.8	11.9	10.8	5.9	9.7
CO Emissions (kg)	1.43	1.42	0.51	0.62	3.99
NOx Emissions (kg)	0.28	0.28	0.10	0.12	0.78
VOC Emissions (kg)	0.33	0.33	0.12	0.14	0.92
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	16	28	0	0	44

36: Kenrick Ave & Junelle Path

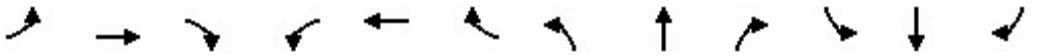
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	6	8	10	13	9
Total Travel Time (hr)	5	3	3	4	15
Distance Traveled (mi)	30	26	31	47	135
Fuel Consumed (gal)	5	4	4	4	17
Fuel Economy (mpg)	5.7	7.1	8.1	10.8	7.8
CO Emissions (kg)	0.37	0.26	0.27	0.30	1.21
NOx Emissions (kg)	0.07	0.05	0.05	0.06	0.24
VOC Emissions (kg)	0.09	0.06	0.06	0.07	0.28
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

37: 175th St & Junelle Path

Direction	EB	WB	NB	All
Future Volume (vph)	374	293	359	1026
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	374	293	359	1026
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	1	1	3
Distance Traveled (mi)	36	20	35	90
Fuel Consumed (gal)	4	2	3	9
Fuel Economy (mpg)	10.1	8.1	10.2	9.6
CO Emissions (kg)	0.25	0.17	0.24	0.66
NOx Emissions (kg)	0.05	0.03	0.05	0.13
VOC Emissions (kg)	0.06	0.04	0.06	0.15
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	19
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	19
Total Delay (hr)	78
Stops / Veh	0.53
Stops (#)	7838
Average Speed (mph)	16
Total Travel Time (hr)	136
Distance Traveled (mi)	2144
Fuel Consumed (gal)	204
Fuel Economy (mpg)	10.5
CO Emissions (kg)	14.26
NOx Emissions (kg)	2.77
VOC Emissions (kg)	3.31
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	138
Performance Index	99.9



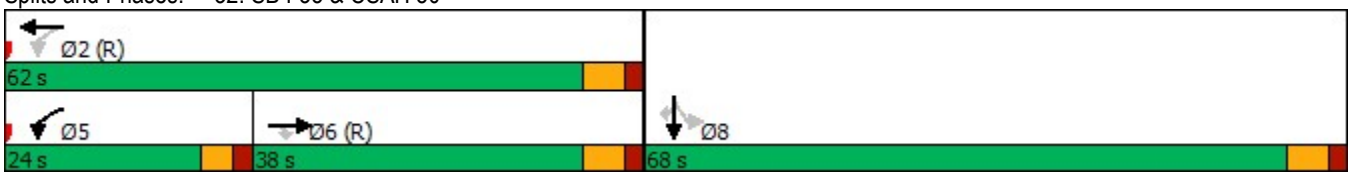
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.379						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	692	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6	2						8		8
Total Split (s)		38.0	38.0	24.0	62.0					68.0	68.0	68.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		50.0	50.0	70.9	69.9					48.1	48.1	48.1
Actuated g/C Ratio		0.38	0.38	0.55	0.54					0.37	0.37	0.37
v/c Ratio		0.35	0.35	0.46	0.27					0.80	0.81	0.15
Control Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
LOS		C	A	B	B					D	D	A
Approach Delay		22.8			16.3						43.1	
Approach LOS		C			B						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 33 (25%), Referenced to phase 2:WBTL and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

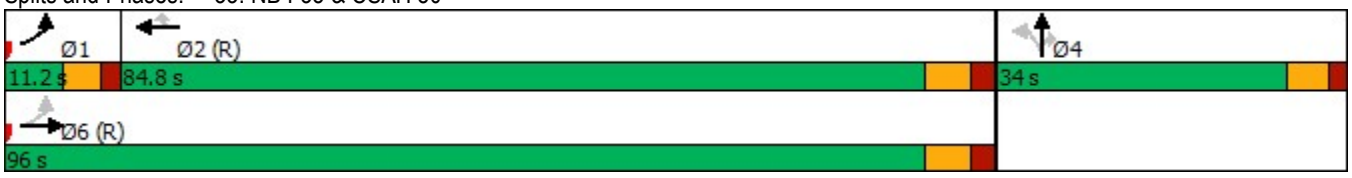
Splits and Phases: 32: SB I-35 & CSAH 50

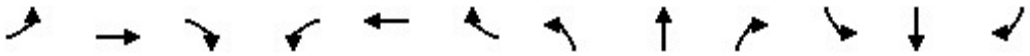


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Future Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Flt Permitted	0.348							0.953				
Satd. Flow (perm)	636	3471	0	0	1827	1553	0	1741	1553	0	0	0
Satd. Flow (RTOR)						722			80			
Peak Hour Factor	0.82	0.95	1.00	1.00	0.92	0.93	0.75	0.25	0.96	1.00	1.00	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1404	0	0	592	722	0	176	199	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Total Split (s)	11.2	96.0			84.8	84.8	34.0	34.0	34.0			
Total Lost Time (s)	5.5	7.0			7.0	7.0		6.0	6.0			
Act Effct Green (s)	99.5	98.0			88.1	88.1		19.0	19.0			
Actuated g/C Ratio	0.77	0.75			0.68	0.68		0.15	0.15			
v/c Ratio	0.13	0.54			0.48	0.56		0.69	0.67			
Control Delay	4.9	6.5			5.3	3.0		66.3	41.9			
Queue Delay	0.0	0.6			0.0	0.0		0.0	0.0			
Total Delay	4.9	7.0			5.3	3.0		66.3	41.9			
LOS	A	A			A	A		E	D			
Approach Delay		6.9			4.1			53.4				
Approach LOS		A			A			D				

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 95 (73%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: NB I-35 & CSAH 50





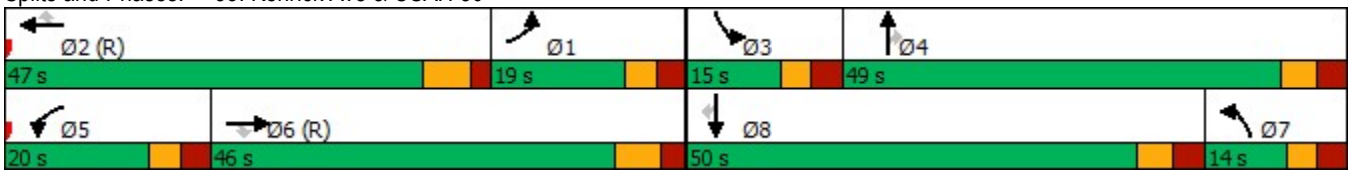
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Future Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Peak Hour Factor	0.91	0.95	0.64	0.70	0.89	0.65	1.00	1.00	0.92	1.00	1.00	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	1247	36	20	1064	88	0	48	0	0	328	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Future Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			193			189			193
Peak Hour Factor	0.87	0.93	0.85	0.81	0.92	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	920	144	143	796	120	152	145	107	204	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	46.0	46.0	20.0	47.0	47.0	14.0	49.0	49.0	15.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	62.1	62.1	16.4	66.0	66.0	11.8	17.0	17.0	9.0	14.1	14.1
Actuated g/C Ratio	0.10	0.48	0.48	0.13	0.51	0.51	0.09	0.13	0.13	0.07	0.11	0.11
v/c Ratio	0.86	0.56	0.17	0.65	0.45	0.14	0.50	0.61	0.29	0.88	0.61	0.53
Control Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
Queue Delay	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 Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
LOS	E	B	A	E	C	A	E	E	A	F	E	B
Approach Delay		23.3			26.0			46.4			58.0	
Approach LOS		C			C			D			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 116 (89%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

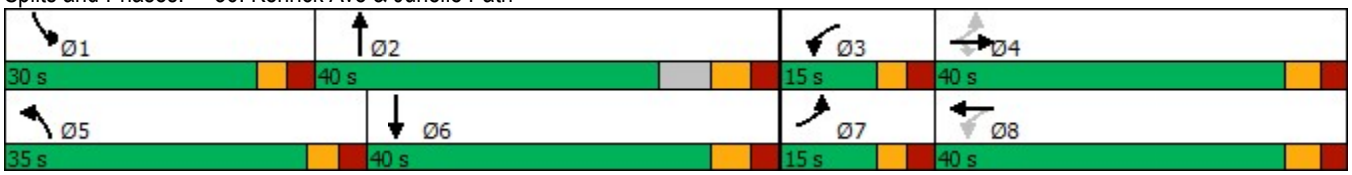
Splits and Phases: 35: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 36: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	123	126	167	158	201
Future Volume (vph)	250	123	126	167	158	201
Satd. Flow (prot)	1745	0	0	1792	1656	0
Flt Permitted				0.981	0.978	
Satd. Flow (perm)	1745	0	0	1792	1656	0
Peak Hour Factor	0.80	0.79	0.81	0.67	0.79	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	469	0	0	405	439	0
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	468	405	439
Demand Flow Rate, veh/h	486	421	457
Vehicles Circulating, veh/h	162	208	324
Vehicles Exiting, veh/h	467	573	324
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	7.3	9.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	486	421	457
Cap Entry Lane, veh/h	1170	1116	992
Entry HV Adj Factor	0.962	0.962	0.961
Flow Entry, veh/h	468	405	439
Cap Entry, veh/h	1125	1074	953
V/C Ratio	0.415	0.377	0.461
Control Delay, s/veh	7.5	7.3	9.3
LOS	A	A	A
95th %tile Queue, veh	2	2	2

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	19	96	12
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	19	96	12
Total Delay (hr)	0	0	1	3	4
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	40	18	4	23
Total Travel Time (hr)	2	3	2	4	10
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	4	16
Fuel Economy (mpg)	26.3	17.1	12.3	4.5	14.9
CO Emissions (kg)	0.19	0.46	0.21	0.25	1.13
NOx Emissions (kg)	0.04	0.09	0.04	0.05	0.22
VOC Emissions (kg)	0.04	0.11	0.05	0.06	0.26
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	23	43	32
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	23	43	32
Total Delay (hr)	4	4	12	21
Stops / Veh	0.51	0.48	0.80	0.63
Stops (#)	333	322	833	1488
Average Speed (mph)	19	10	11	12
Total Travel Time (hr)	7	6	18	31
Distance Traveled (mi)	135	59	191	385
Fuel Consumed (gal)	12	8	23	42
Fuel Economy (mpg)	11.4	7.5	8.5	9.1
CO Emissions (kg)	0.83	0.55	1.58	2.96
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.69
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	13	17	47

133: NB I-35 & CSAH 50

Direction	EB	WB	All
Future Volume (vph)	1390	1346	2736
Control Delay / Veh (s/v)	0	0	0
Queue Delay / Veh (s/v)	0	0	0
Total Delay / Veh (s/v)	0	0	0
Total Delay (hr)	0	0	0
Stops / Veh	0.00	0.00	0.00
Stops (#)	0	0	0
Average Speed (mph)	35	35	35
Total Travel Time (hr)	3	3	6
Distance Traveled (mi)	122	89	211
Fuel Consumed (gal)	5	3	8
Fuel Economy (mpg)	26.2	26.2	26.2
CO Emissions (kg)	0.33	0.24	0.56
NOx Emissions (kg)	0.06	0.05	0.11
VOC Emissions (kg)	0.08	0.06	0.13
Unserved Vehicles (#)	0	0	0
Vehicles in dilemma zone (#)	0	0	0

134: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1334	1004	321	306	2965
Control Delay / Veh (s/v)	17	7	39	25	17
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	17	7	39	25	17
Total Delay (hr)	6	2	3	2	14
Stops / Veh	0.55	0.34	0.54	0.42	0.46
Stops (#)	731	339	172	130	1372
Average Speed (mph)	11	26	10	10	16
Total Travel Time (hr)	8	8	5	3	25
Distance Traveled (mi)	88	225	55	33	402
Fuel Consumed (gal)	17	13	6	4	39
Fuel Economy (mpg)	5.3	17.8	9.6	9.2	10.4
CO Emissions (kg)	1.17	0.88	0.40	0.25	2.70
NOx Emissions (kg)	0.23	0.17	0.08	0.05	0.53
VOC Emissions (kg)	0.27	0.20	0.09	0.06	0.63
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	1	31	0	0	32

135: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1245	949	298	406	2898
Control Delay / Veh (s/v)	24	29	48	53	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	24	29	48	53	32
Total Delay (hr)	8	8	4	6	26
Stops / Veh	0.42	0.60	0.71	0.62	0.54
Stops (#)	528	568	213	250	1559
Average Speed (mph)	19	19	12	7	16
Total Travel Time (hr)	14	13	7	8	42
Distance Traveled (mi)	279	243	79	50	651
Fuel Consumed (gal)	22	21	7	8	58
Fuel Economy (mpg)	12.6	11.6	10.8	6.4	11.2
CO Emissions (kg)	1.55	1.46	0.51	0.55	4.07
NOx Emissions (kg)	0.30	0.28	0.10	0.11	0.79
VOC Emissions (kg)	0.36	0.34	0.12	0.13	0.94
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	35	27	0	0	62

136: Kenrick Ave & Junelle Path

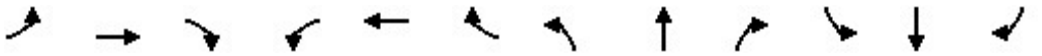
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	13	8	10	13	12
Total Travel Time (hr)	7	3	3	3	17
Distance Traveled (mi)	87	27	33	45	192
Fuel Consumed (gal)	8	4	4	4	20
Fuel Economy (mpg)	11.3	7.2	8.3	10.6	9.8
CO Emissions (kg)	0.54	0.26	0.28	0.30	1.37
NOx Emissions (kg)	0.10	0.05	0.05	0.06	0.27
VOC Emissions (kg)	0.12	0.06	0.06	0.07	0.32
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

137: 175th St

Direction	EB	WB	NB	All
Future Volume (vph)	431	293	375	1099
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	431	293	375	1099
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	2	1	4
Distance Traveled (mi)	33	56	41	130
Fuel Consumed (gal)	4	4	4	11
Fuel Economy (mpg)	8.8	14.3	10.9	11.4
CO Emissions (kg)	0.26	0.28	0.26	0.80
NOx Emissions (kg)	0.05	0.05	0.05	0.16
VOC Emissions (kg)	0.06	0.06	0.06	0.19
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	18
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	18
Total Delay (hr)	75
Stops / Veh	0.46
Stops (#)	6793
Average Speed (mph)	16
Total Travel Time (hr)	135
Distance Traveled (mi)	2212
Fuel Consumed (gal)	195
Fuel Economy (mpg)	11.4
CO Emissions (kg)	13.60
NOx Emissions (kg)	2.65
VOC Emissions (kg)	3.15
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	141
Performance Index	94.0



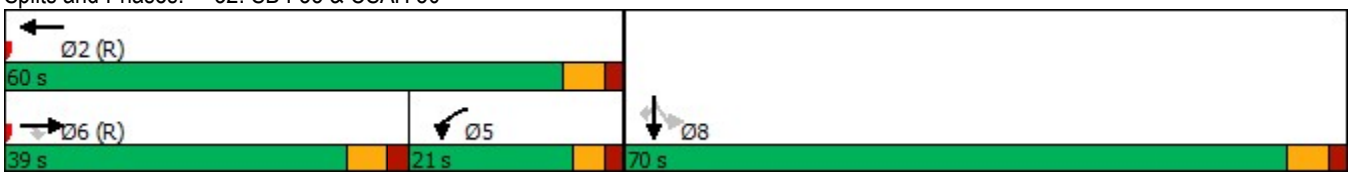
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

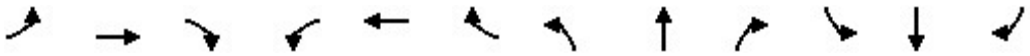
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6							8		8
Total Split (s)		39.0	39.0	21.0	60.0					70.0	70.0	70.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		48.5	48.5	16.0	69.5					48.5	48.5	48.5
Actuated g/C Ratio		0.37	0.37	0.12	0.53					0.37	0.37	0.37
v/c Ratio		0.36	0.35	0.56	0.28					0.80	0.81	0.15
Control Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
LOS		C	A	D	B					D	D	A
Approach Delay		22.8			24.0						42.3	
Approach LOS		C			C						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: SB I-35 & CSAH 50





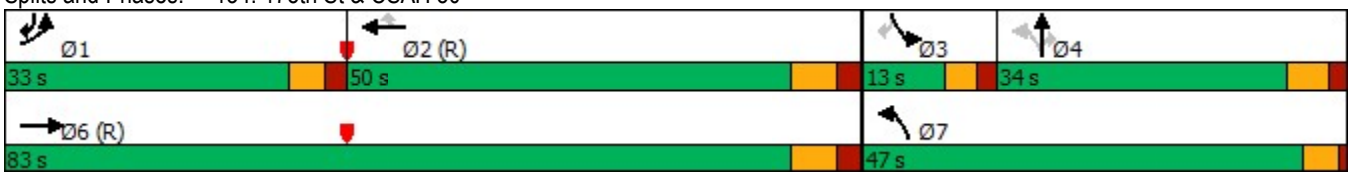
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Future Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Satd. Flow (prot)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Peak Hour Factor	1.00	0.95	0.82	1.00	0.94	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)						50%						
Lane Group Flow (vph)	0	1404	68	0	1078	361	0	0	0	0	0	0
Sign Control		Free			Free			Yield			Yield	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Future Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Satd. Flow (prot)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Flt Permitted	0.950						0.950	0.954		0.950		
Satd. Flow (perm)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Satd. Flow (RTOR)						113			137			225
Peak Hour Factor	0.91	0.96	1.00	1.00	0.89	0.65	0.75	0.25	0.96	0.93	1.00	0.82
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	348	1059	0	0	1064	88	88	88	199	40	0	328
Turn Type	Prot	NA			NA	Perm	pm+pt	NA	Perm	Prot		pm+ov
Protected Phases	1	6			2		7	4		3		1
Permitted Phases						2	4		4	3		3
Total Split (s)	33.0	83.0			50.0	50.0	47.0	34.0	34.0	13.0		33.0
Total Lost Time (s)	5.5	7.0			7.0	7.0	4.5	6.0	6.0	5.0		5.5
Act Effct Green (s)	19.0	94.1			69.6	69.6	24.4	22.9	12.7	7.3		24.8
Actuated g/C Ratio	0.15	0.72			0.54	0.54	0.19	0.18	0.10	0.06		0.19
v/c Ratio	0.71	0.42			0.40	0.10	0.28	0.30	0.72	0.41		0.69
Control Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
LOS	D	A			A	A	D	D	C	E		B
Approach Delay		17.3			7.3			39.3			24.0	
Approach LOS		B			A			D			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 9 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

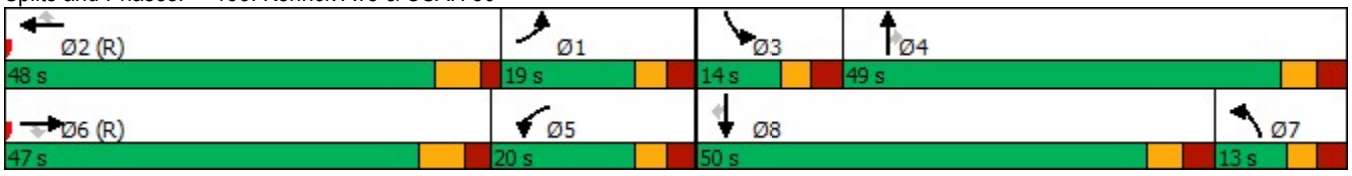
Splits and Phases: 134: 175th St & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Future Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			185			134			180
Peak Hour Factor	0.87	0.94	0.88	0.88	0.91	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	903	165	148	789	120	152	145	107	164	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	47.0	47.0	20.0	48.0	48.0	13.0	49.0	49.0	14.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	64.5	64.5	14.0	66.0	66.0	11.8	18.0	18.0	8.0	14.1	14.1
Actuated g/C Ratio	0.10	0.50	0.50	0.11	0.51	0.51	0.09	0.14	0.14	0.06	0.11	0.11
v/c Ratio	0.86	0.52	0.19	0.80	0.45	0.14	0.50	0.58	0.32	0.79	0.61	0.55
Control Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
Queue Delay	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 Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
LOS	E	B	A	F	C	A	E	E	A	F	E	B
Approach Delay		24.5			28.7			46.5			53.1	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

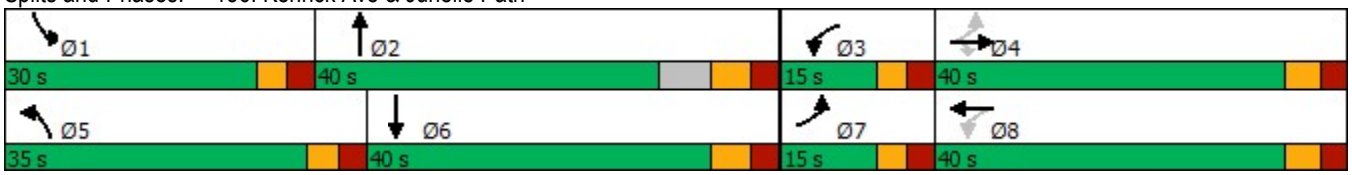
Splits and Phases: 135: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 136: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	180	126	167	174	201
Future Volume (vph)	250	180	126	167	174	201
Satd. Flow (prot)	1726	0	0	1792	1736	1553
Flt Permitted				0.981	0.950	
Satd. Flow (perm)	1726	0	0	1792	1736	1553
Peak Hour Factor	0.80	0.85	0.81	0.67	0.89	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	525	0	0	405	196	239
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	524	405	435
Demand Flow Rate, veh/h	544	421	453
Vehicles Circulating, veh/h	162	204	324
Vehicles Exiting, veh/h	463	324	382
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.3	7.2	6.1
Approach LOS	A	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	TR	LT	L	R
Assumed Moves	TR	LT	L	R
RT Channelized				Yield
Lane Util	1.000	1.000	1.000	
Follow-Up Headway, s	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	249
Entry Flow, veh/h	544	421	204	992
Cap Entry Lane, veh/h	1170	1121	992	0.962
Entry HV Adj Factor	0.962	0.962	0.961	239
Flow Entry, veh/h	524	405	196	953
Cap Entry, veh/h	1126	1078	953	0.251
V/C Ratio	0.465	0.376	0.206	6.3
Control Delay, s/veh	8.3	7.2	5.8	A
LOS	A	A	A	1
95th %tile Queue, veh	3	2	1	

CSAH 5/50 Interchange Project
Existing vs. Build Analysis - Kenyon Ave to Kenrick Ave

Existing Conditions (CSAH 50 set to EB/WB direction)

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	22	296	30	
Total Delay (seconds)	0	1,098	3,564	34,928	39,590	
Emissions						Total
CO (kg)	0.19	0.46	0.22	0.59	1.46	
NOx (kg)	0.04	0.09	0.04	0.12	0.29	2.09
VOC (kg)	0.04	0.11	0.05	0.14	0.34	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	16		44	30	
Total Delay (seconds)	15,019	10,784		45,584	71,387	
Emissions						Total
CO (kg)	0.83	0.57		1.60	3.00	
NOx (kg)	0.16	0.11		0.31	0.58	4.27
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #33	CSAH 50 at NB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,216	321		2,927	
Delay (sec/veh)	7	4	52		11	
Total Delay (seconds)	9,730	4,864	16,692		31,286	
Emissions						Total
CO (kg)	0.77	0.57	0.50		1.84	
NOx (kg)	0.15	0.11	0.10		0.36	2.63
VOC (kg)	0.18	0.13	0.12		0.43	

Intersection #34	CSAH 50 at 175th St				3/4 Access	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,525	1,018	44	269	2,856	
Delay (sec/veh)	3	0	11	14	3	
Total Delay (seconds)	4,575	0	484	3,766	8,825	
Emissions						Total
CO (kg)	1.42	0.42	0.03	0.23	2.10	
NOx (kg)	0.28	0.08	0.01	0.05	0.42	3.01
VOC (kg)	0.33	0.10	0.01	0.05	0.49	

Intersection #35	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,229	949	298	443	2,919	
Delay (sec/veh)	23	26	48	58	32	
Total Delay (seconds)	28,267	24,674	14,304	25,694	92,939	
Emissions						Total
CO (kg)	1.43	1.42	0.51	0.76	4.12	
NOx (kg)	0.20	0.28	0.10	0.15	0.73	5.81
VOC (kg)	0.33	0.33	0.12	0.18	0.96	

Intersection #36	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.37	0.26	0.27	0.30	1.20	
NOx (kg)	0.07	0.05	0.05	0.06	0.23	1.71
VOC (kg)	0.09	0.06	0.06	0.07	0.28	

Intersection #37	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	374	293	359		1,026	
Delay (sec/veh)	8	8	10		9	
Total Delay (seconds)	2,992	2,344	3,590		8,926	
Emissions						Total
CO (kg)	0.25	0.17	0.24		0.66	
NOx (kg)	0.05	0.03	0.05		0.13	0.95
VOC (kg)	0.06	0.04	0.06		0.16	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	74,113	52,224	46,319	117,135	289,791	
Emissions						Total
CO (kg)	5.26	3.87	1.77	3.48	14.38	
NOx (kg)	0.95	0.75	0.35	0.69	2.74	20.47
VOC (kg)	1.22	0.90	0.42	0.81	3.35	

Total Volume (All Intersections) 14,735
Total Delay (All Intersections, seconds) 289,791
Total Emissions (CO, NOX, VOC) 20.47

Proposed Build Conditions

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	19	96	12	
Total Delay (seconds)	0	1,098	3,078	11,328	15,504	
Emissions						Total
CO (kg)	0.19	0.46	0.21	0.25	1.11	
NOx (kg)	0.04	0.09	0.04	0.05	0.22	1.59
VOC (kg)	0.04	0.11	0.05	0.06	0.26	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	23		43	32	
Total Delay (seconds)	15,019	15,502		44,548	75,069	
Emissions						Total
CO (kg)	0.83	0.55		1.58	2.96	
NOx (kg)	0.16	0.11		0.31	0.58	4.23
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #133	CSAH 50 at NB I-35 Entrances				Rights Only	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,346			2,736	
Delay (sec/veh)	0	0			0	
Total Delay (seconds)	0	0			0	
Emissions						Total
CO (kg)	0.33	0.24			0.57	
NOx (kg)	0.06	0.05			0.11	0.82
VOC (kg)	0.08	0.06			0.14	

Intersection #134	CSAH 50 at NB I-35 Exit/175th St				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,334	1,004	321	306	2,965	
Delay (sec/veh)	17	7	39	25	17	
Total Delay (seconds)	22,678	7,028	12,519	7,650	49,875	
Emissions						Total
CO (kg)	1.17	0.88	0.40	0.25	2.70	
NOx (kg)	0.23	0.17	0.08	0.05	0.53	3.85
VOC (kg)	0.27	0.20	0.09	0.06	0.62	

Intersection #135	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,245	949	298	406	2,898	
Delay (sec/veh)	24	29	48	53	32	
Total Delay (seconds)	29,880	27,521	14,304	21,518	93,223	
Emissions						Total
CO (kg)	1.55	1.46	0.51	0.66	4.18	
NOx (kg)	0.30	0.28	0.10	0.13	0.81	5.96
VOC (kg)	0.36	0.34	0.12	0.15	0.97	

Intersection #136	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.54	0.26	0.28	0.30	1.38	
NOx (kg)	0.10	0.05	0.05	0.06	0.26	1.95
VOC (kg)	0.12	0.06	0.06	0.07	0.31	

Intersection #137	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	431	293	375		1,099	
Delay (sec/veh)	9	8	7		8	
Total Delay (seconds)	3,879	2,344	2,625		8,848	
Emissions						Total
CO (kg)	0.26	0.28	0.26		0.80	
NOx (kg)	0.05	0.05	0.05		0.15	1.13
VOC (kg)	0.06	0.06	0.06		0.18	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	84,986	61,953	40,211	92,207	279,357	
Emissions						Total
CO (kg)	4.87	4.13	1.66	3.04	13.70	
NOx (kg)	0.94	0.80	0.32	0.60	2.66	19.53
VOC (kg)	1.12	0.96	0.38	0.71	3.17	

Total Volume (All Intersections) 14,705
Total Delay (All Intersections, seconds) 279,357
Total Emissions (CO, NOX, VOC) 19.53

Total Delay CHANGE (All Intersections, seconds) 10,434
Total Emissions CHANGE (CO, NOX, VOC) 0.94

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	22	296	30
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	22	296	30
Total Delay (hr)	0	0	1	10	11
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	41	17	2	14
Total Travel Time (hr)	2	3	2	10	17
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	8	21
Fuel Economy (mpg)	26.3	17.1	11.8	2.0	11.4
CO Emissions (kg)	0.19	0.46	0.22	0.59	1.47
NOx Emissions (kg)	0.04	0.09	0.04	0.12	0.29
VOC Emissions (kg)	0.04	0.11	0.05	0.14	0.34
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	16	44	30
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	16	44	30
Total Delay (hr)	4	3	13	20
Stops / Veh	0.51	0.60	0.81	0.67
Stops (#)	333	406	841	1580
Average Speed (mph)	19	15	11	13
Total Travel Time (hr)	7	5	18	31
Distance Traveled (mi)	135	77	191	403
Fuel Consumed (gal)	12	8	23	43
Fuel Economy (mpg)	11.4	9.4	8.4	9.4
CO Emissions (kg)	0.83	0.57	1.60	3.00
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.70
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	11	17	45

33: NB I-35 & CSAH 50

Direction	EB	WB	NB	All
Future Volume (vph)	1390	1216	321	2927
Control Delay / Veh (s/v)	6	4	52	10
Queue Delay / Veh (s/v)	1	0	0	0
Total Delay / Veh (s/v)	7	4	52	11
Total Delay (hr)	3	1	5	9
Stops / Veh	0.28	0.16	0.71	0.28
Stops (#)	396	200	229	825
Average Speed (mph)	22	26	9	19
Total Travel Time (hr)	7	6	6	19
Distance Traveled (mi)	159	147	52	358
Fuel Consumed (gal)	11	8	7	26
Fuel Economy (mpg)	14.4	18.1	7.4	13.7
CO Emissions (kg)	0.77	0.57	0.50	1.83
NOx Emissions (kg)	0.15	0.11	0.10	0.36
VOC Emissions (kg)	0.18	0.13	0.12	0.42
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	33	12	4	49

34: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1525	1018	44	269	2856
Control Delay / Veh (s/v)	3	0	11	14	3
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	3	0	11	14	3
Total Delay (hr)	1	0	0	1	3
Stops / Veh	0.68	0.03	1.00	1.00	0.49
Stops (#)	1042	32	44	269	1387
Average Speed (mph)	33	35	13	14	30
Total Travel Time (hr)	6	4	0	2	12
Distance Traveled (mi)	185	149	3	26	362
Fuel Consumed (gal)	20	6	0	3	30
Fuel Economy (mpg)	9.1	25.0	NA	7.9	12.1
CO Emissions (kg)	1.42	0.42	0.03	0.23	2.10
NOx Emissions (kg)	0.28	0.08	0.01	0.04	0.41
VOC Emissions (kg)	0.33	0.10	0.01	0.05	0.49
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

35: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1229	949	298	443	2919
Control Delay / Veh (s/v)	23	26	48	58	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	23	26	48	58	32
Total Delay (hr)	8	7	4	7	26
Stops / Veh	0.56	0.60	0.70	0.62	0.60
Stops (#)	691	568	210	276	1745
Average Speed (mph)	15	20	12	6	14
Total Travel Time (hr)	12	12	7	9	39
Distance Traveled (mi)	179	243	79	52	554
Fuel Consumed (gal)	20	20	7	9	57
Fuel Economy (mpg)	8.8	11.9	10.8	5.9	9.7
CO Emissions (kg)	1.43	1.42	0.51	0.62	3.99
NOx Emissions (kg)	0.28	0.28	0.10	0.12	0.78
VOC Emissions (kg)	0.33	0.33	0.12	0.14	0.92
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	16	28	0	0	44

36: Kenrick Ave & Junelle Path

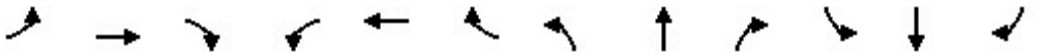
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	6	8	10	13	9
Total Travel Time (hr)	5	3	3	4	15
Distance Traveled (mi)	30	26	31	47	135
Fuel Consumed (gal)	5	4	4	4	17
Fuel Economy (mpg)	5.7	7.1	8.1	10.8	7.8
CO Emissions (kg)	0.37	0.26	0.27	0.30	1.21
NOx Emissions (kg)	0.07	0.05	0.05	0.06	0.24
VOC Emissions (kg)	0.09	0.06	0.06	0.07	0.28
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

37: 175th St & Junelle Path

Direction	EB	WB	NB	All
Future Volume (vph)	374	293	359	1026
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	374	293	359	1026
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	1	1	3
Distance Traveled (mi)	36	20	35	90
Fuel Consumed (gal)	4	2	3	9
Fuel Economy (mpg)	10.1	8.1	10.2	9.6
CO Emissions (kg)	0.25	0.17	0.24	0.66
NOx Emissions (kg)	0.05	0.03	0.05	0.13
VOC Emissions (kg)	0.06	0.04	0.06	0.15
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	19
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	19
Total Delay (hr)	78
Stops / Veh	0.53
Stops (#)	7838
Average Speed (mph)	16
Total Travel Time (hr)	136
Distance Traveled (mi)	2144
Fuel Consumed (gal)	204
Fuel Economy (mpg)	10.5
CO Emissions (kg)	14.26
NOx Emissions (kg)	2.77
VOC Emissions (kg)	3.31
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	138
Performance Index	99.9



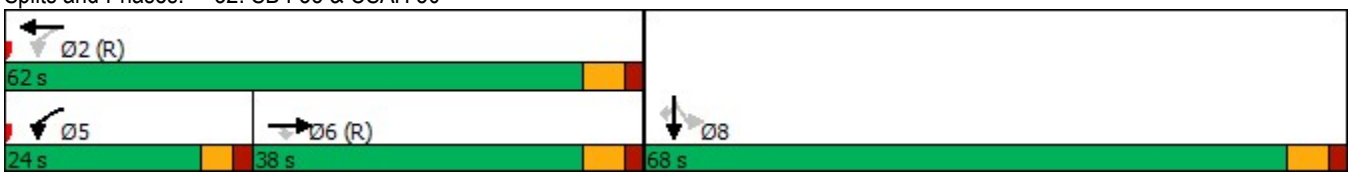
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.379						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	692	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6	2						8		8
Total Split (s)		38.0	38.0	24.0	62.0					68.0	68.0	68.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		50.0	50.0	70.9	69.9					48.1	48.1	48.1
Actuated g/C Ratio		0.38	0.38	0.55	0.54					0.37	0.37	0.37
v/c Ratio		0.35	0.35	0.46	0.27					0.80	0.81	0.15
Control Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
LOS		C	A	B	B					D	D	A
Approach Delay		22.8			16.3						43.1	
Approach LOS		C			B						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 33 (25%), Referenced to phase 2:WBTL and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

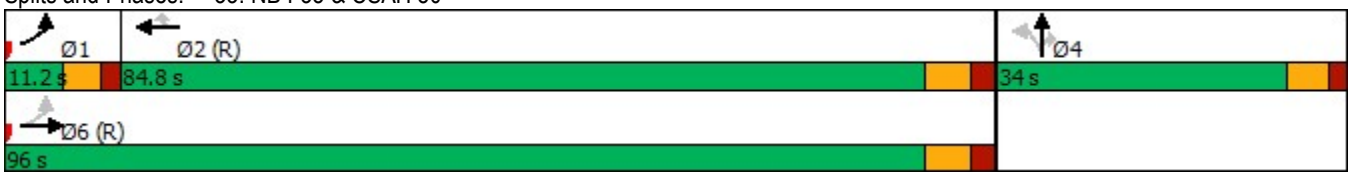
Splits and Phases: 32: SB I-35 & CSAH 50

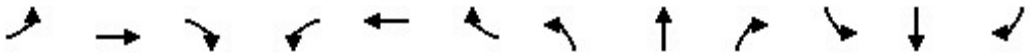


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Future Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Flt Permitted	0.348							0.953				
Satd. Flow (perm)	636	3471	0	0	1827	1553	0	1741	1553	0	0	0
Satd. Flow (RTOR)						722			80			
Peak Hour Factor	0.82	0.95	1.00	1.00	0.92	0.93	0.75	0.25	0.96	1.00	1.00	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1404	0	0	592	722	0	176	199	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Total Split (s)	11.2	96.0			84.8	84.8	34.0	34.0	34.0			
Total Lost Time (s)	5.5	7.0			7.0	7.0		6.0	6.0			
Act Effct Green (s)	99.5	98.0			88.1	88.1		19.0	19.0			
Actuated g/C Ratio	0.77	0.75			0.68	0.68		0.15	0.15			
v/c Ratio	0.13	0.54			0.48	0.56		0.69	0.67			
Control Delay	4.9	6.5			5.3	3.0		66.3	41.9			
Queue Delay	0.0	0.6			0.0	0.0		0.0	0.0			
Total Delay	4.9	7.0			5.3	3.0		66.3	41.9			
LOS	A	A			A	A		E	D			
Approach Delay		6.9			4.1			53.4				
Approach LOS		A			A			D				

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 95 (73%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: NB I-35 & CSAH 50





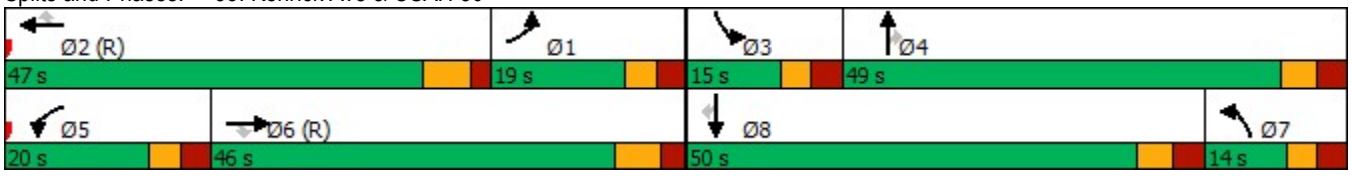
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Future Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Peak Hour Factor	0.91	0.95	0.64	0.70	0.89	0.65	1.00	1.00	0.92	1.00	1.00	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	1247	36	20	1064	88	0	48	0	0	328	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Future Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			193			189			193
Peak Hour Factor	0.87	0.93	0.85	0.81	0.92	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	920	144	143	796	120	152	145	107	204	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	46.0	46.0	20.0	47.0	47.0	14.0	49.0	49.0	15.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	62.1	62.1	16.4	66.0	66.0	11.8	17.0	17.0	9.0	14.1	14.1
Actuated g/C Ratio	0.10	0.48	0.48	0.13	0.51	0.51	0.09	0.13	0.13	0.07	0.11	0.11
v/c Ratio	0.86	0.56	0.17	0.65	0.45	0.14	0.50	0.61	0.29	0.88	0.61	0.53
Control Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
Queue Delay	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 Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
LOS	E	B	A	E	C	A	E	E	A	F	E	B
Approach Delay		23.3			26.0			46.4			58.0	
Approach LOS		C			C			D			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 116 (89%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

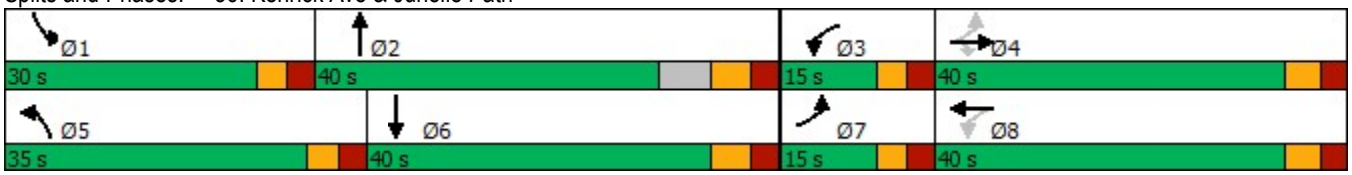
Splits and Phases: 35: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 36: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	123	126	167	158	201
Future Volume (vph)	250	123	126	167	158	201
Satd. Flow (prot)	1745	0	0	1792	1656	0
Flt Permitted				0.981	0.978	
Satd. Flow (perm)	1745	0	0	1792	1656	0
Peak Hour Factor	0.80	0.79	0.81	0.67	0.79	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	469	0	0	405	439	0
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	468	405	439
Demand Flow Rate, veh/h	486	421	457
Vehicles Circulating, veh/h	162	208	324
Vehicles Exiting, veh/h	467	573	324
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	7.3	9.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	486	421	457
Cap Entry Lane, veh/h	1170	1116	992
Entry HV Adj Factor	0.962	0.962	0.961
Flow Entry, veh/h	468	405	439
Cap Entry, veh/h	1125	1074	953
V/C Ratio	0.415	0.377	0.461
Control Delay, s/veh	7.5	7.3	9.3
LOS	A	A	A
95th %tile Queue, veh	2	2	2

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	19	96	12
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	19	96	12
Total Delay (hr)	0	0	1	3	4
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	40	18	4	23
Total Travel Time (hr)	2	3	2	4	10
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	4	16
Fuel Economy (mpg)	26.3	17.1	12.3	4.5	14.9
CO Emissions (kg)	0.19	0.46	0.21	0.25	1.13
NOx Emissions (kg)	0.04	0.09	0.04	0.05	0.22
VOC Emissions (kg)	0.04	0.11	0.05	0.06	0.26
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	23	43	32
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	23	43	32
Total Delay (hr)	4	4	12	21
Stops / Veh	0.51	0.48	0.80	0.63
Stops (#)	333	322	833	1488
Average Speed (mph)	19	10	11	12
Total Travel Time (hr)	7	6	18	31
Distance Traveled (mi)	135	59	191	385
Fuel Consumed (gal)	12	8	23	42
Fuel Economy (mpg)	11.4	7.5	8.5	9.1
CO Emissions (kg)	0.83	0.55	1.58	2.96
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.69
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	13	17	47

133: NB I-35 & CSAH 50

Direction	EB	WB	All
Future Volume (vph)	1390	1346	2736
Control Delay / Veh (s/v)	0	0	0
Queue Delay / Veh (s/v)	0	0	0
Total Delay / Veh (s/v)	0	0	0
Total Delay (hr)	0	0	0
Stops / Veh	0.00	0.00	0.00
Stops (#)	0	0	0
Average Speed (mph)	35	35	35
Total Travel Time (hr)	3	3	6
Distance Traveled (mi)	122	89	211
Fuel Consumed (gal)	5	3	8
Fuel Economy (mpg)	26.2	26.2	26.2
CO Emissions (kg)	0.33	0.24	0.56
NOx Emissions (kg)	0.06	0.05	0.11
VOC Emissions (kg)	0.08	0.06	0.13
Unserved Vehicles (#)	0	0	0
Vehicles in dilemma zone (#)	0	0	0

134: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1334	1004	321	306	2965
Control Delay / Veh (s/v)	17	7	39	25	17
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	17	7	39	25	17
Total Delay (hr)	6	2	3	2	14
Stops / Veh	0.55	0.34	0.54	0.42	0.46
Stops (#)	731	339	172	130	1372
Average Speed (mph)	11	26	10	10	16
Total Travel Time (hr)	8	8	5	3	25
Distance Traveled (mi)	88	225	55	33	402
Fuel Consumed (gal)	17	13	6	4	39
Fuel Economy (mpg)	5.3	17.8	9.6	9.2	10.4
CO Emissions (kg)	1.17	0.88	0.40	0.25	2.70
NOx Emissions (kg)	0.23	0.17	0.08	0.05	0.53
VOC Emissions (kg)	0.27	0.20	0.09	0.06	0.63
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	1	31	0	0	32

135: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1245	949	298	406	2898
Control Delay / Veh (s/v)	24	29	48	53	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	24	29	48	53	32
Total Delay (hr)	8	8	4	6	26
Stops / Veh	0.42	0.60	0.71	0.62	0.54
Stops (#)	528	568	213	250	1559
Average Speed (mph)	19	19	12	7	16
Total Travel Time (hr)	14	13	7	8	42
Distance Traveled (mi)	279	243	79	50	651
Fuel Consumed (gal)	22	21	7	8	58
Fuel Economy (mpg)	12.6	11.6	10.8	6.4	11.2
CO Emissions (kg)	1.55	1.46	0.51	0.55	4.07
NOx Emissions (kg)	0.30	0.28	0.10	0.11	0.79
VOC Emissions (kg)	0.36	0.34	0.12	0.13	0.94
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	35	27	0	0	62

136: Kenrick Ave & Junelle Path

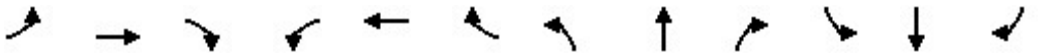
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	13	8	10	13	12
Total Travel Time (hr)	7	3	3	3	17
Distance Traveled (mi)	87	27	33	45	192
Fuel Consumed (gal)	8	4	4	4	20
Fuel Economy (mpg)	11.3	7.2	8.3	10.6	9.8
CO Emissions (kg)	0.54	0.26	0.28	0.30	1.37
NOx Emissions (kg)	0.10	0.05	0.05	0.06	0.27
VOC Emissions (kg)	0.12	0.06	0.06	0.07	0.32
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

137: 175th St

Direction	EB	WB	NB	All
Future Volume (vph)	431	293	375	1099
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	431	293	375	1099
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	2	1	4
Distance Traveled (mi)	33	56	41	130
Fuel Consumed (gal)	4	4	4	11
Fuel Economy (mpg)	8.8	14.3	10.9	11.4
CO Emissions (kg)	0.26	0.28	0.26	0.80
NOx Emissions (kg)	0.05	0.05	0.05	0.16
VOC Emissions (kg)	0.06	0.06	0.06	0.19
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	18
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	18
Total Delay (hr)	75
Stops / Veh	0.46
Stops (#)	6793
Average Speed (mph)	16
Total Travel Time (hr)	135
Distance Traveled (mi)	2212
Fuel Consumed (gal)	195
Fuel Economy (mpg)	11.4
CO Emissions (kg)	13.60
NOx Emissions (kg)	2.65
VOC Emissions (kg)	3.15
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	141
Performance Index	94.0



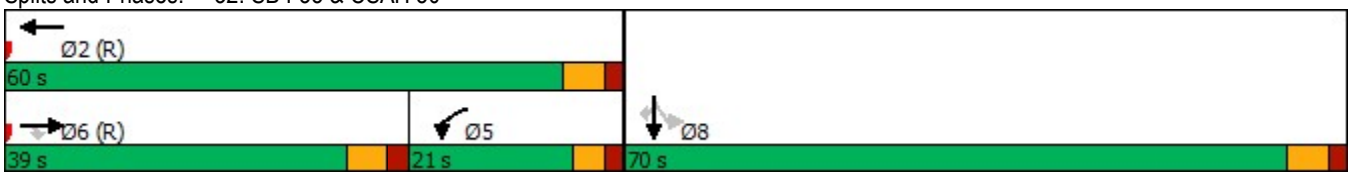
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

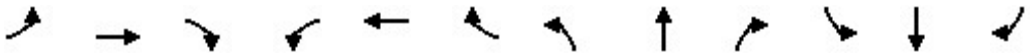
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6							8		8
Total Split (s)		39.0	39.0	21.0	60.0					70.0	70.0	70.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		48.5	48.5	16.0	69.5					48.5	48.5	48.5
Actuated g/C Ratio		0.37	0.37	0.12	0.53					0.37	0.37	0.37
v/c Ratio		0.36	0.35	0.56	0.28					0.80	0.81	0.15
Control Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
LOS		C	A	D	B					D	D	A
Approach Delay		22.8			24.0						42.3	
Approach LOS		C			C						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: SB I-35 & CSAH 50





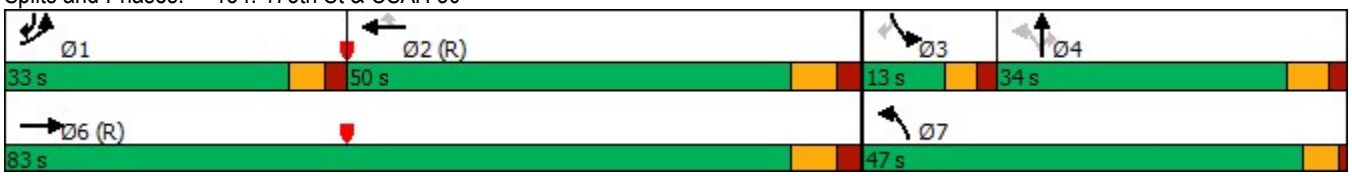
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Future Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Satd. Flow (prot)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Peak Hour Factor	1.00	0.95	0.82	1.00	0.94	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)						50%						
Lane Group Flow (vph)	0	1404	68	0	1078	361	0	0	0	0	0	0
Sign Control		Free			Free			Yield			Yield	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Future Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Satd. Flow (prot)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Flt Permitted	0.950						0.950	0.954		0.950		
Satd. Flow (perm)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Satd. Flow (RTOR)						113			137			225
Peak Hour Factor	0.91	0.96	1.00	1.00	0.89	0.65	0.75	0.25	0.96	0.93	1.00	0.82
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	348	1059	0	0	1064	88	88	88	199	40	0	328
Turn Type	Prot	NA			NA	Perm	pm+pt	NA	Perm	Prot		pm+ov
Protected Phases	1	6			2		7	4		3		1
Permitted Phases						2	4		4	3		3
Total Split (s)	33.0	83.0			50.0	50.0	47.0	34.0	34.0	13.0		33.0
Total Lost Time (s)	5.5	7.0			7.0	7.0	4.5	6.0	6.0	5.0		5.5
Act Effct Green (s)	19.0	94.1			69.6	69.6	24.4	22.9	12.7	7.3		24.8
Actuated g/C Ratio	0.15	0.72			0.54	0.54	0.19	0.18	0.10	0.06		0.19
v/c Ratio	0.71	0.42			0.40	0.10	0.28	0.30	0.72	0.41		0.69
Control Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
LOS	D	A			A	A	D	D	C	E		B
Approach Delay		17.3			7.3			39.3			24.0	
Approach LOS		B			A			D			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 9 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

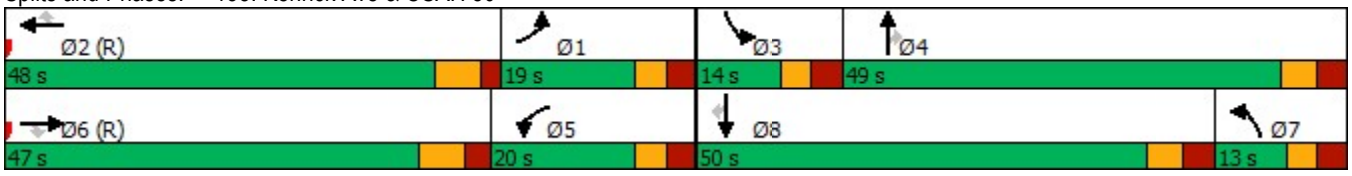
Splits and Phases: 134: 175th St & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Future Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			185			134			180
Peak Hour Factor	0.87	0.94	0.88	0.88	0.91	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	903	165	148	789	120	152	145	107	164	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	47.0	47.0	20.0	48.0	48.0	13.0	49.0	49.0	14.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	64.5	64.5	14.0	66.0	66.0	11.8	18.0	18.0	8.0	14.1	14.1
Actuated g/C Ratio	0.10	0.50	0.50	0.11	0.51	0.51	0.09	0.14	0.14	0.06	0.11	0.11
v/c Ratio	0.86	0.52	0.19	0.80	0.45	0.14	0.50	0.58	0.32	0.79	0.61	0.55
Control Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
Queue Delay	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 Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
LOS	E	B	A	F	C	A	E	E	A	F	E	B
Approach Delay		24.5			28.7			46.5			53.1	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

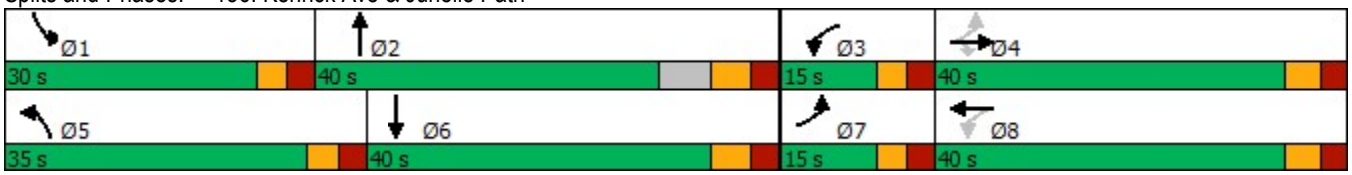
Splits and Phases: 135: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 136: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	180	126	167	174	201
Future Volume (vph)	250	180	126	167	174	201
Satd. Flow (prot)	1726	0	0	1792	1736	1553
Flt Permitted				0.981	0.950	
Satd. Flow (perm)	1726	0	0	1792	1736	1553
Peak Hour Factor	0.80	0.85	0.81	0.67	0.89	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	525	0	0	405	196	239
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	524	405	435
Demand Flow Rate, veh/h	544	421	453
Vehicles Circulating, veh/h	162	204	324
Vehicles Exiting, veh/h	463	324	382
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.3	7.2	6.1
Approach LOS	A	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	TR	LT	L	R
Assumed Moves	TR	LT	L	R
RT Channelized				Yield
Lane Util	1.000	1.000	1.000	
Follow-Up Headway, s	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	249
Entry Flow, veh/h	544	421	204	992
Cap Entry Lane, veh/h	1170	1121	992	0.962
Entry HV Adj Factor	0.962	0.962	0.961	239
Flow Entry, veh/h	524	405	196	953
Cap Entry, veh/h	1126	1078	953	0.251
V/C Ratio	0.465	0.376	0.206	6.3
Control Delay, s/veh	8.3	7.2	5.8	A
LOS	A	A	A	1
95th %tile Queue, veh	3	2	1	

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 50	**District**	Metro	**County**	Dakota
Begin RP	n/a	**End RP**	n/a	**Miles**	0.600
Location	CSAH 50 (Kenwood Trail) from 175th St W/175th Ct to Klamath Trail/170th St W				

B. Project Description

Proposed Work	CSAH 50 Widening, signalize/reconfigure Kenyon Trl int., reconfigure NB/SB I-35 RTIs		
Project Cost*	$32,670,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	0.4%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

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

D. Crash Modification Factor (optional second CMF)

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

E. Crash Data

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

Data Source Minnesota Crash Mapping Analysis Tool (MnCMAT2)

Crash Severity	All	< optional 2nd CMF >
K crashes	0	
A crashes	0	
B crashes	4	
C crashes	13	
PDO crashes	32	

F. Benefit-Cost Calculation

$569,949	**Benefit (present value)**	**B/C Ratio = 0.02**
$32,670,000	**Cost**	

Proposed project expected to reduce 1 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

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

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

Real Discount Rate:	0.8%	Default
Traffic Growth Rate:	0.4%	**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	0.11	0.04	$9,333
C crashes	0.36	0.12	$15,773
PDO crashes	0.90	0.30	$4,480
			$29,587

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$29,587	$29,587
2027	$29,705	$29,469
2028	$29,824	$29,352
2029	$29,943	$29,236
2030	$30,063	$29,120
2031	$30,183	$29,004
2032	$30,304	$28,889
2033	$30,425	$28,775
2034	$30,547	$28,660
2035	$30,669	$28,547
2036	$30,792	$28,433
2037	$30,915	$28,321
2038	$31,038	$28,208
2039	$31,163	$28,096
2040	$31,287	$27,985
2041	$31,412	$27,874
2042	$31,538	$27,763
2043	$31,664	$27,653
2044	$31,791	$27,543
2045	$31,918	$27,434
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 = $569,949

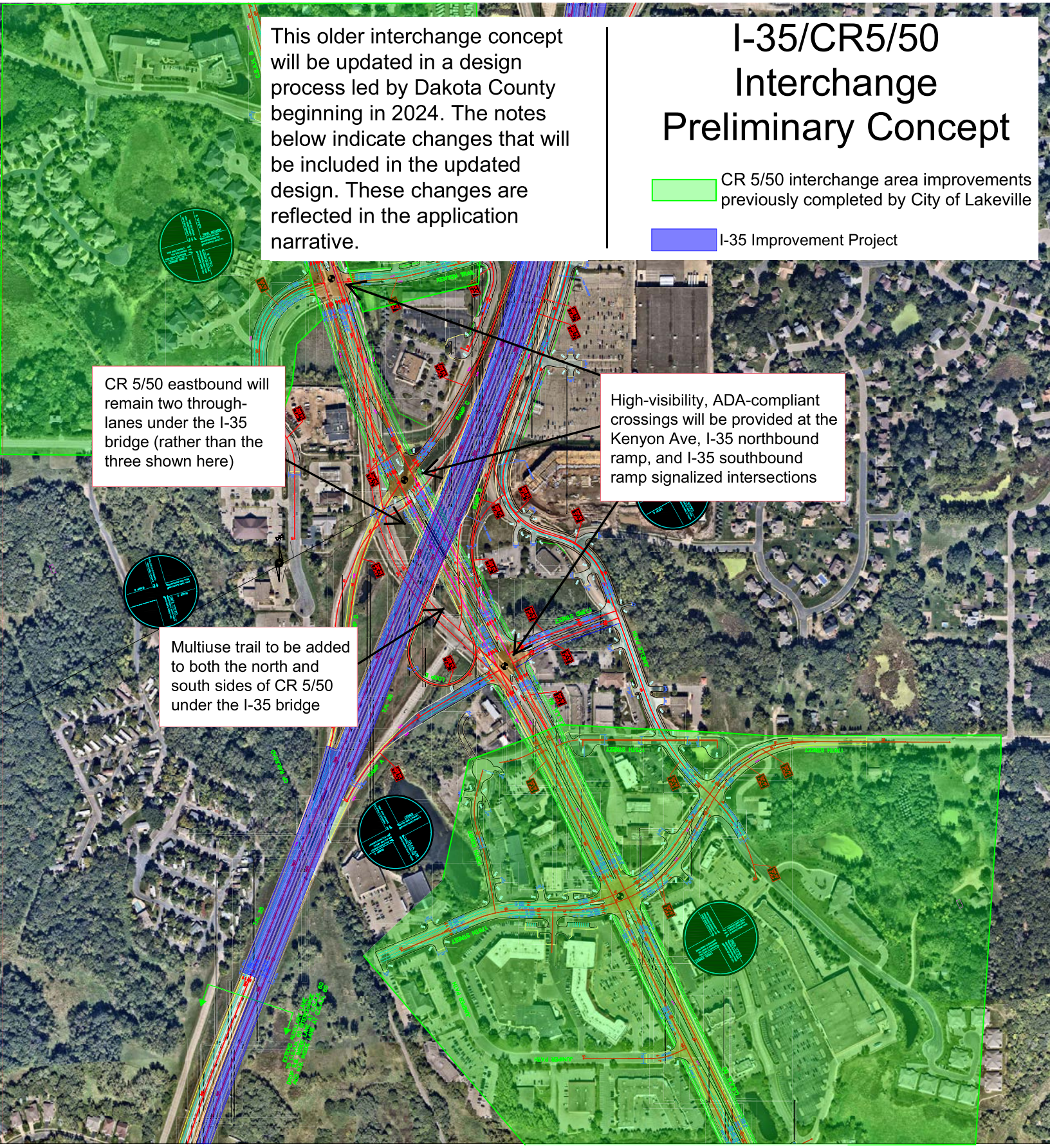
NOTE:
This calculation relies on the real discount rate, which accounts for inflation. No further discounting is necessary.

I-35/CR5/50 Interchange Preliminary Concept

This older interchange concept will be updated in a design process led by Dakota County beginning in 2024. The notes below indicate changes that will be included in the updated design. These changes are reflected in the application narrative.

CR 5/50 interchange area improvements previously completed by City of Lakeville

I-35 Improvement Project



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

11/29/2023

Erin Laberee
Transportation Director
14955 Galaxie Ave.
Apple Valley, MN 55124-8579

Re: MnDOT Letter for Dakota County
Metropolitan Council/Transportation Advisory Board 2024 Regional Solicitation Funding Request for CSAH 50/CSAH 5 from 172nd St to 175th St in Lakeville.

Dear Erin Laberee,

This letter documents MnDOT Metro District's recognition for Dakota County to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2024 Regional Solicitation for the CSAH 50/CSAH 5 from 172nd St to 175th St in Lakeville.

The proposed project includes reconstruction of CSAH 50 on a new alignment to add a second westbound travel lane on CSAH 50 where only one exists and providing shared use paths on both sides of the county highway. This project could be predicated on a proposed reconstruction of the I-35/CSAH 50 interchange entrance and exit ramps. There are currently no planned or programmed improvements for reconstruction of this interchange. The only programmed project is a bridge replacement programmed in FY 2029.

As the agency with jurisdiction over I-35, MnDOT acknowledges that Dakota County will seek the local system improvements proposed in the application. If funded, details of how the project is delivered and any future maintenance agreement with the County will need to be determined during the project's development to define how the improvements will be maintained for the project's useful life.

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

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

If you have questions or require additional information at this time, please reach out to your Area Manager Bryant Ficek at Bryant.Ficek@state.mn.us or 651-443-2564.

Sincerely,

Sheila Kauppi

Digitally signed by Sheila Kauppi
Date: 2023.11.29 13:50:11 -06'00'

Sheila Kauppi, PE
Metro District Engineer

CC:
Bryant Ficek, Metro South Area Manager
Aaron Tag, Metro Program Director
Dan Erickson, Metro State Aid Engineer

I-35/CR5/50 Interchange Preliminary Concept

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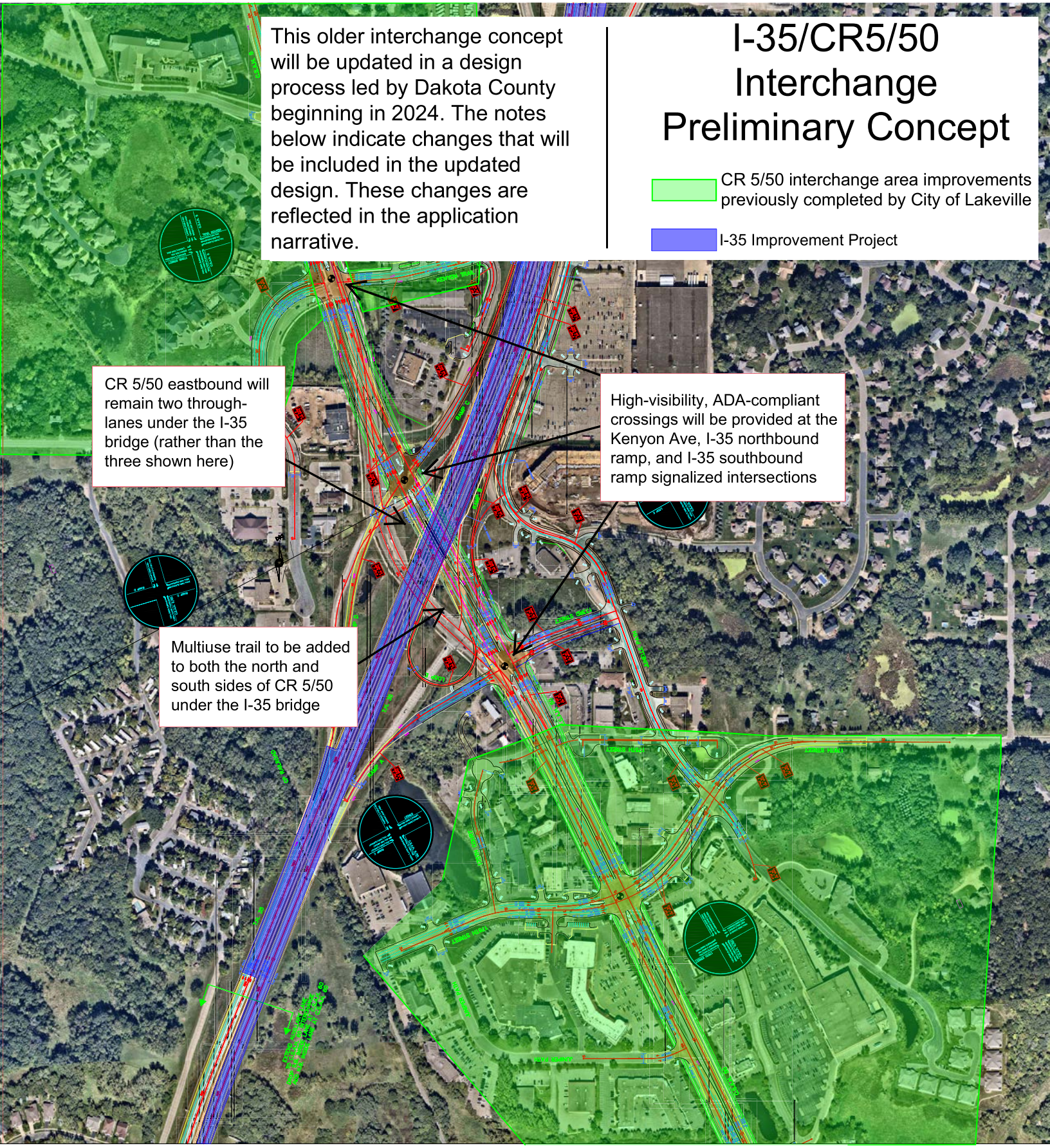
I-35 Improvement Project



BOARD OF COUNTY COMMISSIONERS
DAKOTA COUNTY, MINNESOTA

September 26, 2023 — Resolution No. 23-424

Motion by Commissioner Hamann-Roland — Second by Commissioner Atkins

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Authorization To Submit And Accept Grant Funds For 2023-2024 Regional Federal Funding Solicitation Grant Opportunity

WHEREAS, the Transportation Advisory Board (TAB) is requesting project submittals for federal funding under the Infrastructure Investment and Jobs Act (IIJA) through the Regional Solicitation process; and

WHEREAS, the Solicitation programs fund up to 80 percent of project construction costs; and

WHEREAS, federal funding of projects reduces the burden on local taxpayers for regional improvements; and

WHEREAS, project submittals are due on December 15, 2023; and

WHEREAS, all projects proposed are consistent with the adopted Dakota County 2040 Comprehensive Plan; and

WHEREAS, subject to federal funding award for the projects identified hereto, the Dakota County Board of Commissioners would be asked to consider authorization to execute a grant agreement at a future meeting.

NOW, THEREFORE, BE IT RESOLVED, That the Dakota County Board of Commissioners hereby authorizes the submittal of the following County-led projects to the Regional Solicitation application process for federal funding:

Highway Projects

1.1 County State Aid Highway (CSAH) 50 (Kenwood Trail) from 172nd to 175th and Interstate-35 interchange in Lakeville (Strategic Capacity Category)
1.2 CSAH 46 (160th Street/Brandel Drive) from Trunk Highway (TH) 3 to TH 52 in Coates, Empire Township and Rosemount (Strategic Capacity Category)
1.3 CSAH 32 (117th Street) from US 52 to CSAH 71 in Inver Grove Heights (Reconstruction Category)
1.4 CSAH 46 (160th Street) from 1,300 feet west of General Sieben Drive to Highway 61 in Hastings CSAH 32 (117th Street) from US 52 to CSAH 71 in Inver Grove Heights (Reconstruction Category)
1.5 CSAH 32 (122nd St) at frontage road on east side of interstate 35 in Burnsville (Spot Mobility Category)
1.6 CSAH 4 (Butler Ave) trail from Roberts Street to US Highway 52 in West St. Paul (Multi-Use Trails Category)
1.7 CSAH 42 (Egan Drive) trail from CSAH 5 to CSAH 11 in Burnsville (Multi-Use Trails Category)

Safe Routes to School Projects

2.1 CSAH 4 (Butler Ave) from CSAH 63 to Smith Ave. in West St. Paul
2.2 CSAH 60 (185th St) from CSAH 50 to CSAH 9 in Lakeville

STATE OF MINNESOTA
County of Dakota

	YES		NO
Slavik	X	**Slavik**	
Atkins	X	**Atkins**	
Halverson	X	**Halverson**	
Droste	X	**Droste**	
Workman	X	**Workman**	
Holberg	X	**Holberg**	
Hamann-Roland	X	**Hamann-Roland**	

I, Jeni Reynolds, Clerk to the Board of the County of Dakota, State of Minnesota, do hereby certify that I have compared the foregoing copy of a resolution with the original minutes of the proceedings of the Board of County Commissioners, Dakota County, Minnesota, at their session held on the 26th day of September 2023, now on file in the Office of the County Manager Department, and have found the same to be a true and correct copy thereof.

Witness my hand and official seal of Dakota County this 26th day of September 2023.

Jeni Reynolds

Clerk to the Board

Greenway Multiuse Trails and Bicycle Facilities Projects

3.1 North Creek Greenway – CSAH 42 Grade Separation and Trail to Flagstaff Road in Apple Valley
3.2 Lake Marion Greenway through the Industrial Park in Lakeville
3.3 North Creek Greenway from 199th Street to downtown Farmington
3.4 River to River Greenway from TH 149 trail and TH 149 underpass in Mendota Heights

; and

BE IT FURTHER RESOLVED, That the Dakota County Board of Commissioners hereby authorizes the Physical Development Director to accept grant funds, if awarded, and execute grant agreements subject to approval as to form by the Dakota County Attorney's Office.

STATE OF MINNESOTA
County of Dakota

	YES		NO
Slavik	X	**Slavik**	
Atkins	X	**Atkins**	
Halverson	X	**Halverson**	
Droste	X	**Droste**	
Workman	X	**Workman**	
Holberg	X	**Holberg**	
Hamann-Roland	X	**Hamann-Roland**	

I, Jeni Reynolds, Clerk to the Board of the County of Dakota, State of Minnesota, do hereby certify that I have compared the foregoing copy of a resolution with the original minutes of the proceedings of the Board of County Commissioners, Dakota County, Minnesota, at their session held on the 26th day of September 2023, now on file in the Office of the County Manager Department, and have found the same to be a true and correct copy thereof.

Witness my hand and official seal of Dakota County this 26th day of September 2023.

Jeni Reynolds

Clerk to the Board

I-35/CR5/50 Interchange Preliminary Concept

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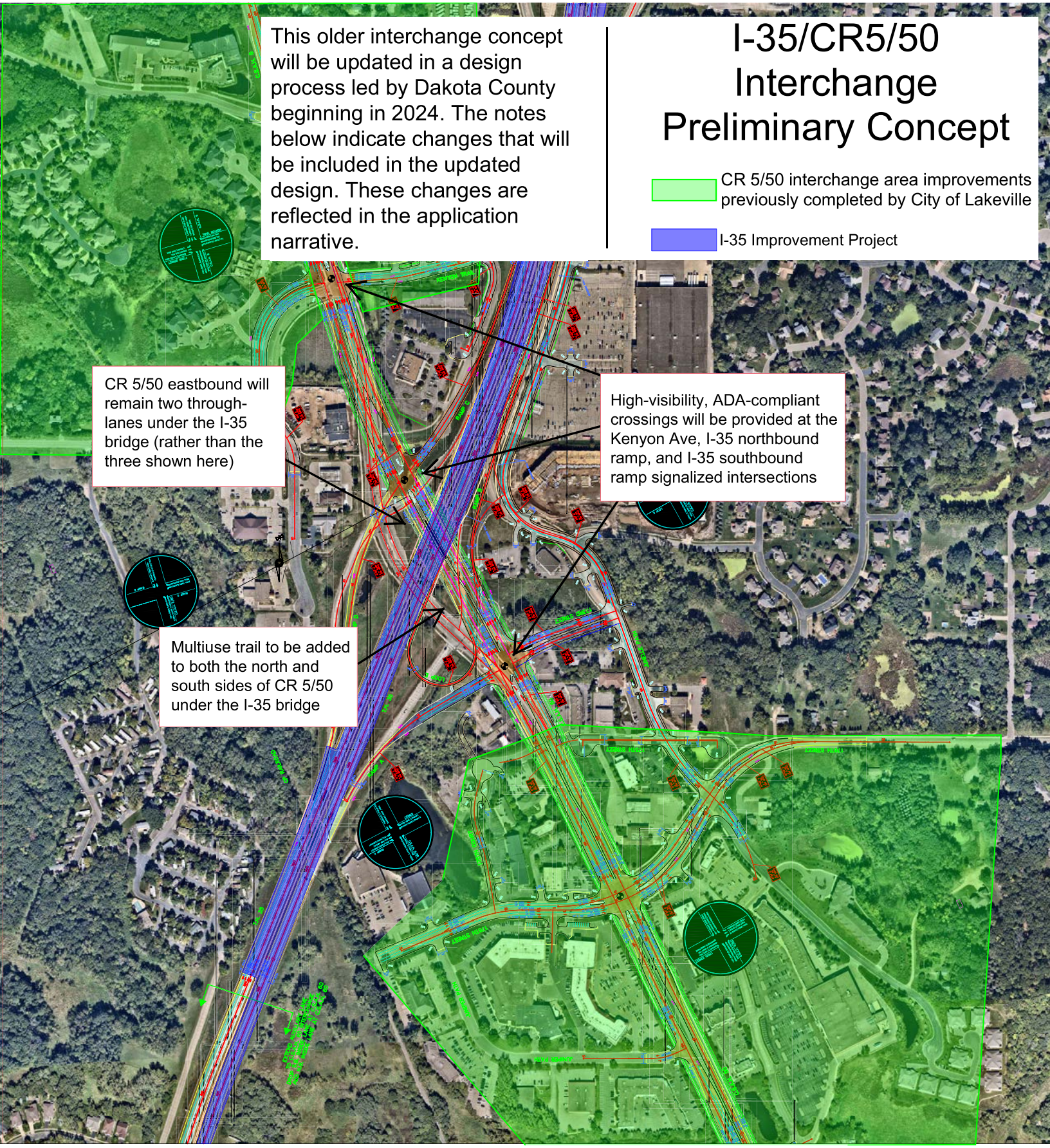
CR 5/50 interchange area improvements previously completed by City of Lakeville

I-35 Improvement Project



City of Lakeville
Positioned to Thrive

December 11, 2023

Elaine Koutsoukos, Transportation Coordinator
Transportation Advisory Board
Metropolitan Council
390 Robert Street North
St. Paul, MN 55101

RE: 2023 Regional Solicitation Application: Interstate 35 and CSAH 5/50 Interchange Project

Dear Ms. Koutsoukos:

The City of Lakeville and Dakota County are working in partnership to construct a new interchange at Interstate 35 (I-35) and County State Aid Highway (CSAH) 5/50 (Kenwood Trail). The existing I-35/CSAH 5/50 interchange is an interim configuration that is largely deficient, lacking adequate capacity, sight distances, and turn lanes, resulting in delays and safety issues. Resulting crashes and congestion in the interchange area present mobility and safety concerns and are a constraint to growth; the lack of adequate multimodal facilities in both directions is a barrier for people with limited or no access to vehicles living in the area.

The I-35 and CSAH 50 interchange serves as a critical community access for the safety and mobility of residents and businesses, and reconstruction of this deficient interchange has been a long-standing transportation priority for the City of Lakeville. The City of Lakeville has invested more than $20 million along the CSAH 50 corridor in preparation for the future interchange reconstruction, including right-of-way acquisition as opportunities become available. In addition to improving operations and safety on I-35, the new interchange will improve geometrics, sightlines, and vertical clearance, add a second westbound travel lane on CSAH 5/50 where only one exists today, and provide shared use paths on both sides of the roadway. The project's multimodal improvements will reduce the freeway crossing barrier and provide more convenient, comfortable, and safe transportation for residents who rely on this crossing for their essential travel.

The purpose of this letter is to indicate the City of Lakeville's approval of the project layout being submitted with this application. The project layout is attached to this letter. The City of Lakeville is aware of and understands the project being submitted and commits to operate and maintain the public facilities for the duration of their design life.

Respectfully,

Zach Johnson
City Engineer

20195 Holyoke Avenue, Lakeville, MN 55044
952-985-4400 • 952-985-4499 fax
www.lakevillemn.gov

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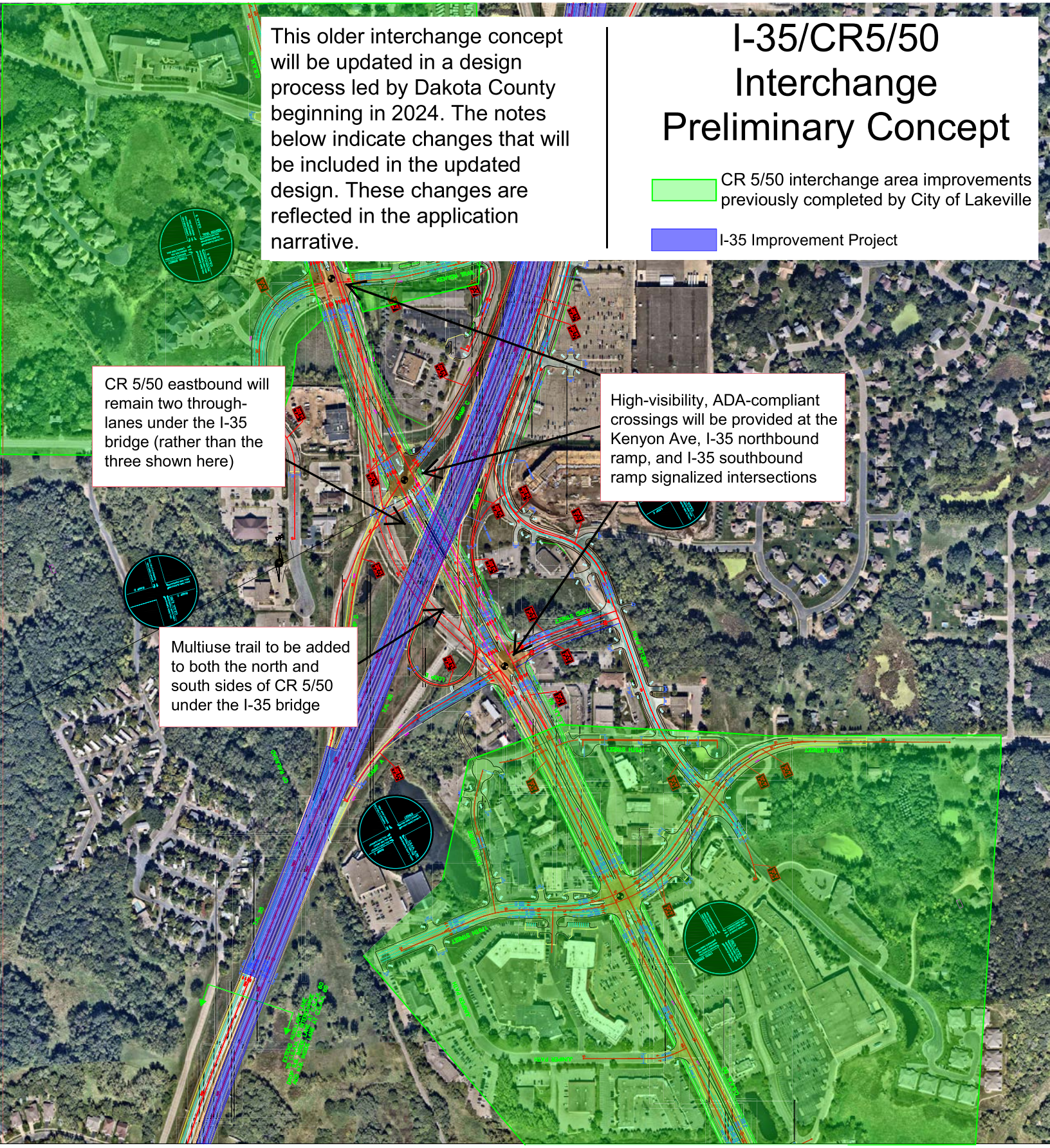
CR 5/50 interchange area improvements previously completed by City of Lakeville

I-35 Improvement Project



Transportation Department
14955 Galaxie Ave.
Apple Valley, MN 55124-8579

December 14, 2023

Elaine Koutsoukos, Transportation Coordinator
Transportation Advisory Board
Metropolitan Council
390 Robert Street North
St. Paul, MN 55101

RE: 2023 Regional Solicitation Application for County State Aid Highway (CSAH) 50 project from 170th St. to 175th St. in Lakeville

Dear Ms. Koutsoukos:

Dakota County has reviewed and approved the general layout of the CSAH 50 project from 170th St to 175th St. in Lakeville. The project layout has been attached to this letter.

We will be happy to answer any questions you may have regarding this project.

Sincerely,

Erin Laberee
Dakota County Transportation Director/County Engineer

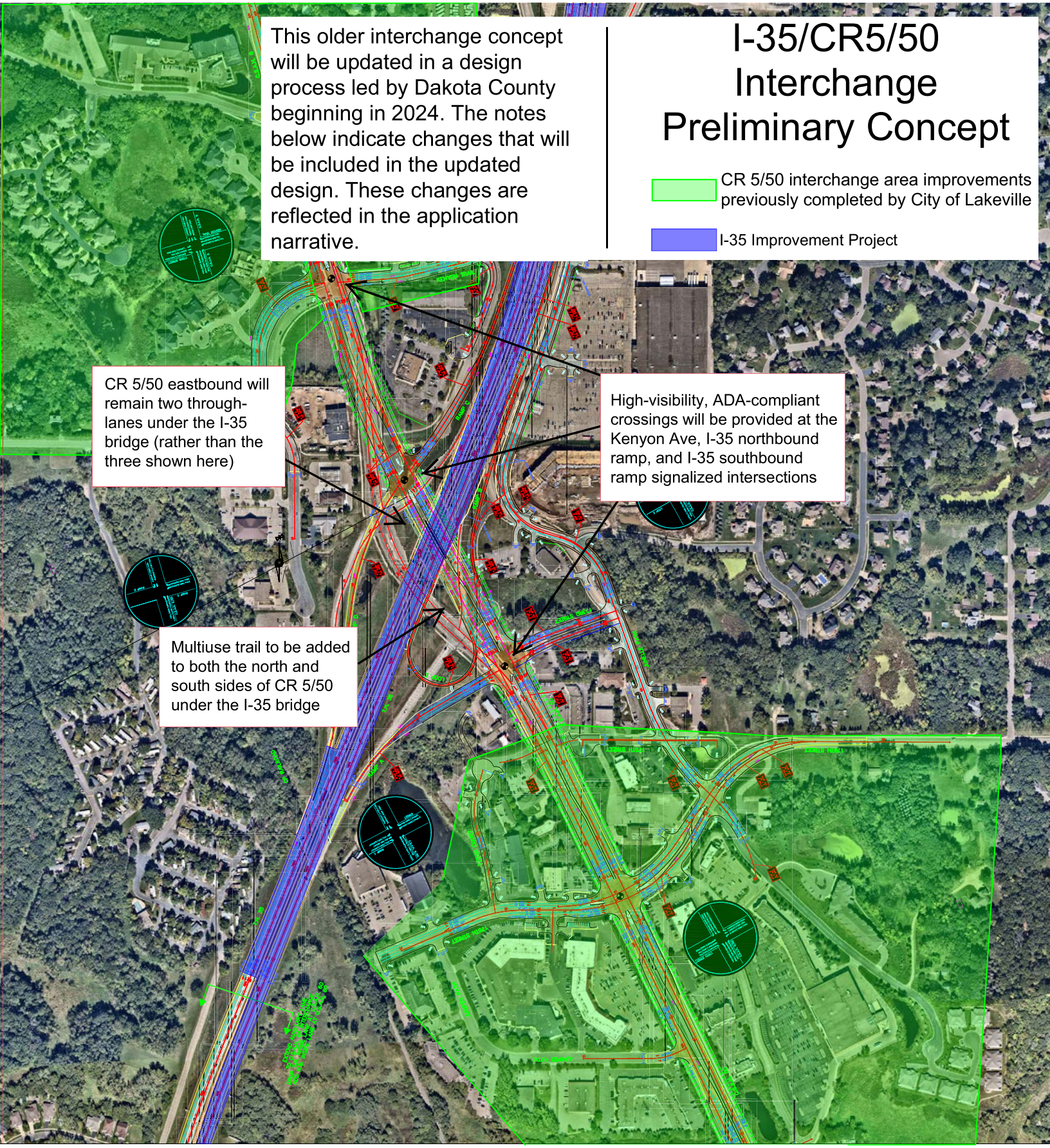
CC:

I-35/CR5/50 Interchange Preliminary Concept

This older interchange concept will be updated in a design process led by Dakota County beginning in 2024. The notes below indicate changes that will be included in the updated design. These changes are reflected in the application narrative.

CR 5/50 interchange area improvements previously completed by City of Lakeville

I-35 Improvement Project



I-35/CR 5/50 Interchange Reconstruction

Strategic Capacity

Project Location

The interchange at I-35 and CR 5/50 in the City of Lakeville

Funding Request

Federal: $10,000,000

Local Match: $22,670,000 (69.4%)

Project Total: $32,670,000

Summary of Project Benefits

⇒ Corrects a range of existing interchange deficiencies through improved geometrics, sightlines, turn lanes, and vertical clearances

⇒ Provides needed capacity on CR 5/50 at a congested section of the I-35 mainline by constructing an additional westbound through lane

⇒ Adds quality, ADA-compliant multiuse paths on both sides of CR 5/50 under I-35

⇒ Provides three ADA-compliant signalized crossings with updated safety and accessibility features

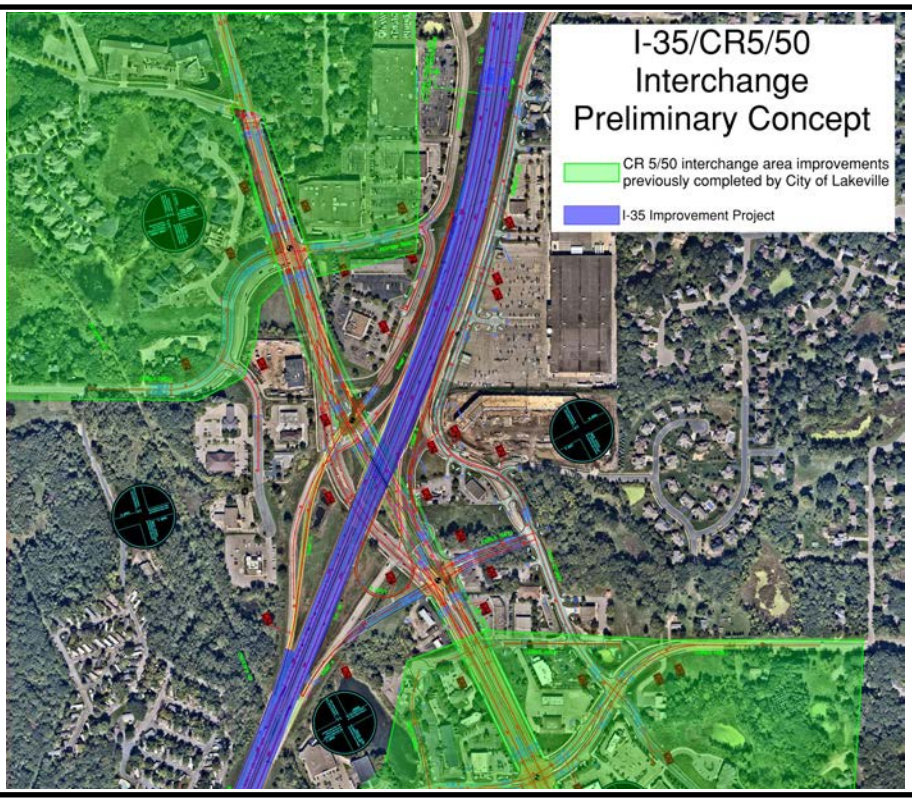
⇒ Includes improvements to the adjacent local roadway system and multimodal facilities

⇒ Supports safe, efficient, and accessible travel for all users within a growing area of Lakeville and Dakota County

Project Summary

The interchange at I-35 and CR 5/50 connects the growing area of Lakeville and Dakota County to the Twin Cities region and beyond. However, the interchange is lacking sufficient capacity, sight distance and turn lanes, resulting in delays and safety issues on CR 5/50 in Lakeville at an area of congestion on the I-35 mainline. The interchange was built as an interim configuration with only one westbound lane and no trail or sidewalk on the north side of CR 5/50 due to constraints of the existing I-35 bridge. CR 5/50 carries 25,500 vehicles per day and is projected to grow to 34,000 vehicles by 2040.

The proposed project is a full interchange reconstruction including CR 5/50 from 175th St to 170th St and the I-35 bridge. The project includes adding a westbound through lane on CR 5/50 and correcting a range of interchange deficiencies through improved geometrics, sightlines, turn lanes, and vertical clearances. Multiuse paths will be added on both sides of CR 5/50 and high-visibility, ADA-compliant pedestrian crossings will be provided at the project's three signalized intersections.



Dakota COUNTY

CSAH 5/50 Interchange Project
Existing vs. Build Analysis - Kenyon Ave to Kenrick Ave

Existing Conditions (CSAH 50 set to EB/WB direction)

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	22	296	30	
Total Delay (seconds)	0	1,098	3,564	34,928	39,590	
Emissions						Total
CO (kg)	0.19	0.46	0.22	0.59	1.46	
NOx (kg)	0.04	0.09	0.04	0.12	0.29	2.09
VOC (kg)	0.04	0.11	0.05	0.14	0.34	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	16		44	30	
Total Delay (seconds)	15,019	10,784		45,584	71,387	
Emissions						Total
CO (kg)	0.83	0.57		1.60	3.00	
NOx (kg)	0.16	0.11		0.31	0.58	4.27
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #33	CSAH 50 at NB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,216	321		2,927	
Delay (sec/veh)	7	4	52		11	
Total Delay (seconds)	9,730	4,864	16,692		31,286	
Emissions						Total
CO (kg)	0.77	0.57	0.50		1.84	
NOx (kg)	0.15	0.11	0.10		0.36	2.63
VOC (kg)	0.18	0.13	0.12		0.43	

Intersection #34	CSAH 50 at 175th St				3/4 Access	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,525	1,018	44	269	2,856	
Delay (sec/veh)	3	0	11	14	3	
Total Delay (seconds)	4,575	0	484	3,766	8,825	
Emissions						Total
CO (kg)	1.42	0.42	0.03	0.23	2.10	
NOx (kg)	0.28	0.08	0.01	0.05	0.42	3.01
VOC (kg)	0.33	0.10	0.01	0.05	0.49	

Intersection #35	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,229	949	298	443	2,919	
Delay (sec/veh)	23	26	48	58	32	
Total Delay (seconds)	28,267	24,674	14,304	25,694	92,939	
Emissions						Total
CO (kg)	1.43	1.42	0.51	0.76	4.12	
NOx (kg)	0.20	0.28	0.10	0.15	0.73	5.81
VOC (kg)	0.33	0.33	0.12	0.18	0.96	

Intersection #36	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.37	0.26	0.27	0.30	1.20	
NOx (kg)	0.07	0.05	0.05	0.06	0.23	1.71
VOC (kg)	0.09	0.06	0.06	0.07	0.28	

Intersection #37	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	374	293	359		1,026	
Delay (sec/veh)	8	8	10		9	
Total Delay (seconds)	2,992	2,344	3,590		8,926	
Emissions						Total
CO (kg)	0.25	0.17	0.24		0.66	
NOx (kg)	0.05	0.03	0.05		0.13	0.95
VOC (kg)	0.06	0.04	0.06		0.16	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	74,113	52,224	46,319	117,135	289,791	
Emissions						Total
CO (kg)	5.26	3.87	1.77	3.48	14.38	
NOx (kg)	0.95	0.75	0.35	0.69	2.74	20.47
VOC (kg)	1.22	0.90	0.42	0.81	3.35	

Total Volume (All Intersections) 14,735
Total Delay (All Intersections, seconds) 289,791
Total Emissions (CO, NOX, VOC) 20.47

Proposed Build Conditions

Intersection #31	CSAH 50 at Kenyon Avenue				Minor Stop	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	487	549	162	118	1,316	
Delay (sec/veh)	0	2	19	96	12	
Total Delay (seconds)	0	1,098	3,078	11,328	15,504	
Emissions						Total
CO (kg)	0.19	0.46	0.21	0.25	1.11	
NOx (kg)	0.04	0.09	0.04	0.05	0.22	1.59
VOC (kg)	0.04	0.11	0.05	0.06	0.26	

Intersection #32	CSAH 50 at SB I-35 Ramp				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	653	674		1,036	2,363	
Delay (sec/veh)	23	23		43	32	
Total Delay (seconds)	15,019	15,502		44,548	75,069	
Emissions						Total
CO (kg)	0.83	0.55		1.58	2.96	
NOx (kg)	0.16	0.11		0.31	0.58	4.23
VOC (kg)	0.19	0.13		0.37	0.69	

Intersection #133	CSAH 50 at NB I-35 Entrances				Rights Only	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,390	1,346			2,736	
Delay (sec/veh)	0	0			0	
Total Delay (seconds)	0	0			0	
Emissions						Total
CO (kg)	0.33	0.24			0.57	
NOx (kg)	0.06	0.05			0.11	0.82
VOC (kg)	0.08	0.06			0.14	

Intersection #134	CSAH 50 at NB I-35 Exit/175th St				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,334	1,004	321	306	2,965	
Delay (sec/veh)	17	7	39	25	17	
Total Delay (seconds)	22,678	7,028	12,519	7,650	49,875	
Emissions						Total
CO (kg)	1.17	0.88	0.40	0.25	2.70	
NOx (kg)	0.23	0.17	0.08	0.05	0.53	3.85
VOC (kg)	0.27	0.20	0.09	0.06	0.62	

Intersection #135	CSAH 50 at Kenrick Avenue				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	1,245	949	298	406	2,898	
Delay (sec/veh)	24	29	48	53	32	
Total Delay (seconds)	29,880	27,521	14,304	21,518	93,223	
Emissions						Total
CO (kg)	1.55	1.46	0.51	0.66	4.18	
NOx (kg)	0.30	0.28	0.10	0.13	0.81	5.96
VOC (kg)	0.36	0.34	0.12	0.15	0.97	

Intersection #136	Kenrick Ave at Junell Path				Signal	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	451	235	265	377	1,328	
Delay (sec/veh)	30	36	29	19	28	
Total Delay (seconds)	13,530	8,460	7,685	7,163	36,838	
Emissions						Total
CO (kg)	0.54	0.26	0.28	0.30	1.38	
NOx (kg)	0.10	0.05	0.05	0.06	0.26	1.95
VOC (kg)	0.12	0.06	0.06	0.07	0.31	

Intersection #137	Junelle Path at 175th St				Roundabout	
Operations	EB	WB	NB	SB	Total	
Volumes (vph)	431	293	375		1,099	
Delay (sec/veh)	9	8	7		8	
Total Delay (seconds)	3,879	2,344	2,625		8,848	
Emissions						Total
CO (kg)	0.26	0.28	0.26		0.80	
NOx (kg)	0.05	0.05	0.05		0.15	1.13
VOC (kg)	0.06	0.06	0.06		0.18	

All Intersections	TOTAL SUMMARY					
Operations	EB	WB	NB	SB	Total	
Total Delay (seconds)	84,986	61,953	40,211	92,207	279,357	
Emissions						Total
CO (kg)	4.87	4.13	1.66	3.04	13.70	
NOx (kg)	0.94	0.80	0.32	0.60	2.66	19.53
VOC (kg)	1.12	0.96	0.38	0.71	3.17	

Total Volume (All Intersections) 14,705
Total Delay (All Intersections, seconds) 279,357
Total Emissions (CO, NOX, VOC) 19.53

Total Delay CHANGE (All Intersections, seconds) 10,434
Total Emissions CHANGE (CO, NOX, VOC) 0.94

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	22	296	30
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	22	296	30
Total Delay (hr)	0	0	1	10	11
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	41	17	2	14
Total Travel Time (hr)	2	3	2	10	17
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	8	21
Fuel Economy (mpg)	26.3	17.1	11.8	2.0	11.4
CO Emissions (kg)	0.19	0.46	0.22	0.59	1.47
NOx Emissions (kg)	0.04	0.09	0.04	0.12	0.29
VOC Emissions (kg)	0.04	0.11	0.05	0.14	0.34
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	16	44	30
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	16	44	30
Total Delay (hr)	4	3	13	20
Stops / Veh	0.51	0.60	0.81	0.67
Stops (#)	333	406	841	1580
Average Speed (mph)	19	15	11	13
Total Travel Time (hr)	7	5	18	31
Distance Traveled (mi)	135	77	191	403
Fuel Consumed (gal)	12	8	23	43
Fuel Economy (mpg)	11.4	9.4	8.4	9.4
CO Emissions (kg)	0.83	0.57	1.60	3.00
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.70
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	11	17	45

33: NB I-35 & CSAH 50

Direction	EB	WB	NB	All
Future Volume (vph)	1390	1216	321	2927
Control Delay / Veh (s/v)	6	4	52	10
Queue Delay / Veh (s/v)	1	0	0	0
Total Delay / Veh (s/v)	7	4	52	11
Total Delay (hr)	3	1	5	9
Stops / Veh	0.28	0.16	0.71	0.28
Stops (#)	396	200	229	825
Average Speed (mph)	22	26	9	19
Total Travel Time (hr)	7	6	6	19
Distance Traveled (mi)	159	147	52	358
Fuel Consumed (gal)	11	8	7	26
Fuel Economy (mpg)	14.4	18.1	7.4	13.7
CO Emissions (kg)	0.77	0.57	0.50	1.83
NOx Emissions (kg)	0.15	0.11	0.10	0.36
VOC Emissions (kg)	0.18	0.13	0.12	0.42
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	33	12	4	49

34: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1525	1018	44	269	2856
Control Delay / Veh (s/v)	3	0	11	14	3
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	3	0	11	14	3
Total Delay (hr)	1	0	0	1	3
Stops / Veh	0.68	0.03	1.00	1.00	0.49
Stops (#)	1042	32	44	269	1387
Average Speed (mph)	33	35	13	14	30
Total Travel Time (hr)	6	4	0	2	12
Distance Traveled (mi)	185	149	3	26	362
Fuel Consumed (gal)	20	6	0	3	30
Fuel Economy (mpg)	9.1	25.0	NA	7.9	12.1
CO Emissions (kg)	1.42	0.42	0.03	0.23	2.10
NOx Emissions (kg)	0.28	0.08	0.01	0.04	0.41
VOC Emissions (kg)	0.33	0.10	0.01	0.05	0.49
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

35: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1229	949	298	443	2919
Control Delay / Veh (s/v)	23	26	48	58	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	23	26	48	58	32
Total Delay (hr)	8	7	4	7	26
Stops / Veh	0.56	0.60	0.70	0.62	0.60
Stops (#)	691	568	210	276	1745
Average Speed (mph)	15	20	12	6	14
Total Travel Time (hr)	12	12	7	9	39
Distance Traveled (mi)	179	243	79	52	554
Fuel Consumed (gal)	20	20	7	9	57
Fuel Economy (mpg)	8.8	11.9	10.8	5.9	9.7
CO Emissions (kg)	1.43	1.42	0.51	0.62	3.99
NOx Emissions (kg)	0.28	0.28	0.10	0.12	0.78
VOC Emissions (kg)	0.33	0.33	0.12	0.14	0.92
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	16	28	0	0	44

36: Kenrick Ave & Junelle Path

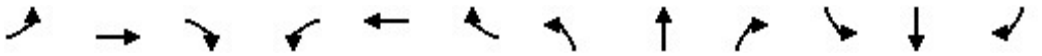
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	6	8	10	13	9
Total Travel Time (hr)	5	3	3	4	15
Distance Traveled (mi)	30	26	31	47	135
Fuel Consumed (gal)	5	4	4	4	17
Fuel Economy (mpg)	5.7	7.1	8.1	10.8	7.8
CO Emissions (kg)	0.37	0.26	0.27	0.30	1.21
NOx Emissions (kg)	0.07	0.05	0.05	0.06	0.24
VOC Emissions (kg)	0.09	0.06	0.06	0.07	0.28
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

37: 175th St & Junelle Path

Direction	EB	WB	NB	All
Future Volume (vph)	374	293	359	1026
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	374	293	359	1026
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	1	1	3
Distance Traveled (mi)	36	20	35	90
Fuel Consumed (gal)	4	2	3	9
Fuel Economy (mpg)	10.1	8.1	10.2	9.6
CO Emissions (kg)	0.25	0.17	0.24	0.66
NOx Emissions (kg)	0.05	0.03	0.05	0.13
VOC Emissions (kg)	0.06	0.04	0.06	0.15
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	19
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	19
Total Delay (hr)	78
Stops / Veh	0.53
Stops (#)	7838
Average Speed (mph)	16
Total Travel Time (hr)	136
Distance Traveled (mi)	2144
Fuel Consumed (gal)	204
Fuel Economy (mpg)	10.5
CO Emissions (kg)	14.26
NOx Emissions (kg)	2.77
VOC Emissions (kg)	3.31
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	138
Performance Index	99.9



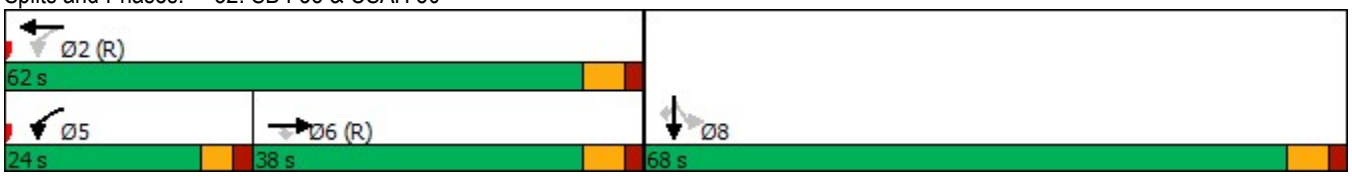
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1827	1553	1736	1827	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	1736	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.379						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	692	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	pm+pt	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6	2						8		8
Total Split (s)		38.0	38.0	24.0	62.0					68.0	68.0	68.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		50.0	50.0	70.9	69.9					48.1	48.1	48.1
Actuated g/C Ratio		0.38	0.38	0.55	0.54					0.37	0.37	0.37
v/c Ratio		0.35	0.35	0.46	0.27					0.80	0.81	0.15
Control Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.4	5.7	17.8	15.6					46.5	47.3	4.5
LOS		C	A	B	B					D	D	A
Approach Delay		22.8			16.3						43.1	
Approach LOS		C			B						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 33 (25%), Referenced to phase 2:WBTL and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

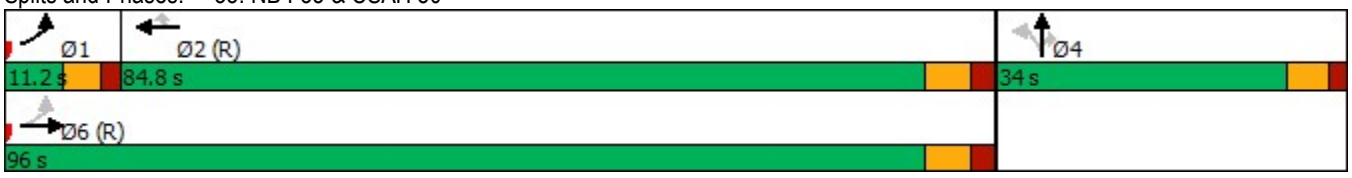
Splits and Phases: 32: SB I-35 & CSAH 50

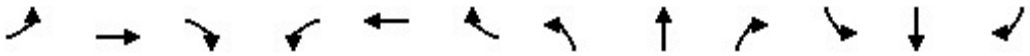


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Future Volume (vph)	56	1334	0	0	545	671	129	1	191	0	0	0
Satd. Flow (prot)	1736	3471	0	0	1827	1553	0	1741	1553	0	0	0
Flt Permitted	0.348							0.953				
Satd. Flow (perm)	636	3471	0	0	1827	1553	0	1741	1553	0	0	0
Satd. Flow (RTOR)						722			80			
Peak Hour Factor	0.82	0.95	1.00	1.00	0.92	0.93	0.75	0.25	0.96	1.00	1.00	1.00
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1404	0	0	592	722	0	176	199	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Total Split (s)	11.2	96.0			84.8	84.8	34.0	34.0	34.0			
Total Lost Time (s)	5.5	7.0			7.0	7.0		6.0	6.0			
Act Effct Green (s)	99.5	98.0			88.1	88.1		19.0	19.0			
Actuated g/C Ratio	0.77	0.75			0.68	0.68		0.15	0.15			
v/c Ratio	0.13	0.54			0.48	0.56		0.69	0.67			
Control Delay	4.9	6.5			5.3	3.0		66.3	41.9			
Queue Delay	0.0	0.6			0.0	0.0		0.0	0.0			
Total Delay	4.9	7.0			5.3	3.0		66.3	41.9			
LOS	A	A			A	A		E	D			
Approach Delay		6.9			4.1			53.4				
Approach LOS		A			A			D				

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 95 (73%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 33: NB I-35 & CSAH 50





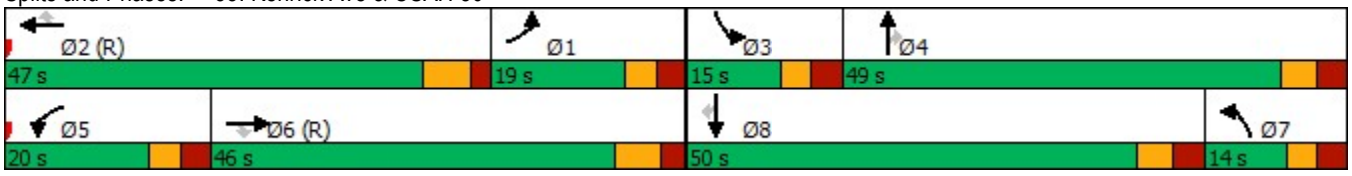
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Future Volume (vph)	317	1185	23	14	947	57	0	0	44	0	0	269
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1827	0	0	1827	0	0
Peak Hour Factor	0.91	0.95	0.64	0.70	0.89	0.65	1.00	1.00	0.92	1.00	1.00	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	348	1247	36	20	1064	88	0	48	0	0	328	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Future Volume (vph)	251	856	122	116	732	101	126	100	72	186	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			193			189			193
Peak Hour Factor	0.87	0.93	0.85	0.81	0.92	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	920	144	143	796	120	152	145	107	204	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	46.0	46.0	20.0	47.0	47.0	14.0	49.0	49.0	15.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	62.1	62.1	16.4	66.0	66.0	11.8	17.0	17.0	9.0	14.1	14.1
Actuated g/C Ratio	0.10	0.48	0.48	0.13	0.51	0.51	0.09	0.13	0.13	0.07	0.11	0.11
v/c Ratio	0.86	0.56	0.17	0.65	0.45	0.14	0.50	0.61	0.29	0.88	0.61	0.53
Control Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
Queue Delay	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 Delay	64.9	13.7	0.8	67.6	22.3	0.4	61.7	63.1	2.0	93.7	67.4	11.4
LOS	E	B	A	E	C	A	E	E	A	F	E	B
Approach Delay		23.3			26.0			46.4			58.0	
Approach LOS		C			C			D			E	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 116 (89%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 32.2	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

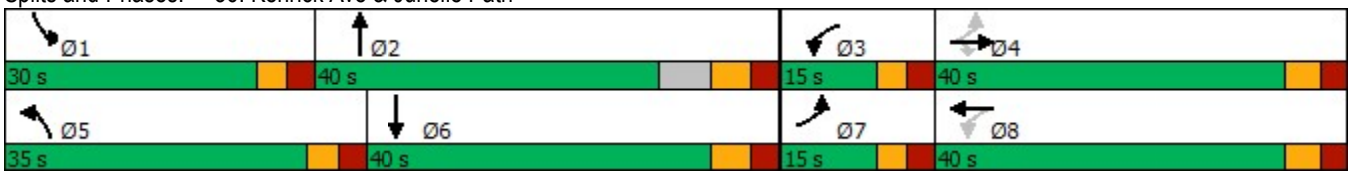
Splits and Phases: 35: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 36: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	123	126	167	158	201
Future Volume (vph)	250	123	126	167	158	201
Satd. Flow (prot)	1745	0	0	1792	1656	0
Flt Permitted				0.981	0.978	
Satd. Flow (perm)	1745	0	0	1792	1656	0
Peak Hour Factor	0.80	0.79	0.81	0.67	0.79	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	469	0	0	405	439	0
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.0
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	468	405	439
Demand Flow Rate, veh/h	486	421	457
Vehicles Circulating, veh/h	162	208	324
Vehicles Exiting, veh/h	467	573	324
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	7.3	9.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	486	421	457
Cap Entry Lane, veh/h	1170	1116	992
Entry HV Adj Factor	0.962	0.962	0.961
Flow Entry, veh/h	468	405	439
Cap Entry, veh/h	1125	1074	953
V/C Ratio	0.415	0.377	0.461
Control Delay, s/veh	7.5	7.3	9.3
LOS	A	A	A
95th %tile Queue, veh	2	2	2

31: Kenyon Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	487	549	162	118	1316
Control Delay / Veh (s/v)	0	2	19	96	12
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	0	2	19	96	12
Total Delay (hr)	0	0	1	3	4
Stops / Veh	0.04	0.37	1.00	1.00	0.38
Stops (#)	20	205	162	118	505
Average Speed (mph)	44	40	18	4	23
Total Travel Time (hr)	2	3	2	4	10
Distance Traveled (mi)	73	113	38	17	240
Fuel Consumed (gal)	3	7	3	4	16
Fuel Economy (mpg)	26.3	17.1	12.3	4.5	14.9
CO Emissions (kg)	0.19	0.46	0.21	0.25	1.13
NOx Emissions (kg)	0.04	0.09	0.04	0.05	0.22
VOC Emissions (kg)	0.04	0.11	0.05	0.06	0.26
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

32: SB I-35 & CSAH 50

Direction	EB	WB	SB	All
Future Volume (vph)	653	674	1036	2363
Control Delay / Veh (s/v)	23	23	43	32
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	23	23	43	32
Total Delay (hr)	4	4	12	21
Stops / Veh	0.51	0.48	0.80	0.63
Stops (#)	333	322	833	1488
Average Speed (mph)	19	10	11	12
Total Travel Time (hr)	7	6	18	31
Distance Traveled (mi)	135	59	191	385
Fuel Consumed (gal)	12	8	23	42
Fuel Economy (mpg)	11.4	7.5	8.5	9.1
CO Emissions (kg)	0.83	0.55	1.58	2.96
NOx Emissions (kg)	0.16	0.11	0.31	0.58
VOC Emissions (kg)	0.19	0.13	0.37	0.69
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	17	13	17	47

133: NB I-35 & CSAH 50

Direction	EB	WB	All
Future Volume (vph)	1390	1346	2736
Control Delay / Veh (s/v)	0	0	0
Queue Delay / Veh (s/v)	0	0	0
Total Delay / Veh (s/v)	0	0	0
Total Delay (hr)	0	0	0
Stops / Veh	0.00	0.00	0.00
Stops (#)	0	0	0
Average Speed (mph)	35	35	35
Total Travel Time (hr)	3	3	6
Distance Traveled (mi)	122	89	211
Fuel Consumed (gal)	5	3	8
Fuel Economy (mpg)	26.2	26.2	26.2
CO Emissions (kg)	0.33	0.24	0.56
NOx Emissions (kg)	0.06	0.05	0.11
VOC Emissions (kg)	0.08	0.06	0.13
Unserved Vehicles (#)	0	0	0
Vehicles in dilemma zone (#)	0	0	0

134: 175th St & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1334	1004	321	306	2965
Control Delay / Veh (s/v)	17	7	39	25	17
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	17	7	39	25	17
Total Delay (hr)	6	2	3	2	14
Stops / Veh	0.55	0.34	0.54	0.42	0.46
Stops (#)	731	339	172	130	1372
Average Speed (mph)	11	26	10	10	16
Total Travel Time (hr)	8	8	5	3	25
Distance Traveled (mi)	88	225	55	33	402
Fuel Consumed (gal)	17	13	6	4	39
Fuel Economy (mpg)	5.3	17.8	9.6	9.2	10.4
CO Emissions (kg)	1.17	0.88	0.40	0.25	2.70
NOx Emissions (kg)	0.23	0.17	0.08	0.05	0.53
VOC Emissions (kg)	0.27	0.20	0.09	0.06	0.63
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	1	31	0	0	32

135: Kenrick Ave & CSAH 50

Direction	EB	WB	NB	SB	All
Future Volume (vph)	1245	949	298	406	2898
Control Delay / Veh (s/v)	24	29	48	53	32
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	24	29	48	53	32
Total Delay (hr)	8	8	4	6	26
Stops / Veh	0.42	0.60	0.71	0.62	0.54
Stops (#)	528	568	213	250	1559
Average Speed (mph)	19	19	12	7	16
Total Travel Time (hr)	14	13	7	8	42
Distance Traveled (mi)	279	243	79	50	651
Fuel Consumed (gal)	22	21	7	8	58
Fuel Economy (mpg)	12.6	11.6	10.8	6.4	11.2
CO Emissions (kg)	1.55	1.46	0.51	0.55	4.07
NOx Emissions (kg)	0.30	0.28	0.10	0.11	0.79
VOC Emissions (kg)	0.36	0.34	0.12	0.13	0.94
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	35	27	0	0	62

136: Kenrick Ave & Junelle Path

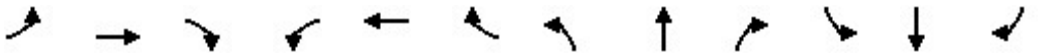
Direction	EB	WB	NB	SB	All
Future Volume (vph)	451	235	265	377	1328
Control Delay / Veh (s/v)	30	36	29	19	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	30	36	29	19	28
Total Delay (hr)	4	2	2	2	10
Stops / Veh	0.55	0.71	0.70	0.45	0.58
Stops (#)	246	168	185	171	770
Average Speed (mph)	13	8	10	13	12
Total Travel Time (hr)	7	3	3	3	17
Distance Traveled (mi)	87	27	33	45	192
Fuel Consumed (gal)	8	4	4	4	20
Fuel Economy (mpg)	11.3	7.2	8.3	10.6	9.8
CO Emissions (kg)	0.54	0.26	0.28	0.30	1.37
NOx Emissions (kg)	0.10	0.05	0.05	0.06	0.27
VOC Emissions (kg)	0.12	0.06	0.06	0.07	0.32
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

137: 175th St

Direction	EB	WB	NB	All
Future Volume (vph)	431	293	375	1099
Control Delay / Veh (s/v)	0	0	0	0
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	0	0	0	0
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	1.00	1.00	1.00
Stops (#)	431	293	375	1099
Average Speed (mph)	30	30	30	30
Total Travel Time (hr)	1	2	1	4
Distance Traveled (mi)	33	56	41	130
Fuel Consumed (gal)	4	4	4	11
Fuel Economy (mpg)	8.8	14.3	10.9	11.4
CO Emissions (kg)	0.26	0.28	0.26	0.80
NOx Emissions (kg)	0.05	0.05	0.05	0.16
VOC Emissions (kg)	0.06	0.06	0.06	0.19
Unserved Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals

Number of Intersections	7
Control Delay / Veh (s/v)	18
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	18
Total Delay (hr)	75
Stops / Veh	0.46
Stops (#)	6793
Average Speed (mph)	16
Total Travel Time (hr)	135
Distance Traveled (mi)	2212
Fuel Consumed (gal)	195
Fuel Economy (mpg)	11.4
CO Emissions (kg)	13.60
NOx Emissions (kg)	2.65
VOC Emissions (kg)	3.15
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	141
Performance Index	94.0



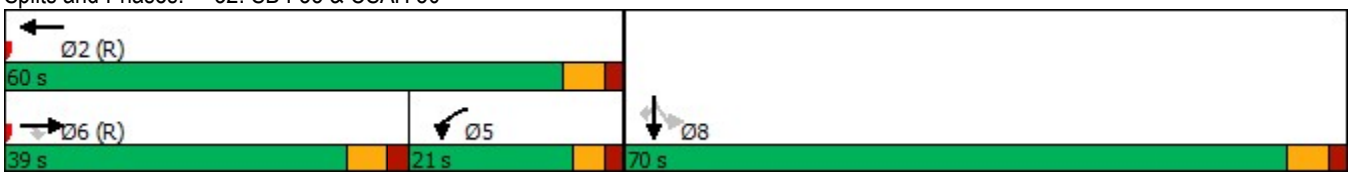
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Future Volume (vph)	12	435	40	112	344	93	25	9	128	90	12	16
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	3471	1553	1736	3471	1553	1736	1827	1553	1736	1827	1553
Peak Hour Factor	0.60	0.87	0.83	0.80	0.87	0.89	0.78	0.38	0.94	0.80	0.75	0.67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	500	48	140	395	104	32	24	136	113	16	24
Sign Control		Free			Free			Stop			Stop	

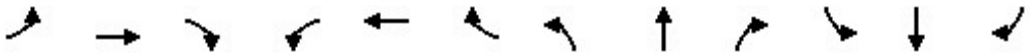
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Future Volume (vph)	0	432	221	199	475	0	0	0	0	958	4	74
Satd. Flow (prot)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Flt Permitted				0.950						0.950	0.953	
Satd. Flow (perm)	0	3471	1553	3367	3471	0	0	0	0	1649	1654	1553
Satd. Flow (RTOR)			263									96
Peak Hour Factor	1.00	0.92	0.84	0.86	0.93	1.00	1.00	1.00	1.00	0.98	0.50	0.77
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	470	263	231	511	0	0	0	0	489	497	96
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		6		5	2						8	
Permitted Phases			6							8		8
Total Split (s)		39.0	39.0	21.0	60.0					70.0	70.0	70.0
Total Lost Time (s)		6.0	6.0	5.0	6.0					6.0	6.0	6.0
Act Effct Green (s)		48.5	48.5	16.0	69.5					48.5	48.5	48.5
Actuated g/C Ratio		0.37	0.37	0.12	0.53					0.37	0.37	0.37
v/c Ratio		0.36	0.35	0.56	0.28					0.80	0.81	0.15
Control Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		32.5	5.4	49.8	12.4					45.6	46.3	4.4
LOS		C	A	D	B					D	D	A
Approach Delay		22.8			24.0						42.3	
Approach LOS		C			C						D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: SB I-35 & CSAH 50





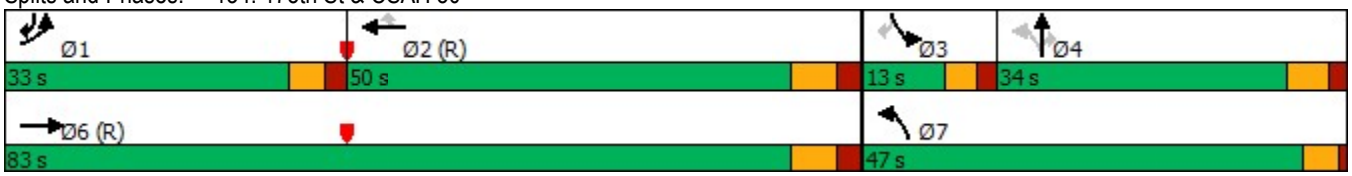
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Future Volume (vph)	0	1334	56	0	674	671	0	0	0	0	0	0
Satd. Flow (prot)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	3471	1553	0	4478	1335	0	0	0	0	0	0
Peak Hour Factor	1.00	0.95	0.82	1.00	0.94	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)						50%						
Lane Group Flow (vph)	0	1404	68	0	1078	361	0	0	0	0	0	0
Sign Control		Free			Free			Yield			Yield	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Future Volume (vph)	317	1017	0	0	947	57	129	1	191	37	0	269
Satd. Flow (prot)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Flt Permitted	0.950						0.950	0.954		0.950		
Satd. Flow (perm)	3367	3471	0	0	4988	1553	1649	1656	1553	1736	0	1553
Satd. Flow (RTOR)						113			137			225
Peak Hour Factor	0.91	0.96	1.00	1.00	0.89	0.65	0.75	0.25	0.96	0.93	1.00	0.82
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	348	1059	0	0	1064	88	88	88	199	40	0	328
Turn Type	Prot	NA			NA	Perm	pm+pt	NA	Perm	Prot		pm+ov
Protected Phases	1	6			2		7	4		3		1
Permitted Phases						2	4		4	3		3
Total Split (s)	33.0	83.0			50.0	50.0	47.0	34.0	34.0	13.0		33.0
Total Lost Time (s)	5.5	7.0			7.0	7.0	4.5	6.0	6.0	5.0		5.5
Act Effct Green (s)	19.0	94.1			69.6	69.6	24.4	22.9	12.7	7.3		24.8
Actuated g/C Ratio	0.15	0.72			0.54	0.54	0.19	0.18	0.10	0.06		0.19
v/c Ratio	0.71	0.42			0.40	0.10	0.28	0.30	0.72	0.41		0.69
Control Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	51.9	5.9			7.8	1.0	44.7	46.3	33.8	71.8		18.2
LOS	D	A			A	A	D	D	C	E		B
Approach Delay		17.3			7.3			39.3			24.0	
Approach LOS		B			A			D			C	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 9 (7%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

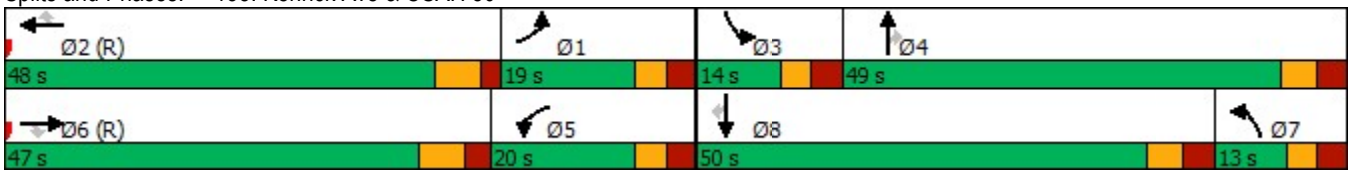
Splits and Phases: 134: 175th St & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Future Volume (vph)	251	849	145	130	718	101	126	100	72	149	97	160
Satd. Flow (prot)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3367	3471	1553	1736	3471	1553	3367	1827	1553	3367	1827	1553
Satd. Flow (RTOR)			185			185			134			180
Peak Hour Factor	0.87	0.94	0.88	0.88	0.91	0.84	0.83	0.69	0.67	0.91	0.81	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	903	165	148	789	120	152	145	107	164	120	180
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			8
Total Split (s)	19.0	47.0	47.0	20.0	48.0	48.0	13.0	49.0	49.0	14.0	50.0	50.0
Total Lost Time (s)	6.0	7.0	7.0	6.0	6.5	6.5	6.0	6.5	6.5	6.0	6.5	6.5
Act Effct Green (s)	13.0	64.5	64.5	14.0	66.0	66.0	11.8	18.0	18.0	8.0	14.1	14.1
Actuated g/C Ratio	0.10	0.50	0.50	0.11	0.51	0.51	0.09	0.14	0.14	0.06	0.11	0.11
v/c Ratio	0.86	0.52	0.19	0.80	0.45	0.14	0.50	0.58	0.32	0.79	0.61	0.55
Control Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
Queue Delay	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 Delay	72.8	13.3	1.5	85.8	22.3	0.6	61.6	60.3	6.2	86.0	67.4	13.5
LOS	E	B	A	F	C	A	E	E	A	F	E	B
Approach Delay		24.5			28.7			46.5			53.1	
Approach LOS		C			C			D			D	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

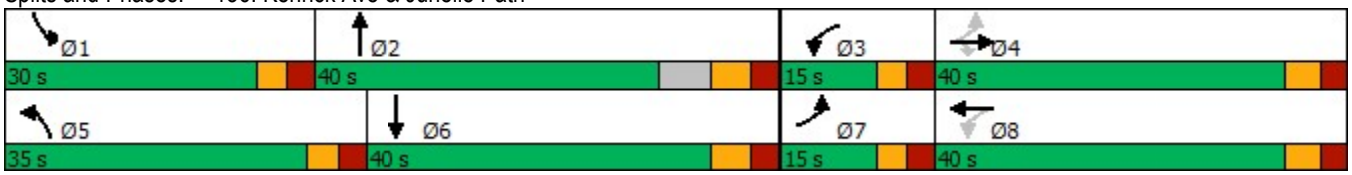
Splits and Phases: 135: Kenrick Ave & CSAH 50



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Future Volume (vph)	202	81	168	73	67	95	80	177	8	62	168	147
Satd. Flow (prot)	1736	1827	1553	1736	1675	0	1736	3426	0	1736	3232	0
Flt Permitted	0.372			0.695			0.950			0.950		
Satd. Flow (perm)	680	1827	1553	1270	1675	0	1736	3426	0	1736	3232	0
Satd. Flow (RTOR)			191		47			8			156	
Peak Hour Factor	0.84	0.84	0.88	0.91	0.70	0.79	0.74	0.83	0.40	0.78	0.91	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	96	191	80	216	0	108	233	0	79	341	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8								
Total Split (s)	15.0	40.0	40.0	15.0	40.0		35.0	40.0		30.0	40.0	
Total Lost Time (s)	5.7	6.2	6.2	5.7	6.2		5.7	6.8		5.7	6.8	
Act Effct Green (s)	27.2	19.4	19.4	22.7	14.9		10.2	37.4		8.7	33.4	
Actuated g/C Ratio	0.29	0.21	0.21	0.25	0.16		0.11	0.40		0.09	0.36	
v/c Ratio	0.78	0.25	0.40	0.23	0.70		0.56	0.17		0.48	0.27	
Control Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.6	35.1	7.9	24.2	41.3		51.5	19.7		51.2	12.7	
LOS	D	D	A	C	D		D	B		D	B	
Approach Delay		30.1			36.7			29.8			19.9	
Approach LOS		C			D			C			B	

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 92.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 136: Kenrick Ave & Junelle Path



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	180	126	167	174	201
Future Volume (vph)	250	180	126	167	174	201
Satd. Flow (prot)	1726	0	0	1792	1736	1553
Flt Permitted				0.981	0.950	
Satd. Flow (perm)	1726	0	0	1792	1736	1553
Peak Hour Factor	0.80	0.85	0.81	0.67	0.89	0.84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	525	0	0	405	196	239
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Control Type: Roundabout			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	524	405	435
Demand Flow Rate, veh/h	544	421	453
Vehicles Circulating, veh/h	162	204	324
Vehicles Exiting, veh/h	463	324	382
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.3	7.2	6.1
Approach LOS	A	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	TR	LT	L	R
Assumed Moves	TR	LT	L	R
RT Channelized				Yield
Lane Util	1.000	1.000	1.000	
Follow-Up Headway, s	2.609	2.609	2.609	
Critical Headway, s	4.976	4.976	4.976	249
Entry Flow, veh/h	544	421	204	992
Cap Entry Lane, veh/h	1170	1121	992	0.962
Entry HV Adj Factor	0.962	0.962	0.961	239
Flow Entry, veh/h	524	405	196	953
Cap Entry, veh/h	1126	1078	953	0.251
V/C Ratio	0.465	0.376	0.206	6.3
Control Delay, s/veh	8.3	7.2	5.8	A
LOS	A	A	A	1
95th %tile Queue, veh	3	2	1	

INCIDENT ID	INTERSECTION	SEGMENT	INCLUDE	NOTES	ACCIDENT #	MONTH	DAY	YEAR	DAY OF WEEK	HOUR	SEVERITY	MANNER OF COLLISION	COLLISION - ALLIANT	LIGHTING	WEATHER 1	WEATHER 2	SURFACE	UTM X	UTM Y	LATITUDE	LONGITUDE	DATE & TIME	STATUS	COLLISION DIAGRAM	NARRATIVE
1043708	INT 3		YES	ed light runner angle crash into WBL from off-r	222460141	9	3	2022	Sat	9	B	Angle	Angle	Daylight	Clear	-	Dry	477104.4604	4949517.488	44.69867374	-93.28899313	2022/09/03-09:00	Accepted	2022/09/03-09:00-L-C-D	Reportable
1041125	INT 3		YES	ed light runner angle crash into WBL from off-r	222340033	8	22	2022	Mon	11	C	Angle	Angle	Daylight	Clear	-	Dry	477126.0654	4949513.796	44.69864119	-93.28872027	2022/08/22-11:50	Accepted	2022/08/22-11:50-L-C-D	Reportable
806979	INT 3		YES	ed light runner angle crash into WBL from off-r	201040098	4	13	2020	Mon	19	PDO	Angle	Angle	Sunset	Clear	-	Dry	477125.5714	4949515.758	44.69865883	-93.28872659	2020/04/13-19:21	Accepted	2020/04/13-19:21-Du-C-D	Reportable
810835		SEG B	YES	decided to U-turn without looking for adjacent	201400039	5	19	2020	Tue	13	C	Front to Rear	Angle	Daylight	Clear	-	Dry	477099.4826	4949618.262	44.69958077	-93.28906047	2020/05/19-13:17	Accepted	2020/05/19-13:17-L-C-D	Reportable
818630	INT 2		YES	3 failed to yield to stop sign; angle with SB vehi	201890192	7	7	2020	Tue	18	PDO	Front to Rear	Angle	Daylight	Clear	-	Dry	477065.7565	4949804.392	44.70125529	-93.28949451	2020/07/07-18:31	Accepted	2020/07/07-18:31-L-C-D	Reportable
839755	INT 2		YES	ted NB driver rear ended vehicle waiting to ma	202530015	9	9	2020	Wed	9	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Dry	477063.2961	4949811.627	44.70132034	-93.28952589	2020/09/09-09:23	Accepted	2020/09/09-09:23-L-C-D	Reportable
1009879	INT 2		YES	failed to yield to stop sign; angle with NB vehic	220580102	2	27	2022	Sun	14	C	Angle	Angle	Daylight	Clear	-	Dry	477060.3126	4949820.399	44.70139921	-93.28956394	2022/02/27-14:11	Accepted	2022/02/27-14:11-L-C-D	Reportable
1056811	INT 2		YES	3 failed to yield to stop sign; angle with SB vehi	223130164	11	9	2022	Wed	17	PDO	Angle	Angle	Dark (Str Lights On)	Rain	-	Wet	477060.0563	4949821.152	44.70140599	-93.28956721	2022/11/09-17:39	Accepted	2022/11/09-17:39-DI-R-W	Reportable
800932	INT 2		YES	3 failed to yield to stop sign; angle with SB vehi	200570089	2	26	2020	Wed	16	B	Angle	Angle	Daylight	Clear	-	Dry	477058.967	4949824.355	44.70143479	-93.28958111	2020/02/26-16:55	Accepted	2020/02/26-16:55-L-C-D	Reportable
861171	INT 2		YES	3 failed to yield to stop sign; angle with SB vehi	203090053	11	4	2020	Wed	11	PDO	Angle	Angle	Daylight	Clear	-	Dry	477057.2327	4949829.455	44.70148064	-93.28960322	2020/11/04-11:52	Accepted	2020/11/04-11:52-L-C-D	Reportable
1038756	INT 3		YES	ed light runner angle crash into WBL from off-r	222210041	8	9	2022	Tue	11	PDO	Angle	Angle	Daylight	Clear	-	Dry	477126.0654	4949513.796	44.69864119	-93.28872027	2022/08/09-11:25	Accepted	2022/08/09-11:25-L-C-D	Reportable
978516	INT 3		YES	NBL failed to yield ROW to SBT at int	213390279	12	5	2021	Sun	21	PDO	Front to Front	Left-Turn	Dark (Str Lights On)	Snow	-	Dry	477114.8632	4949488.645	44.69841441	-93.28886054	2021/12/05-21:21	Accepted	2021/12/05-21:21-DI-S-D	Reportable
1060620	INT 3		YES	typical NB rear end; no info on distracted	223270098	11	23	2022	Wed	17	PDO	Front to Rear	Rear End	Dark (Str Lights On)	Clear	-	Dry	477165.1907	4949424.803	44.69784129	-93.28822247	2022/11/23-17:23	Accepted	2022/11/23-17:23-DI-C-D	Reportable
973393	INT 3		YES	e in bad weather, driver could not see adjacen	213170204	11	13	2021	Sat	17	PDO	Sideswipe - Same Direction	Sideswipe	Dark (Str Lights On)	Snow	-	Wet	477174.3674	4949407.761	44.69768817	-93.28810588	2021/11/13-17:19	Accepted	2021/11/13-17:19-DI-S-W	Reportable
1056704	INT 3		YES	typical NB rear end; following too closely	223130067	11	9	2022	Wed	14	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Wet	477174.0271	4949408.393	44.69769384	-93.28811021	2022/11/09-14:40	Accepted	2022/11/09-14:40-L-C-W	Reportable
1016907	INT 3		YES	left turn crash; unclear who was at fault	221000042	4	10	2022	Sun	14	C	Angle	Left-Turn	Daylight	Cloudy	-	Dry	477172.8644	4949388.884	44.69751819	-93.28812401	2022/04/10-14:24	Accepted	2022/04/10-14:24-L-C-D	Reportable
806918	INT 4		YES	BL collision with a SBT; unclear who was at fau	201040046	4	13	2020	Mon	14	PDO	Front to Rear	Angle	Daylight	Cloudy	Clear	Dry	477219.2173	4949358.541	44.6972465	-93.28753761	2020/04/13-14:22	Accepted	2020/04/13-14:22-L-C-D	Reportable
967640	INT 4		YES	ed light runner angle crash into EBL from off-ra	212910069	10	18	2021	Mon	14	PDO	Angle	Angle	Daylight	Clear	-	Dry	477210.2595	4949350.277	44.69717182	-93.28765031	2021/10/18-14:40	Accepted	2021/10/18-14:40-L-C-D	Reportable
863076	INT 3		YES	NBL failed to yield ROW to SBT at int	203170177	11	12	2020	Thu	16	B	Angle	Left-Turn	Daylight	Cloudy	-	Wet	477210.8032	4949349.841	44.69716792	-93.28764342	2020/11/12-16:05	Accepted	2020/11/12-16:05-L-C-W	Reportable
777027	INT 4		YES	SBT failed to yield ROW to EBL	200040032	1	4	2020	Sat	11	PDO	Angle	Angle	Daylight	Clear	-	Dry	477216.2269	4949345.495	44.69712896	-93.28757478	2020/01/04-11:36	Accepted	2020/01/04-11:36-L-C-D	Reportable
909824	INT 3		YES	ed light runner angle crash into EBL from off-ra	211550085	6	4	2021	Fri	15	C	Front to Front	Angle	Daylight	Clear	-	Dry	477215.8779	4949345.774	44.69713147	-93.28757919	2021/06/04-15:16	Accepted	2021/06/04-15:16-L-C-D	Reportable
1047285	INT 4		YES	improper merge	222650131	9	22	2022	Thu	16	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477225.82	4949353.582	44.69720207	-93.28745406	2022/09/22-16:49	Accepted	2022/09/22-16:49-L-C-D	Reportable
889152	INT 4		YES	B off-ramp vehicle ran red light by sliding on ic	210400045	2	9	2021	Tue	7	C	Angle	Angle	Daylight	Clear	-	Snow	477218.093	4949343.999	44.69711556	-93.28755116	2021/02/09-07:55	Accepted	2021/02/09-07:55-L-C-S	Reportable
1012898	INT 4		YES	typical NB rear end; following too closely	220750086	3	16	2022	Wed	18	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477280.493	4949303.721	44.69675494	-93.28676179	2022/03/16-18:00	Accepted	2022/03/16-18:00-L-C-D	Reportable
1025217		SEG D	YES	information; possible WBR failing to yield ROW	221470161	5	27	2022	Fri	16	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Cloudy	-	Dry	477305.5733	4949272.189	44.69647187	-93.28644384	2022/05/27-16:04	Accepted	2022/05/27-16:04-L-C-D	Reportable
1016342		SEG D	YES	NB following too closely	220970080	4	7	2022	Thu	14	PDO	Front to Rear	Rear End	Daylight	Rain	Snow	Wet	477321.9252	4949245.788	44.69623472	-93.28623629	2022/04/07-14:38	Accepted	2022/04/07-14:38-L-R-W	Reportable
813757		SEG D	YES	NB following too closely	201610175	6	9	2020	Tue	17	PDO	Front to Rear	Rear End	Sunset	Rain	-	Wet	477325.9684	4949239.145	44.69617505	-93.28618497	2020/06/09-17:07	Accepted	2020/06/09-17:07-Du-R-W	Reportable
817795	INT 5		YES	NBL failed to yield ROW to SBT at int	201850103	7	3	2020	Fri	21	PDO	Angle	Left-Turn	Dark (Str Lights On)	Clear	-	Dry	477326.853	4949189.893	44.6957317	-93.28617162	2020/07/03-21:28	Accepted	2020/07/03-21:28-DI-C-D	Reportable
1035935	INT 5		YES	WBR failed to yield ROW to NBT	222060050	7	25	2022	Mon	12	PDO	Angle	Angle	Daylight	Clear	-	Dry	477346.6137	4949201.709	44.69583869	-93.28592274	2022/07/25-12:16	Accepted	2022/07/25-12:16-L-C-D	Reportable
808990	INT 5		YES	WBR failed to yield ROW to NBT	201240024	5	3	2020	Sun	15	B	Front to Rear	Angle	Daylight	Clear	-	Dry	477348.7448	4949197.191	44.69579808	-93.28589564	2020/05/03-15:23	Accepted	2020/05/03-15:23-L-C-D	Reportable
822231	INT 5		YES	SBL failed to yield to NBT	202100113	7	28	2020	Tue	16	C	Angle	Left-Turn	Daylight	Clear	-	Dry	477360.1399	4949171.321	44.69556556	-93.28575068	2020/07/28-16:49	Accepted	2020/07/28-16:49-L-C-D	Reportable
845415	INT 6		YES	improper merge	202830071	10	9	2020	Fri	16	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477399.207	4949022.914	44.69423078	-93.28525105	2020/10/09-16:45	Accepted	2020/10/09-16:45-L-C-D	Reportable
1021227	INT 6		YES	SBT ran red light	221260164	5	6	2022	Fri	21	PDO	Angle	Angle	Dark (Str Lights On)	Clear	-	Dry	477412.334	4948991.211	44.6939458	-93.28508398	2022/05/06-21:48	Accepted	2022/05/06-21:48-DI-C-D	Reportable
894860	INT 6		YES	sideswipe while executing a SBL turn	210680019	3	9	2021	Tue	10	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477444.1887	4948982.898	44.69387197	-93.28468158	2021/03/09-10:15	Accepted	2021/03/09-10:15-L-C-D	Reportable
1027719	INT 6		YES	NBT following too closely	221610131	6	10	2022	Fri	18	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477444.1887	4948982.898	44.69387197	-93.28468158	2022/06/10-18:10	Accepted	2022/06/10-18:10-L-C-D	Reportable
895575	INT 6		YES	NBT rear end distracted	210720062	3	13	2021	Sat	19	PDO	Front to Rear	Rear End	Dark (Str Lights On)	Clear	-	Dry	477445.2248	4948980.781	44.69385294	-93.28466841	2021/03/13-19:47	Accepted	2021/03/13-19:47-DI-C-D	Reportable
1039364	INT 6		YES	NBT following too closely	222240056	8	12	2022	Fri	15	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477445.2378	4948980.755	44.6938527	-93.28466825	2022/08/12-15:46	Accepted	2022/08/12-15:46-L-C-D	Reportable
1021910	INT 6		YES	NBT rear end distracted	221300130	5	10	2022	Tue	15	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Dry	477445.6324	4948979.948	44.69384546	-93.28466323	2022/05/10-15:20	Accepted	2022/05/10-15:20-L-C-D	Reportable
781926	INT 6		YES	NBT rear end distracted	200210143	1	21	2020	Tue	7	PDO	Front to Rear	Rear End	Sunrise	Clear	-	Wet	477447.549	4948976.032	44.69381026	-93.28463887	2020/01/21-07:18	Accepted	2020/01/21-07:18-Dn-C-W	Reportable
1014167	INT 6		YES	NBT rear end distracted	220810191	3	22	2022	Tue	16	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Wet	477457.5172	4948955.697	44.69362751	-93.28451217	2022/03/22-16:37	Accepted	2022/03/22-16:37-L-C-W	Reportable
1021753	INT 6		YES	NBT rear end unclear who at fault	221300015	5	10	2022	Tue	8	B	Front to Rear	Rear End	Daylight	Clear	-	Dry	477487.2338	4948895.15	44.69308338	-93.28413446	2022/05/10-08:10	Accepted	2022/05/10-08:10-L-C-D	Reportable
1001044	INT 7		YES	IBT ran red light; angle with SBT (glare from su	220230095	1	23	2022	Sun	11	PDO	Angle	Angle	Daylight	Clear	-	Ice/Frost	477568.0259	4949121.242	44.69512126	-93.28312473	2022/01/23-11:55	Accepted	2022/01/23-11:55-L-C-S	Reportable
1068058	INT 7		YES	t ice and slid into intersection, angle collision w	223550118	12	21	2022	Wed	13	B	Angle	Angle	Daylight	Snow	-	Snow	477557.5303	4949131.52	44.69521346	-93.28325765	2022/12/21-13:08	Accepted	2022/12/21-13:08-L-S-S	Reportable
1069640	INT 7		YES	WBT hit ice and slid into intersection, rear end	223580196	12	24	2022	Sat	12	PDO	Front to Rear	Rear End	Daylight	Clear	-	Snow	477560.2694	4949134.885	44.69524384	-93.28322323	2022/12/24-12:52	Accepted	2022/12/24-12:52-L-C-S	Reportable
931245	INT 6		YES	EBT distracted rear end	212100147	7	29	2021	Thu	15	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Dry	477402.209	4948985.162	44.69389102	-93.28521149	2021/07/29-15:13	Accepted	2021/07/29-15:13-L-C-D	Reportable
1037906	INT 2		YES	failed to yield to stop sign; angle with SB vehic	222160084	8	4	2022	Thu	15	PDO	Angle	Angle	Daylight	Clear	-	Dry	477050.4028	4949819.616	44.70139185	-93.28968899	2022/08/04-15:34	Accepted	2022/08/04-15:34-L-C-D	Reportable
1007217	INT 2		YES	3 failed to yield to stop sign; angle with SB vehi	220490028	2	18	2022	Fri	11	PDO	Front to Front	Angle	Daylight	Clear	-	Dry	477055.7598	4949821.716	44.70141092	-93.28962147	2022/02/18-11:05	Accepted	2022/02/18-11:05-L-C-D	Reportable
799965	INT 2		YES	I failed to yield to stop sign; angle with NB vehi	200520199	2	21	2020	Fri	18	PDO	Angle	Angle	Sunset	Clear	-	Dry	477059.15	4949823.044	44.70142299	-93.28957874	2020/02/21-18:00	Accepted	2020/02/21-18:00-Du-C-D	Reportable
896696	INT 2		YES	I failed to yield to stop sign; angle with NB vehi	210780048	3	19	2021	Fri	14	C	Angle	Angle	Daylight	Clear	-	Dry	477060.2494	4949823.373	44.70142599	-93.28956487	2021/03/19-14:16	Accepted	2021/03/19-14:16-L-C-D	Reportable
1040281	INT 2		YES	failed to yield to stop sign; angle with SB vehic	222290107	8	17	2022	Wed	18	PDO	Angle	Angle	Daylight	Cloudy	-	Dry	477059.3819	4949823.135	44.70142382	-93.28957581	2022/08/17-18:53	Accepted	2022/08/17-18:53-L-C-D	Reportable
929257	INT 2		YES	failed to yield to stop sign; angle with SBT veh	212010033	7	20	2021	Tue	11	PDO	Angle	Angle	Daylight	Clear	-	Dry	477060.7295	4949823.504	44.70142718	-93.28955882	2021/07/20-11:51	Accepted	2021/07/20-11:51-L-C-D	Reportable
1051460	INT 2		YES	I to yield ROW to NB but also NB was driving er	222860073	10	13	2022	Thu	15	C	Angle	Angle	Daylight	Clear	-	Dry	477061.6281	4949823.751	44.70142943	-93.28954749	2022/10/13-15:01	Accepted	2022/10/13-15:01-L-C-D	Reportable
892038	INT 2		YES	I failed to yield to stop sign; angle with NB vehi	210520027	2	21	2021	Sun	9	PDO	Angle	Angle	Daylight	Clear	-	Dry	477065.0836	4949824.697	44.70143806	-93.28950391	2021/02/21-09:29	Accepted	2021/02/21-09:29-L-C-D	Reportable
889308	INT 6		YES	NB and WB angle; unclear who was at fault	210400190	2	9	2021	Tue	15	PDO	Angle	Angle	Daylight	Clear	-	Dry	477421.4087	4948996.815	44.69399653	-93.2849697	2021/02/09-15:05	Accepted	2021/02/09-15:05-L-C-D	Reportable
977011	INT 6		YES	NB rear end potentially caused by ice?	213360105	12	2	2021	Thu	18	PDO	Front to Rear	Rear End	Dark (Str Lights On)	Cloudy	-	Dry	477427.9322	4949000.844	44.69403301	-93.28488754	2021/12/02-18:15	Accepted	2021/12/02-18:15-DI-C-D	Reportable
785811	INT 6		YES	g forward and not paying attention to see if vel	200370030	2	6	2020	Thu	10	C	Front to Rear	Rear End	Daylight	Clear	-	Dry	477437.7446	4949006.471	44.69408397	-93.28476395	2020/02/06-10:47	Accepted	2020/02/06-10:47-L-C-D	Reportable
1013865	INT 6		YES	g forward and not paying attention to see if vel	220820020	3	23	2022	Wed	8	PDO	Front to Rear	Rear End	Daylight	Snow	Cloudy	Wet	477437.4114	4949006.3	44.69408243	-93.28476815	2022/03/23-08:26	Accepted	2022/03/23-08:26-L-S-W	Reportable
1014562	INT 6		YES	g forward and not paying attention to see if vel	220870017	3	28	2022	Mon	8	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477439.9091	4949007.577	44.694094	-93.28473668	2022/03/28-08:15	Accepted	2022/03/28-08:15-L-C-D	Reportable
975518	INT 6		YES	IBR sideswipe with a SBL (did not maintain lane	213280026	11	24	2021	Wed	11	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477462.146	4948991.384	44.69394892	-93.28445532	2021/11/24-11:03	Accepted	2021/11/24-11:03-L-C-D	Reportable
849178	INT 7		YES	WBT potentially hit ice and hit NBT angle crash	202990064	10	25	2020	Sun	13	B	Angle	Angle	Daylight	Snow	-	Wet	477561.1493	4949127.595	44.69517825	-93.2832118	2020/10/25-13:26	Accepted	2020/10/25-13:26-L-S-W	Reportable
956185	INT 7		YES	EBL made wide turn and struck sign	212840072	10	11	2021	Mon	14	PDO	-	Other	Daylight	Clear	-	Dry	477557.0906	4949131.925	44.69521709	-93.28326322	2021/10/11-14:00	Accepted	2021/10/11-14:00-L-C-D	Reportable
1020225	INT 8		YES	NB failed to yield ROW at the RAB; DUI	221210062	5	1	2022	Sun	15	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Dry	477508.0837	4949204.611	44.6958699	-93.28388493	2022/05/01-15:47	Accepted	2022/05/01-15:47-L-C-D	Reportable
1056039	INT 6		YES	g forward and not paying attention to see if vel	223100015	11	6	2022	Sun	9	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477473.5614	4949271.018	44.69646663	-93.28432357	2022/11/06-09:33	Accepted	2022/11/06-09:33-L-C-D	Reportable
1011957	INT 6		YES	improper NB merge	220670160	3	8	2022	Tue	16	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477576.2313	4949106.237	44.69498644	-93.28302052	2022/03/08-16:53	Accepted	2022/03/08-16:53-L-C-D	Reportable
866358	INT 5		YES	WBR failed to yield ROW to NBT	203380047	12	3	2020	Thu	15	PDO	Angle	Angle	Daylight	Clear	-	Dry	477342.5195	4949195.116	44.69577921	-93.28597412	2020/12/03-15:20	Accepted	2020/12/03-15:20-L-C-D	Reportable
896968	INT 5		YES	g forward and not paying attention to see if vel	210800039	3	21	2021	Sun	9	PDO	Front to Rear	Rear End	Daylight	Cloudy	-	Dry	477347.1912	4949196.673	44.69579337	-93.28591523	2021/03/21-09:59	Accepted	2021/03/21-09:59-L-C-D	Reportable
1036572	INT 5		YES	WB distracted rear end	222090039	7	28	2022	Thu	7	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477348.7448	4949197.191	44.69579808	-93.28589564	2022/07/28-07:00	Accepted	2022/07/28-07:00-L-C-D	Reportable
1054308	INT 5		YES	g forward and not paying attention to see if vel	223010029	10	28	2022	Fri	9	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	477359.415	4949201.796	44.69583988	-93.28576118	2022/10/28-09:00	Accepted	2022/10/28-09:00-L-C-D	Reportable
823218	INT 3		YES	sideswipe on SB I-35 off ramp	202160003	8	3	2020	Mon	0	PDO	Sideswipe - Same Direction	Sideswipe	Dark (Str Lights On)	Clear	-	Dry	477133.7943	4949519.547	44.6986932	-93.28862298	2020/08/03-00:33	Accepted	2020/08/03-00:33-DI-C-D	Reportable
913192	INT 3		YES	ed light runner angle crash into WBL from off-r	211700092	6	19	2021	Sat	20	C	Angle	Angle	Daylight	Clear	-	Dry	477119.8512	4949509.173	44.69859937	-93.2887985	2021/06/19-20:38	Accepted	2021/06/19-20:38-L-C-D	Reportable
1055671	INT 3		YES	failure to maintain proper lane while making LT	223070123	11	3	2022	Thu	22	PDO	Front to Rear	Sideswipe	Dark (Str Lights On)	Rain	-	Wet	477117.7342	4949507.598	44.69858512	-93.28882515	2022/11/03-22:55	Accepted	2022/11/03-22:55-DI-R-W	Reportable
1065140	INT 4		YES	failure to maintain proper lane while making RT	223120303	11	8	2022	Tue	16	PDO	Sideswipe - Same Direction	Sideswipe	Daylight	Clear	-	Dry	477196.9741	4949313.595	44.69684118	-93.28781635	2022/11/08-16:40	Accepted	2022/11/08-16:40-L-C-D	Reportable
1066270	INT 4		YES	NBT struck SBL at angle because of ice	223500292	12	16	2022	Fri	20	PDO	Angle	Angle	Dark (Str Lights On)	Snow	-	Snow	477222.6532	4949371.062	44.69735933	-93.2874948	2022/12/16-20:14	Accepted	2022/12/16-20:14-DI-S-S	Reportable
1024333	INT 4		YES	illegal NBU; failing to yield ROW to SBT	221430075	5	23	2022	Mon	15	PDO	Angle	Angle	Daylight	Cloudy	-	Dry	477218.093	4949343.999	44.69711556	-93.28755116	2022/05/23-15:45	Accepted	2022/05/23-15:45-L-C-D	Reportable

CMF Calculation for CSAH 50

Intersection		Number of Historical Crashes					Improvements	CMF ID	CMF Description	CMF Value	Applies to?	CMF Applied					Number of Predicted Crashes				
		K	A	B	C	PDO						K	A	B	C	PDO	K	A	B	C	PDO
1	CSAH 50 / Kenwood Trail & Klamath Trail / 170th Street W	0	0	0	0	0	Typing in; TWLTL to Paved Median	N/A	N/A	1.00	All	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
2	CSAH 50 / Kenwood Trail & Kenyon Avenue	0	0	1	3	10	Signalizing; adding 2 SB thru lanes, convert WBT to WBL, convert WBR to WBTR, add 1 NB thru lane, add one NBL lane, raised median on all 4 approaches	7848	Install a traffic signal	0.61	All	0.61	0.61	0.61	0.61	0.61	0.00	0.00	0.61	1.83	6.10
3	CSAH 50 / Kenwood Trail & I-35 Southbound Ramps	0	0	2	4	8	Add 1 SBT, add 1 NBL, realign intersection; remove channelized RT for ramps	8428	Improve angle of channelized right turn lane	0.56	All	0.56	0.56	0.56	0.56	0.56	0.00	0.00	1.12	2.23	4.46
4	CSAH 50 / Kenwood Trail & I-35 Northbound Ramps	0	0	0	1	8	Realigning/new intersection	N/A	Assuming new intersection with predicted crashes based on MnDOT average crash rate[1]	N/A	All	N/A	N/A	N/A	N/A	N/A	0.09	0.33	2.53	5.21	20.24
5	CSAH 50 / Kenwood Trail & 175th Street W	0	0	1	1	6	Closing connection (all crashes associated with side street eliminated)	N/A	Eliminate all crashes associated with side streets	0.00	All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Intersection		Number of Historical Crashes					Improvements	CMF ID	CMF Description	CMF Value	Applies to?	CMF Applied					Number of Predicted Crashes				
		K	A	B	C	PDO						K	A	B	C	PDO	K	A	B	C	PDO
1	CSAH 50 / Kenwood Trail (Klamath Trail / 170th Street W to Kenyon Avenue)	0	0	0	0	0	-	N/A	N/A	1.00	All	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
2	CSAH 50 / Kenwood Trail (Kenyon Avenue to I-35 Southbound Ramps)	0	0	0	1	0	physical median; adding a thru lane	7732	Add a through lane on both directions and a raised median	0.32	All	0.32	0.32	0.32	0.32	0.32	0	0	0	0.32	0
3	CSAH 50 / Kenwood Trail (I-35 Southbound Ramps to I-35 Northbound Ramps)	0	0	0	0	0	-	N/A	N/A	1.00	All	1.00	1.00	1.00	1.00	1.00	0	0	0	0	0
4	CSAH 50 / Kenwood Trail (I-35 Northbound Ramps to 175th Street W)	0	0	0	3	0	adding a thru lane	7924	Increase from 4 to 6 lanes	0.85	All	0.85	0.85	0.85	0.85	0.85	0	0	0	2.55	0

[1] From 2022 MnDOT Intersection Toolkit: 0.61 crashes per MEV; (0.61*25500*5*365)/1000000 = 28.38 total crashes
28.38 total * distribution of crash severities from 2015 MnDOT Intersection Toolkit = 0.09 K, 0.33 A, 2.53 B, 5.21 C, 20.24 PDO

Total Predicted	47.61
Total Observed	49
Calculated Overall CMF	0.972

Regional Solicitation Application 2024: I-35 at CR 5/50 Interchange Reconstruction

Existing Conditions Photograph

CR 5/50 Looking West Under I-35

The photo shows CR 5/50 looking west under I-35 at the current interchange. The project will improve sightlines and geometrics, add needed westbound through capacity on CR 5/50, add a new 10-foot trail on the north side of the road where there isn't one today, and enhance or add new pedestrian crossings at three signalized intersections.

Interchange Aerial Looking East/Southeast

Aerial view of CR 5/50 interchange looking east/southeast (Fall 2023). The current interchange design constrains traffic on both CR 5/50 and I-35 and has only minimal pedestrian and bicycle infrastructure.