Application

17072 - 2022 Roadway Expansion

17616 - Dakota County CSAH 46 Expansion Safety and Mobility Project

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	04/14/2022 1:28 PM

Primary Contact

Name:*	She/her/her Pronouns	Jenna First Name	Lee Middle Name	Fabish Last Name
Title:	Assistant Design Engineer			
Department:	Transportation			
Email:	jenna.fabish@co.dakota.mn.us			
Address:	14955 Galaxie Avenue, 3rd Floor			
*	Apple Valley City	Minnesota State/Province	55124 Postal Code/Zip	
Phone:*	952-891-7123 Phone		Ext.	
Fax:				
What Grant Programs are you most interested in?	Regional Solicitation - Roadways Including Multimodal Elements			

Organization Information

Name:

Jurisdictional Agency (if different):

Organization Type:

Organization Website:

Address:

*

City State/Province Postal Code/Zip

County:

Phone:*

Ext.

Fax:

PeopleSoft Vendor Number

Project Information

Project Name	CSAH 46 Expansion Safety and Mobility Project
Primary County where the Project is Located	Dakota
Cities or Townships where the Project is Located:	Cities of Coates and Rosemount and Empire Township
Jurisdictional Agency (If Different than the Applicant):	

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

CSAH 46 Expansion Safety and Mobility Project includes expanding existing CSAH 46 from undivided 2-lane to a divided 4 lane roadway from TH 3 in Rosemount and Empire Township through the CSAH 46/TH 52 interchange in Coates and pavement preservation work and ADA improvements along CSAH 46 from the CSAH 46/TH 52 interchange to County Road 48 in Coates.

CSAH 46 is an A minor expander between TH 3 and Biscayne Avenue (0.64 miles) and an A minor connector from Biscayne Avenue to County Road 48 in Coates. The CSAH 46 corridor extends from CSAH 5 (west of I-35) in Lakeville as an A-minor expander east to Biscayne Avenue where it becomes an A minor connector. CSAH 46 remains an A minor connector from Biscayne Avenue east to TH 61 in Hastings. The 2017 Regional Truck Highway Corridors Study identified CSAH 46 from CSAH 23 (Cedar Avenue) to the CSAH 46/TH 52 interchanges as a Tier 3 truck route (score 8.8). The 2021 Truck Corridor Study reviewed the existing truck corridors and upgraded CSAH 46 from CSAH 23 to CSAH 46/TH 52 interchange to a Tier 2 truck route (score 19.7). This was an increase of 10.9.

The CSAH 46 corridor provides regional connectivity by connecting I-35 in Lakeville with TH 61 in Hastings. The CSAH 46 corridor provides freight access to Dakota Aggregates, Cemstone, Aggregate Industries, Umore Park, and several other commercial businesses. Several of these businesses provide goods to the County as well as the Twin Cities region.

The CSAH 46 Expansion Safety and Mobility Project will reconstruct CSAH 46 as a rural 4-lane

divided roadway with trail along the north side from TH 3 east through the CSAH 46/TH 52 interchange, construct roundabouts at both the west and east ramps of the CSAH 46/TH 52 interchange, install a grade separated crossing of CSAH 46 for the County's Vermillion Highlands Greenway near Akron Avenue, and implement access management to improve safety and mobility.

(Limit 2,800 characters; approximately 400 words)

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

CSAH 46 FROM TH 3 TO THE CSAH 46/TH 52 INTERCHANGE - RECONSTRUCT AND EXPAND TO DIVIDED 4-LANE, CSAH 46 GRADE SEPARATED CROSSING, INTERCHANGE RAMP ROUNDABOUTS AND MILL AND OVERLAY FROM CSAH 46/TH 52 INTERCHANGE TO CR 48 IN COATES/ROSEMOUNT/EMPIRE TOWNSHIP

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

Project Length (Miles) 5.7

to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project? Yes

If yes, please identify the source(s) 2022

Federal Amount $10,000,000.00

Match Amount $30,000,000.00

Minimum of 20% of project total

Project Total $40,000,000.00

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

Match Percentage 75.0%

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

Source of Match Funds Dakota County: $27,600,000, Rosemount: $2,400,000

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

Preferred Program Year

Select one: 2026

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

Additional Program Years: 2024, 2025

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

Project Information-Roadways

County, City, or Lead Agency	Dakota County
Functional Class of Road	A minor expander/A minor connector
Road System *TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET*	CSAH
Road/Route No. *i.e., 53 for CSAH 53*	46
Name of Road *Example; 1st ST., MAIN AVE*	160th Street West/Brandel Drive
Zip Code where Majority of Work is Being Performed	55068
(Approximate) Begin Construction Date	11/01/2024
(Approximate) End Construction Date	08/31/2027

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

From: **(Intersection or Address)**	TH 3
To: **(Intersection or Address)** *DO NOT INCLUDE LEGAL DESCRIPTION*	CR 48
Or At	
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of Trail (nearest 0.1 miles)	5.8
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	0
Primary Types of Work *Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.*	GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER, STORM SEWER, LIGHTING, BIKE PATH, PED RAMPS, RETAINING WALLS, BRIDGE

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

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

Requirements - All Projects

All Projects

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

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

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

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

With reference to the Thrive MSP 2040 TPP, Table 2-1 on pages 2.6 - 2.16 (and related sections/pages), the proposed modernization project relates primarily to these goals and corresponding objectives & strategies:

A. Transportation System Stewardship (p 2.6):

Goal A: Transportation System Stewardship:

Objective: Efficiently preserve and maintain the regional transportation system in a state of good repair.

Objective: Operate the regional transportation system to efficiently and cost-effectively connect people and freight to destinations

Strategies: A1 and A2 (Page 2.6)

B. Safety and Security (p 2.7):
Objective: Reduce crashes and improve safety and security for all modes of passenger travel and

freight transportation.

Strategies: B1, B4, B5, and B6 (Page 2.7)

C. Access to Destinations (p 2.8-2.11):
Objective: Increase the availability of multimodal travel options, especially in congested highway corridors.

Objective: Increase travel time reliability and predictability for travel on highway and transit systems.

Objective: Ensure access to freight terminals such

as river ports, airports, and intermodal rail yards.

Objective: improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically underrepresented populations.

Strategies: C1-4, C6-10 , C15-17 and C19 (Page 2.8-2.10)

D. Competitive Economy (p 2.11-2.12):
Objective: Improve multimodal access to regional job concentrations identified in Thrive MSP 2040.

Objective: Invest in a multimodal transportation system to attract and retain businesses and residents.

Objective: Support the region's economic competitiveness through efficient movement of freight

Strategies: D1-5 (Page 2.11)

E. Healthy Environment (p 2.12-2.14):
Objective: Reduce impacts of transportation construction, operations, and use on the natural, cultural and developed environments.
Objective: Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles.

Objective: Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations.

Strategies: E1-7 (Page 2.12-2.13)

F. Leveraging Transportation Investments to Guide Land Use (p 2.14-p 2.16):

Objective: Focus regional growth in areas that support the full range of multimodal travel.

Objective: Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement

Objective: Encourage local land use design that integrates highways, streets, transit, walking, and bicycling.

Strategies: F1, F2, F3, & F5-8 (Page 2.14-2.15)

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.

Dakota County 2040 Transportation Plan

Chapter 9

Goal 6: Expansion of Transportation Corridors

Figure 43 - Dakota County Highway Capacity Deficiencies, 2019 (page 9-6)

Figure 44 - Dakota County Highway Capacity Deficiencies, 2040 (page 9-7)

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

The project will be expanding CSAH 46 to a 4-lane divided roadway from TH 3 to the CSAH 46/TH 52 interchange. The project will maintain a regional east-west corridor, improve mobility of freight, and provide multimodal facilities.

Dakota County 2022-2026 Capital Improvement Program (CIP)

CIP Sheet (page (Trans 58)

Limit 2,800 characters, approximately 400 words

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

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

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

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

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

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

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

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

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

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

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

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

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

Date plan completed: 06/19/2018

Link to plan: https://www.co.dakota.mn.us/Transportation/TransportationStudies/Past/Pages/ada-transition-plan.aspx#:~:text=Dakota%20County%20developed%20the%20Dakota,adjacent%20trails%20and%20pedestrian%20crossings.

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

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

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

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

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

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

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

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

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

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

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

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

Roadways Including Multimodal Elements

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

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

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

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

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

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

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

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

Bridge Rehabilitation/Replacement projects only:

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

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

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

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

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

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

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

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$1,500,000.00
Removals (approx. 5% of total cost)	$1,300,000.00
Roadway (grading, borrow, etc.)	$7,000,000.00
Roadway (aggregates and paving)	$12,400,000.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$750,000.00
Ponds	$1,500,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$1,800,000.00
Traffic Control	$250,000.00
Striping	$150,000.00
Signing	$280,000.00
Lighting	$148,000.00
Turf - Erosion & Landscaping	$250,000.00
Bridge	$1,000,000.00
Retaining Walls	$7,000,000.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$0.00
Wetland Mitigation	$200,000.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$1,000,000.00
Other Roadway Elements	$2,400,000.00
Totals	**$38,928,000.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$900,000.00

Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$72,000.00
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	$100,000.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$1,072,000.00**

Specific Transit and TDM Elements

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

Transit Operating Costs

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

Totals

Total Cost	$40,000,000.00

Construction Cost Total	$40,000,000.00
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:	43
Peak Hour Travel Speed:	36
Percentage Decrease in Travel Speed in Peak Hour compared to Free-Flow:	16.28%
Upload Level of Congestion map:	1649364434064_CP 99-013 - Level of Congestion Map.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor	CSAH 42

Adjacent Parallel Corridor Start and End Points:

Start Point:	TH 3
End Point:	CSAH 42/TH 52 interchange
Free-Flow Travel Speed:	53

The Free-Flow Travel Speed is black number.

Peak Hour Travel Speed:	51

The Peak Hour Travel Speed is red number.

Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow:	3.77%
Upload Level of Congestion Map:	1649364434064_CP 99-013 - Level of Congestion Map.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: 1299

Existing Manufacturing/Distribution-Related Employment within 1 Mile: 125

Existing Post-Secondary Students within 1 Mile: 0

Upload Map 1649936060748_CP 99-013 Regional Economy Map.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: Yes

Miles: 5.1

(to the nearest 0.1 miles)

Along Tier 3:

Miles: 0

(to the nearest 0.1 miles)

The project provides a direct and immediate connection (i.e., intersects) with either a Tier 1, Tier 2, or Tier 3 corridor:

None of the tiers:

Measure A: Current Daily Person Throughput

Location TH 3 to Biscayne Avenue

Current AADT Volume 15100

Existing Transit Routes on the Project N/A

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

Upload Transit Connections Map 1649936139490_CP 99-013 Transit Connections Map.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	19630.0

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 Travel Demand Model
Forecast (2040) ADT volume	21000

Measure A: Engagement

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

Response:

In the Fall 2020, Dakota County and the cities of Coates and Rosemount and Empire Township partnered on the preliminary design of the CSAH 46 expansion to 4-lanes from TH 3 to the CSAH 46/TH 52 interchange and pavement preservation work on CSAH 46 from the CSAH 46/TH 52 interchange to CR 48 in Coates. As part of the preliminary design kickoff, the project team mailed out an introduction letter. As part of the letter, residents were encouraged to visit the project website to provide input on issues/concerns they were seeing along the corridor. This information was incorporated into the corridor operations review and roadway alignment. The County utilized its social media account to reach additional members of the community.

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

Measure B: Equity Population Benefits and Impacts

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

Response:

The proposed project will provide several benefits to the community. The project will construct a trail along the north side of CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange, construct roundabouts at both ramps at the CSAH 46/TH 52 interchange, and construct a CSAH 46 grade separated crossing that will be incorporated into the County's Vermillion Highlands Greenway system that will eventually connect Lebanon Hills Regional Park with Whitetail Wood Regional Park.

CSAH 46 will be reconstructed as a divided 4-lane roadway. The median will provide access management and reduce the potential vehicle and pedestrian and/or bicyclist conflicts which will lead to improved safety and mobility for all users.

CSAH 46 will be expanded to a divided 4-lane roadway between TH 3 and the CSAH 46/TH 52 interchange. The expansion of CSAH 46 will help maintain the mobility and safety of freight along the corridor. By maintaining mobility and safety of the freight vehicles, this will provide Regional costs savings to Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults that may not be located along the project corridor.

A center median will be added help to alleviate the total distance a non-motorized user must travel in traffic lanes by providing a median refuge and providing a safer crossing. Depending on the destination of freight vehicles, the CSAH 46 corridor may see additional vehicles utilize the corridor to deliver their goods. Although more freight vehicles may use CSAH 46, it is likely that the vehicles are using the most efficient route and saving all users costs associated with vehicle delay.

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

Measure C: Affordable Housing Access

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

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

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

Response:

The Socio-Economic Map for the project corridor indicates that 96 publicly subsidized rental housing units are within a ½ mile of the corridor. The existing corridor provides east-west regional access between I-35 in Lakeville east to TH 61 in Hastings. The existing corridor lacks pedestrian/bicyclist facilities along CSAH 46 and the current design presents difficultly to access CSAH 46.

The proposed project will improve upon existing infrastructure. The proposed project will improve access for pedestrians and bicyclists, provide a grade separated crossing of CSAH 46 and improve mobility for freight along the corridor. The proposed trail system will provide a safer route for pedestrian and bicyclists to visit destinations along the CSAH 46 corridor and eventually connect into the County's Vermillion Highlands greenway. The proposed grade separated crossing of CSAH 46 will provide non-motorized users an alternative to crossing CSAH 46 at grade. The project will expand CSAH 46 to a divided 4-lane roadway that will be able to maintain mobility for freight vehicles. By maintaining mobility for the freight vehicles, it allows them to deliver goods in a cost-efficient manner to the community near the project corridor and the Region.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	Yes
Upload the Socio-Economic Conditions map used for this measure.	1649936392891_CP 99-013 Socio-Economic Conditions Map.pdf

Measure A: Infrastructure Age

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
2001.0	5.8	11605.8	2001.0
	6	**11606**	**2001**

Average Construction Year

Weighted Year	2001.0

Total Segment Length (Miles)

Total Segment Length	5.8

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
48.4	26.6	21.8	3824	3824	83363.2	83363.2	Not Applicable	1649937963883_CP99-013 Synchro Information.pdf
						83363		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	83363.2
Total Peak Hour Delay Reduced	83363.2

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):
170.1	194.4	-24.3
170	**194**	**-24**

Total

Total Emissions Reduced:	-24.3
Upload Synchro Report	1649938065404_CP 99-013 Synchro Information.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:	Crash modification factors (CMFs) were selected from the FHWA's CMF Clearinghouse to estimate crash reduction related to the project. CMF 7570 and 7571 - Convert 2 lane roadway to 4 lane divided roadway and CMF 228 and 229 - Convert intersection with minor-road stop control to modern roundabout.

(Limit 700 Characters; approximately 100 words)

Rationale for Crash Modification Selected:	The first countermeasure proposed on the CSAH 46 corridor is the conversion of a two-lane roadway to a four-lane divided roadway. CMFs 7570 and 7571 were developed from a study based on a rural two-lane roadway with an AADT of 9539. This context is a close match to CSAH 46, which has the same typical section and an AADT of 10,100. CMF 7570 applies to injury crashes, and CMF 7571 applies to property damage crashes. Both reduce all crash types. They have a high reliability rating of 125 and four stars. These CMFs were applied to all crashes along the corridor, excluding the TH 52 ramp intersections. The second proposed countermeasure is construction of two-lane roundabouts at the CSAH 46 & TH 52 ramp intersections, which are currently minor-road stop-controlled. CMFs 228 and 229 are considered very reliable, as they are listed in the Highway Safety Manual. They are based on a study that applies to all contexts, all crash types, and 1 or 2-lane roundabouts. CMF 228 applies to serious or minor injury crashes, while CMF 229 applies to all crash severities. These CMFs were applied to crashes at the two ramp intersections. *(Limit 1400 Characters; approximately 200 words)*
Project Benefit ($) from B/C Ratio:	$26,267,891.00
Total Fatal (K) Crashes:	1
Total Serious Injury (A) Crashes:	2
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	73
Total Fatal (K) Crashes Reduced by Project:	1
Total Serious Injury (A) Crashes Reduced by Project:	1
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	31
Worksheet Attachment	1649939426190_CP 99-013 BC Worksheet and Crash Info.pdf

Please upload attachment in PDF form.

Roadway projects that include railroad grade-separation elements:

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

Measure A: Pedestrian Safety

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

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

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

Response:

The proposed project will reconstruct CSAH 46 as a 4-lane divided roadway with roundabouts at both ramps of the CSAH 46/TH 52 interchange. The project will construct a trail along the north side from TH 3 to the CSAH 46/TH 52 interchange and construct a grade separated crossing of CSAH 46 for the future Vermillion Highlands greenway east of Akron Avenue.

The proposed trail along the north side of CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange will provide an option for non-motorized users to access parts of the CSAH 46 corridor and the City of Coates. Pedestrians and bicyclist can currently use the existing shoulders along CSAH 46. Since CSAH 46 is utilized as a freight corridor, walking and biking near truck traffic may not be desirable for all levels of users.

The proposed trail on the north side of CSAH 46 and the proposed grade separated crossing of CSAH 46 will eventually provide access to the County's Vermillion Highlands greenway. The Vermillion Highlands greenway will provide a connection between Whitetail Woods Regional Park and Lebanon Hills Regional Park as well as access to adjacent neighborhoods.

The proposed project (divided 4-lane) will encourage people wanting to cross CSAH 46 to consider crossing at controlled intersections. During final design, the project team will review the corridor for inclusion of high visibility crosswalk markings at the full access controlled intersections as appropriate.

(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: 11

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

The proposed project will be constructing medians that could potentially be utilized as median crossing islands depending upon results of pedestrian crossing assessments during final design. The County anticipates adopting the recommendations from its pedestrian crossing study later this spring. Recommendations from the study will be incorporated in the final design of the project for potential pedestrian crossing enhancements.

Response:

While it may be a longer distance for users to travel, they can use the proposed trail on the north side of CSAH 46 between TH 3 and the CSAH 46/TH 52 interchange to cross at the existing traffic signal at TH 3 and CSAH 46, the proposed grade separated crossing for the Vermillion Highlands greenway, if needed the roundabouts at the CSAH 46/TH 52 interchange.

(Limit 1,400 characters; approximately 200 words)

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

Response:

The project will be constructing a grade separated crossing of CSAH 46 that will eventually become part of the County's Vermillion Highlands greenway. Depending on the non-motorized user's comfort level, they may cross CSAH 46 at grade or be inclined to cross at the proposed CSAH 46 grade separated crossing. Since this grade separated crossing would provide a crossing of CSAH 46 where one does not exist today, it should improve crossing times, safety, and eliminate pedestrian crossing exposure.

(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:

As the project transitions into final design, the corridor will be reviewed for possible mid-block crossings. For the number of lanes, speed, volume of traffic, and percentage of truck traffic mid-block crossings may not be feasible/appropriate. The existing traffic signal at TH 3 and CSAH 46, the proposed grade separated crossing of CSAH 46, and the trail along the north side of CSAH 46; would be in place to facilitate crossing needs and safety for non-motorized users.

(Limit 1,400 characters; approximately 200 words)

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

Response:

The proposed roadway design includes expanding the roadway to divided 4-lane with a center median. The expansion of the roadway is anticipated to provide more gaps in traffic for vehicles on the cross streets. The expansion will also provide faster moving vehicles the ability to navigate around slower moving trucks exiting or entering CSAH 46 from the gravel mining and concrete fabrication businesses. Turn lanes will be provided at public cross streets and at driveway facilities that serve the gravel and concrete industries. The turn lanes will facilitate the separation of decelerating vehicles from thru traffic, allowing thru traffic to maintain speed, mobility and improve corridor safety.

The proposed roundabouts at both CSAH 46/TH 52 interchange ramps will slow traffic speeds through the interchange and better accommodate left turn movements to/from CSAH 46. The interchange ramps have experienced right angle crashes and the roundabouts would significantly reduce potential for this crash type.

(Limit 2,800 characters; approximately 400 words)

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

Response:

The existing speed limit along CSAH 46 is 55 mph and the proposed design speed for the divided 4-lane roadway is 55 mph.

(Limit 1,400 characters; approximately 200 words)

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

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

Existing road configuration is a One-way, 3+ through lanes or	
Existing road configuration is a Two-way, 4+ through lanes	
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	15100

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

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

Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes. If service was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 service for this item.)

Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays. If service frequency was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 frequency for this item.)

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

If checked, please describe:

No shopping, dining, or entertainment destinations exist within 500? of the project corridor. The project does provide an improved transportation system (divided 4-lane roadway, roundabouts at CSAH 46/TH 52 interchange and trail along the north side of CSAH 46) between TH 3 and the City of Coates.

(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 corridor is goes through the University of Minnesota Outreach, Research, and Education (Umore) Park property. The University is currently using Umore Park area for mining, agricultural, and continued research. Umore Park borders both the north and south side of CSAH 46 from Biscayne Avenue to east of Blaine Avenue (about 3 miles).

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

The existing corridor has a minimal amount of existing trail (along the north side of CSAH 46 from TH 3 to Biscayne Avenue). The proposed project will construct trail along the north side of CSAH 46 from TH 3 east to the CSAH 46/TH 52 interchange. The project will provide non-motorized users with a safer alternative (currently walk or bike in the shoulder of CSAH 46) that connects them to destinations in the surrounding area (Coates, Rosemount, and Empire Township) including businesses in Coates, Whitetail Woods Regional Park in Empire Township, and businesses and Umore Park in Rosemount.

While the project is not located along an RBTN corridor, it will eventually provide a connection via the County's future Vermillion Highlands Greenway to the RBTN Tier 2 alignment located along CSAH 42.

Response:

The existing CSAH 46/TH 52 interchange can be viewed as bicycle barrier. The proposed roundabouts at both ramps will provide bicyclists with an off-road option to continue along CSAH 46 versus traveling through the ramp intersections in the paved shoulder. Depending on a bicyclist's experience level, they may not be comfortable crossing the existing bridge and may look to other means of transportation. The roundabouts at both interchange ramps would allow bicyclists to travel along this portion of CSAH 46, on a facility separated from traffic.

The County's 2018 ADA plan identified the CSAH 46 corridor from the first frontage road access along the north side of CSAH 46 east of TH 3 to Asher Avenue and from 0.4 miles west of Clayton Avenue to CR 48 (160th Street) as priority locations for sidewalks. The project will be providing a trail along the north side of CSAH 46 from TH 3 to the

CSAH 46/TH 52 interchange. The project will upgrade all existing non-compliant pedestrian curb ramps.

(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.

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.

Yes

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:

In the Fall 2020, Dakota County and the cities of Coates and Rosemount and Empire Township partnered on the preliminary design of the CSAH 46 expansion to 4-lanes from TH 3 to the CSAH 46/TH 52 interchange and pavement preservation work on CSAH 46 from the CSAH 46/TH 52 interchange to CR 48 in Coates. As part of the preliminary design kickoff, the project team mailed out an introduction letter. As part of the letter, residents were encouraged to visit the project website to provide input on issues/concerns they were seeing along the corridor. This information was incorporated into the corridor operations review and roadway alignment. The County utilized its social media account to reach additional members of the community.

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

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

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

100%

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

100%

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

75%

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

Yes

50%

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

25%

Layout has not been started

0%

Attach Layout 1649957534163_Project Layout.pdf

Please upload attachment in PDF form.

Additional Attachments

Please upload attachment in PDF form.

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

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

100%

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

100%

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

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

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

0%

Project is located on an identified historic bridge

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

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

100%

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

50%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified Yes

25%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified

0%

5.Railroad Involvement (15 Percent of Points)

No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable)	Yes

100%

Signature Page

Please upload attachment in PDF form.

Railroad Right-of-Way Agreement required; negotiations have begun

50%

Railroad Right-of-Way Agreement required; negotiations have not begun.

0%

Measure A: Cost Effectiveness

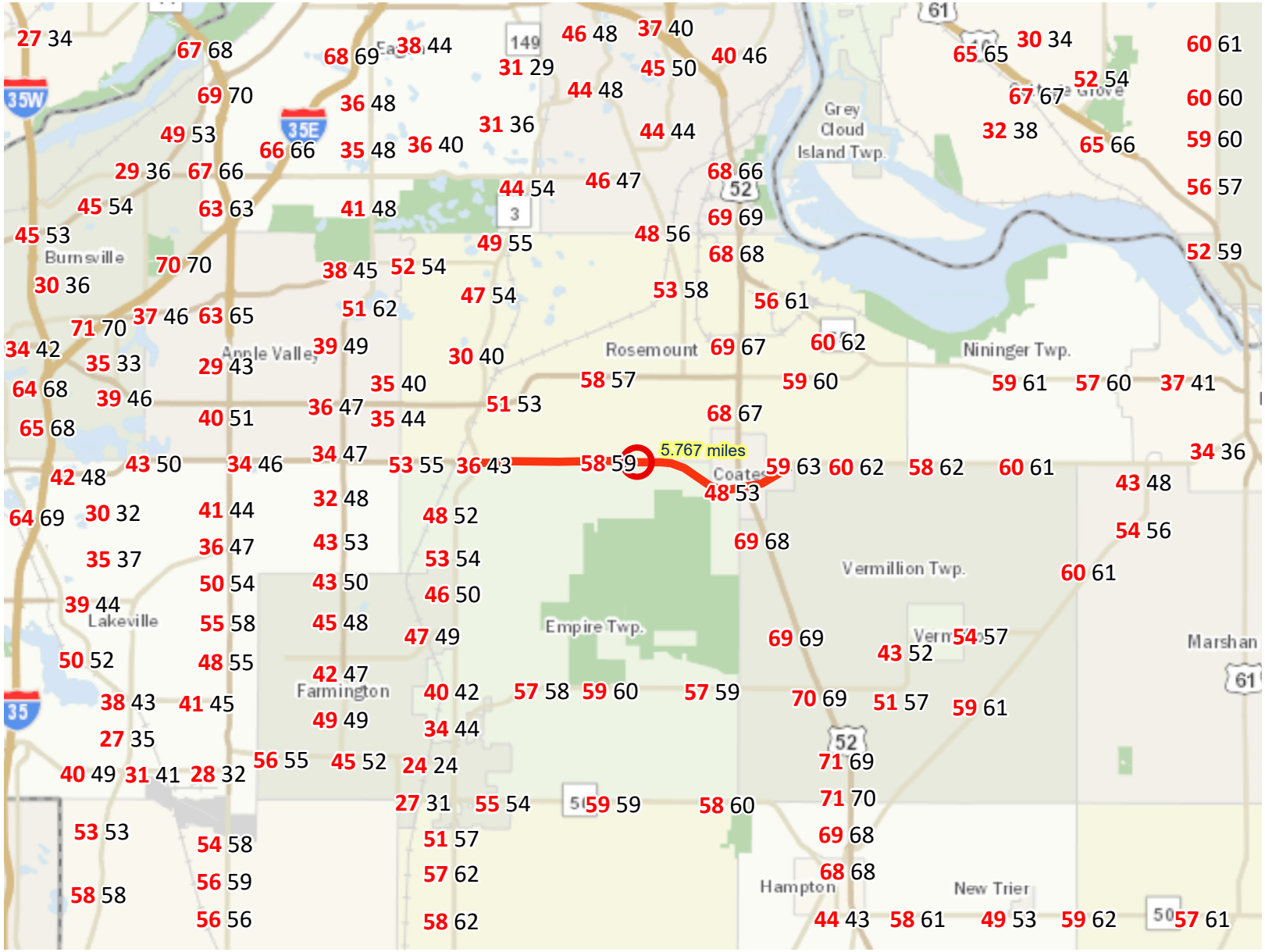
Total Project Cost (entered in Project Cost Form):	$40,000,000.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$40,000,000.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
Attachment A - 1 page Project Summary.pdf	Attachment A - Project Summary	201 KB
Attachment B - Photos.pdf	Attachment B - Existing Conditions/Photographs	991 KB
Attachment C - Project Layout.pdf	Attachment C - Project Layout	576 KB
Attachment D - MC Maps.pdf	Attachment D - Met Council Maps (4 total)	9.2 MB
Attachment E - Letters of Support.pdf	Attachment E - Letters of Support (2 total)	1.5 MB
Attachment F - MC Goals.pdf	Attachment F - Met Council Thrive MSP Plan Goal Sheets	150 KB
Attachment G - DC Goals.pdf	Attachment G - Dakota County 2040 Transportation Plan Goals Sheets	935 KB
Attachment H - DC CIP Sheet.pdf	Attachment H - Dakota County CIP sheet	1.4 MB
Attachment I - Vermillion Highlands Greenway Excerpts.pdf	Attachment I - Vermillion Highlands Greenway Excerpts	838 KB
Attachment J - DC ADA Plan and Inventory.pdf	Attachment J - County's ADA Transition Plan Excerpts and Inventory Sheets	1.3 MB
Attachment K - RBTN Screenshot.pdf	Attachment K - RBTN Screenshots of Project Area	331 KB
Attachment Listing.pdf	Attachment Listing	93 KB

Level of Congestion

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181



Project Points

Project

0 1.5 3 6 9 12 Miles

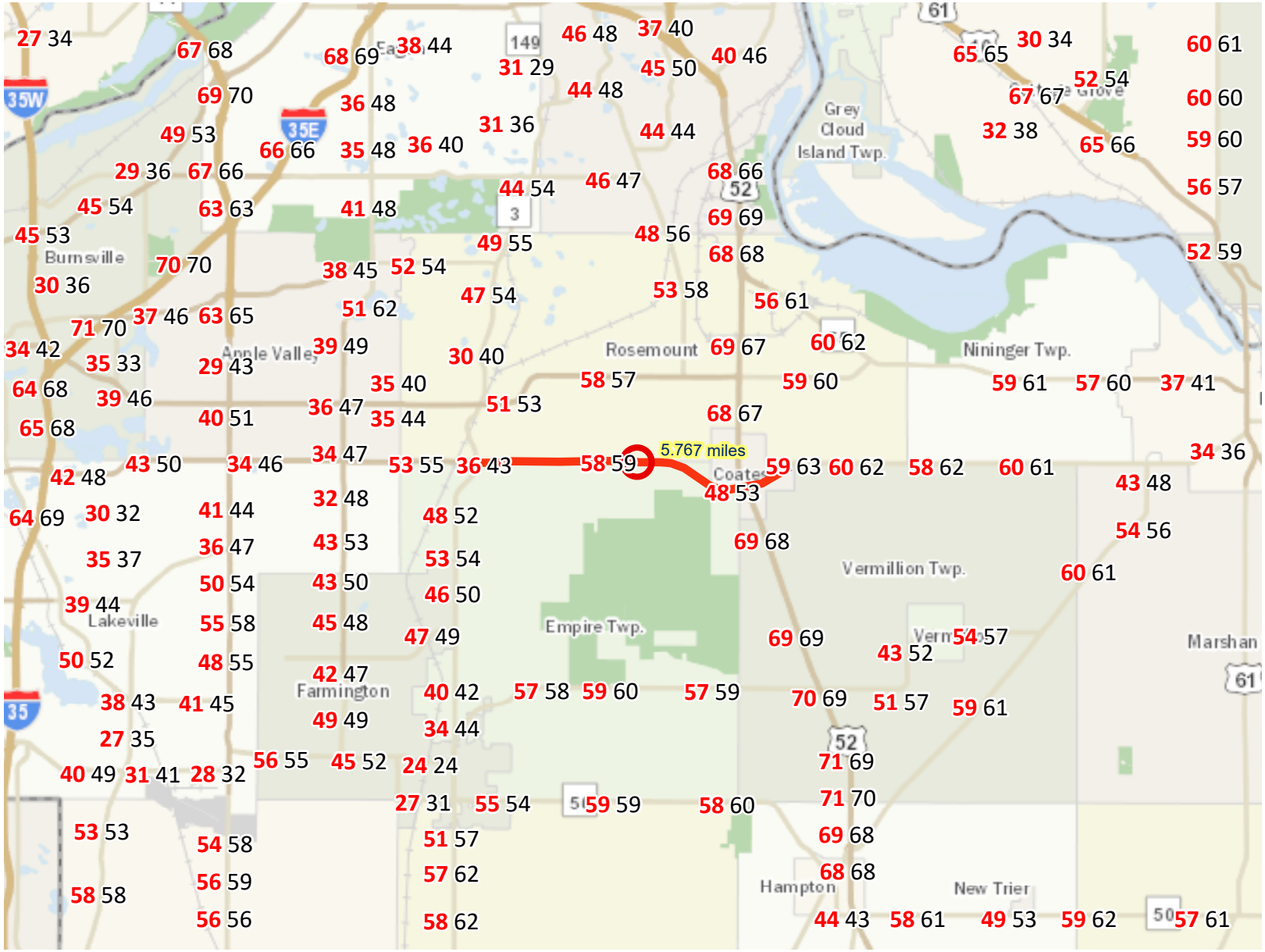
Created: 4/4/2022
LandscapeRSA1

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

METROPOLITAN COUNCIL

Level of Congestion

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181



Project Points

Project

0 1.5 3 6 9 12 Miles

Created: 4/4/2022
LandscapeRSA1

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

METROPOLITAN COUNCIL

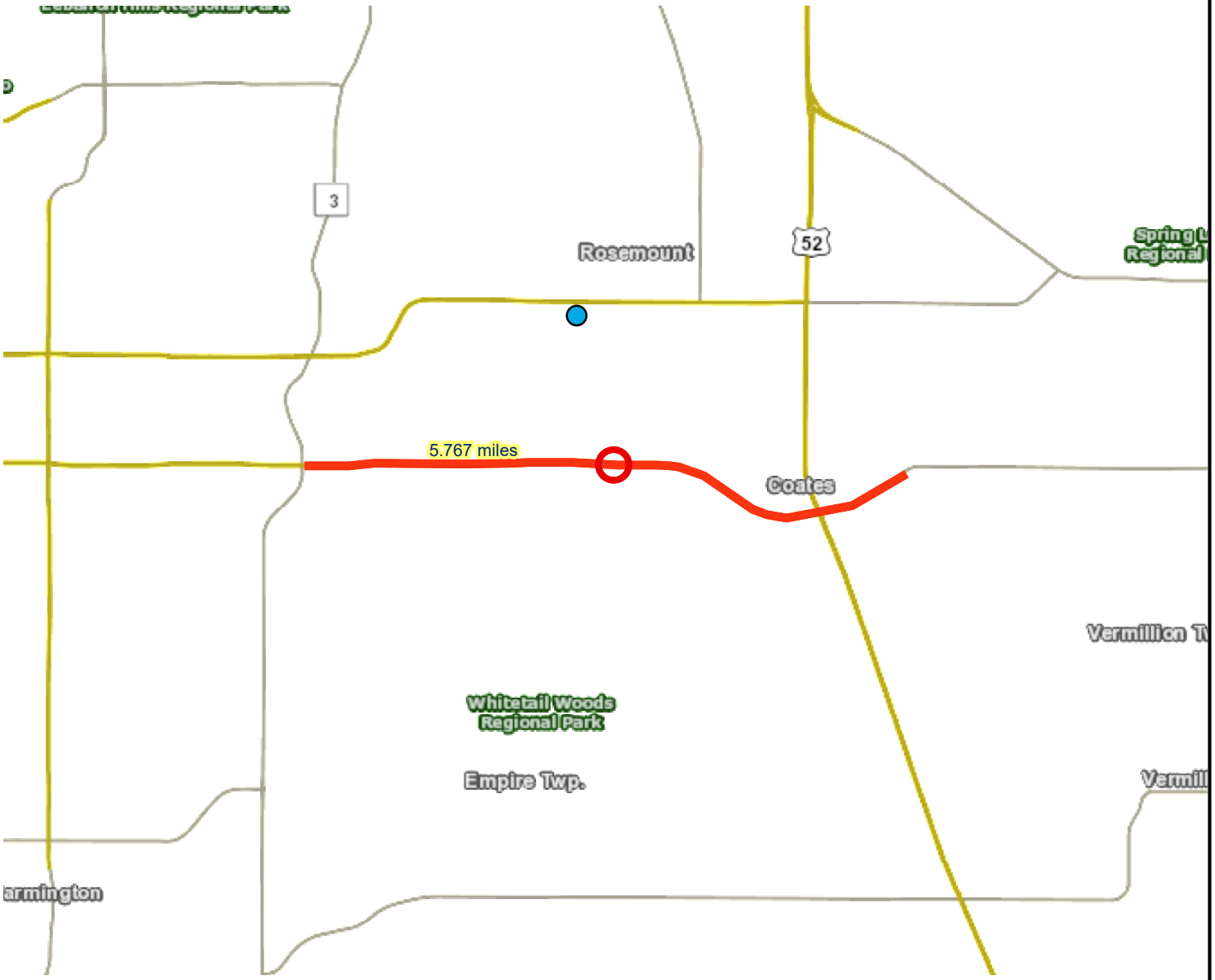
Regional Economy

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Empire Twp.
Population: 67
Employment: 40
Mfg and Dist Employment: 37
Rosemount
Population: 52
Employment: 1259
Mfg and Dist Employment: 88



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

0 0.75 1.5 3 4.5 6 Miles

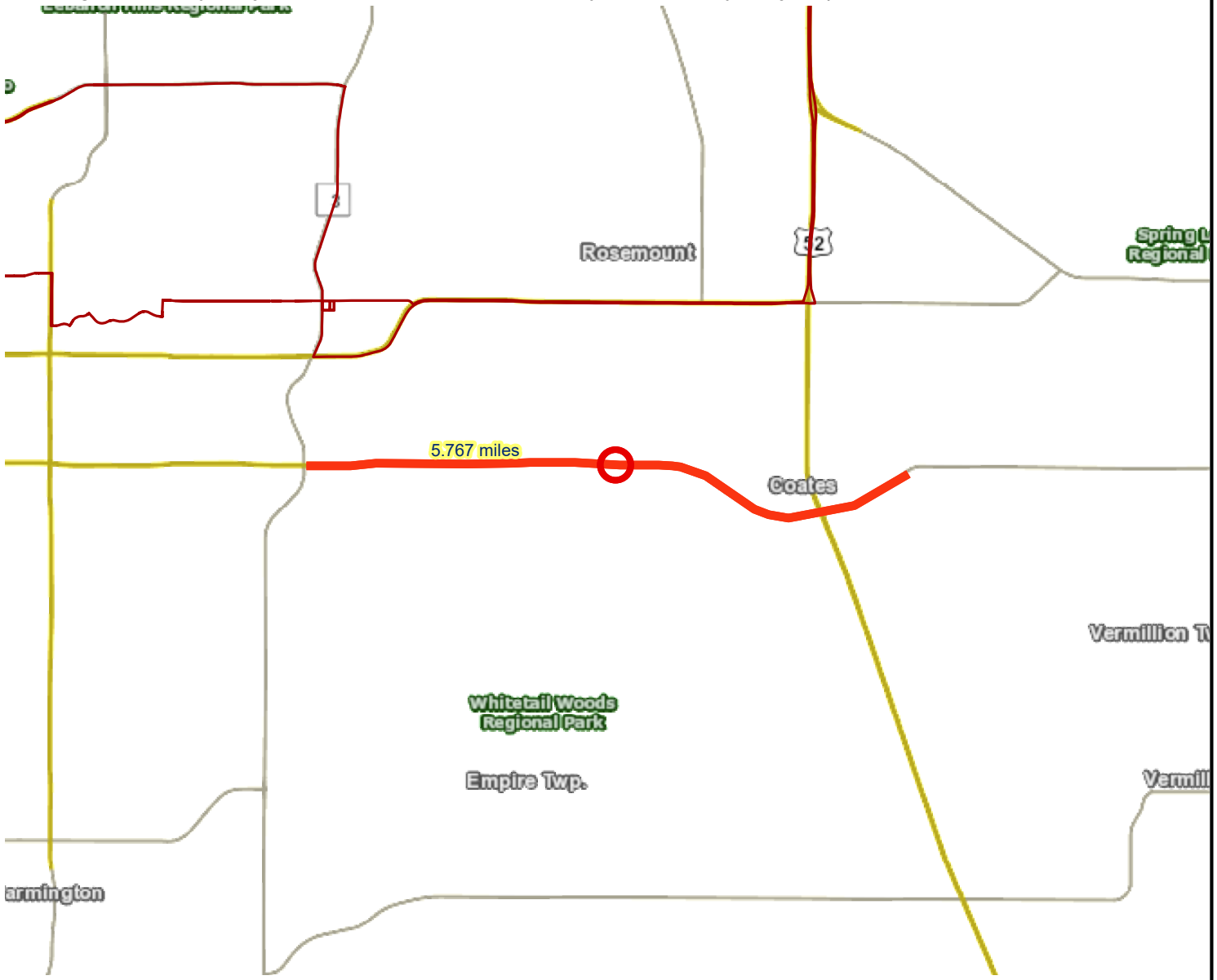
Created: 4/4/2022
LandscapeRSA5

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

METROPOLITAN COUNCIL

Transit Connections

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181



Results

Transit with a Direct Connection to project:
-- NONE --

**indicates Planned Alignments*

Transit Market areas: 5

Project Points — Transit Routes

Project

Project Area

0 0.75 1.5 3 4.5 6 Miles

Created: 4/4/2022
LandscapeRSA3

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

METROPOLITAN COUNCIL

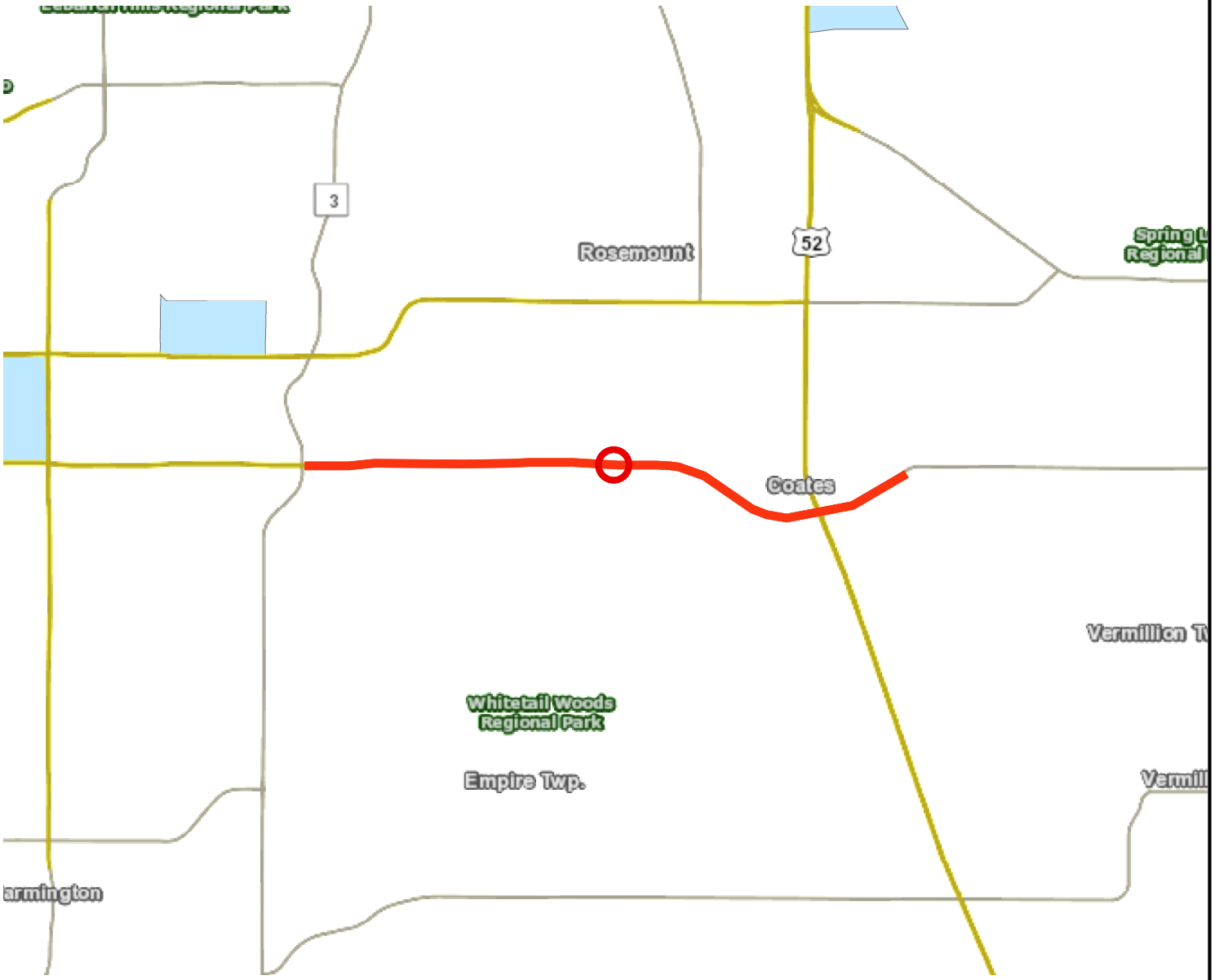
Socio-Economic Conditions

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 96

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



Points
Lines
Area of Concentrated Poverty
Regional Environmental Justice Area

0 0.75 1.5 3 4.5 6 Miles

Created: 4/4/2022
LandscapeRSA2

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

METROPOLITAN COUNCIL

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.9	0.0	0.0	0.0	3.2	0.8	3.1	2.7	1.0	2.6
Total Del/Veh (s)	72.6	85.7	22.1	51.9	32.1	6.6	42.7	16.6	3.3	27.9	42.3	15.5

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	41.3

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.0
Total Del/Veh (s)	2.2	0.7	0.0	7.5	5.4	12.6	9.8	13.1	11.5	8.2	3.8

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	3.5	1.5	2.4

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	4.2	0.0
Total Del/Veh (s)	4.4	2.5	3.8	9.2	4.8	3.4

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.0	2.1	1.6

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0
Total Del/Veh (s)	1.8	3.2	4.3	2.6

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	3.4	2.7	4.5	3.7	9.2	10.5	4.2	9.9	3.9	3.7

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.1	2.1	0.1
Total Del/Veh (s)	6.6	3.8	3.4	1.4	11.3	3.4	3.8

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.8	3.6	0.9
Total Del/Veh (s)	3.7	2.5	1.1	3.9	3.0	21.8	0.1	4.6	17.3	20.3	11.5	6.7

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.3	0.5	0.0	0.0	0.1	0.1
Total Del/Veh (s)	2.4	1.6	0.6	2.2	2.5	1.3	10.4	8.6	4.1	4.1

18: Performance by movement

Movement	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	0.1	2.3	0.4

19: TH 52 NB Performance by movement

Movement	NWR	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	13.0	13.0

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.6	0.4

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.8	1.8

34: TH 52 NB Performance by movement

Movement	NBR	All
Denied Del/Veh (s)	3.8	3.8
Total Del/Veh (s)	1.5	1.5

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Denied Del/Veh (s)	3.9	3.9
Total Del/Veh (s)	0.3	0.3

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0
Total Del/Veh (s)	0.3	2.6	0.5	5.4	1.9

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.1	0.1
Total Del/Veh (s)	3.6	0.9	0.2	5.9	2.4	1.1	10.4	10.9	3.9	9.1	8.4	5.6

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.9

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	0.6	0.8

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.7	3.4	2.2

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	1.5	0.2	5.3	1.3

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.9	1.2	1.9

56: Clayton Ave E Performance by movement

Movement	NBT	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.4	0.4

Total Network Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	48.4

Intersection: 1: TH 3 & CSAH 46

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	325	594	502	209	223	211	201	69	184	129	40	274
Average Queue (ft)	184	312	196	91	105	117	122	25	84	66	14	45
95th Queue (ft)	367	597	512	228	190	189	191	51	159	118	28	176
Link Distance (ft)		3430	3430			481	481			1788		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	300			300	300		300	300
Storage Blk Time (%)	1	24	2	0		0						
Queuing Penalty (veh)	2	49	3	0		0						

Intersection: 1: TH 3 & CSAH 46

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	631	325
Average Queue (ft)	270	105
95th Queue (ft)	492	293
Link Distance (ft)	2022	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		300
Storage Blk Time (%)	8	0
Queuing Penalty (veh)	19	0

Intersection: 2: Biscayne Ave & CSAH 46

Movement	EB	WB	NB	SB
Directions Served	L	L	LT	LTR
Maximum Queue (ft)	23	4	24	78
Average Queue (ft)	2	0	8	31
95th Queue (ft)	12	3	26	58
Link Distance (ft)			1134	1371
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275	300		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Station Trail & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Akron Ave & CSAH 46

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	34	33	19
Average Queue (ft)	6	9	3
95th Queue (ft)	24	29	15
Link Distance (ft)		1009	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		375
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Asher Ave E & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Barbara Ave E & CSAH 46

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	37
Average Queue (ft)	13
95th Queue (ft)	32
Link Distance (ft)	1229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Blaine Ave & CSAH 46

Movement	WB	NB	SB
Directions Served	LT	LTR	LTR
Maximum Queue (ft)	22	44	29
Average Queue (ft)	1	17	8
95th Queue (ft)	11	37	25
Link Distance (ft)	5215	1109	1430
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Clayton Ave E & CSAH 46

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	32	26	43
Average Queue (ft)	6	6	12
95th Queue (ft)	25	24	33
Link Distance (ft)		1476	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		500
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: TH 52 SB Ramp/Clayton Ave & CSAH 46

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	R	L	T	R
Maximum Queue (ft)	32	15	38	100	45	106	96	172
Average Queue (ft)	7	1	9	43	12	42	22	57
95th Queue (ft)	26	10	29	85	33	80	56	119
Link Distance (ft)				320	320			
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	275	275	500			300		300
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: CSAH 46 & Clayton Ave E

Movement	EB	WB	WB	NB	NB	SB
Directions Served	L	L	R	L	T	TR
Maximum Queue (ft)	43	27	2	132	58	26
Average Queue (ft)	13	5	0	54	25	11
95th Queue (ft)	36	21	1	95	52	31
Link Distance (ft)					414	827
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	375	350	350	400		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: TH 52 SB On Ramp & TH 52 NB

Movement	SE
Directions Served	R
Maximum Queue (ft)	78
Average Queue (ft)	17
95th Queue (ft)	57
Link Distance (ft)	1367
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 34: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 38: CSAH 46 & Fr Rd W

Movement	B61	SB
Directions Served	T	R
Maximum Queue (ft)	106	71
Average Queue (ft)	4	40
95th Queue (ft)	77	64
Link Distance (ft)	481	190
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 39: CSAH 46 & Fr Rd M

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	25	21	40	35
Average Queue (ft)	3	2	12	13
95th Queue (ft)	17	12	31	32
Link Distance (ft)			88	212
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	300	350		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Alverno Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 41: Albata Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 44: CSAH 46 & Fr Rd E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	19
95th Queue (ft)	45
Link Distance (ft)	183
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 48: CSAH 46 & Angus Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 55: TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 56: Clayton Ave E

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 74

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	42	129	72	6	20	4	19	33	12	4	68	25
CO Emissions (g)	1718	4704	2827	259	791	156	879	1430	638	190	2201	974
NOx Emissions (g)	184	470	271	17	58	10	68	121	46	15	228	83

1: TH 3 & CSAH 46 Performance by movement

Movement	All
HC Emissions (g)	433
CO Emissions (g)	16767
NOx Emissions (g)	1571

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
HC Emissions (g)	0	22	0	0	151	0	0	1	1	0	175
CO Emissions (g)	3	670	2	5	3753	3	3	15	27	11	4492
NOx Emissions (g)	1	109	0	1	774	0	0	2	4	1	892

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	111	43	154
CO Emissions (g)	3105	1375	4480
NOx Emissions (g)	605	214	819

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
HC Emissions (g)	4	67	113	0	0	184
CO Emissions (g)	122	2278	2770	8	3	5182
NOx Emissions (g)	18	355	576	1	0	951

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	26	80	107
CO Emissions (g)	774	2304	3078
NOx Emissions (g)	143	385	529

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
HC Emissions (g)	49	131	1	181
CO Emissions (g)	1338	3486	21	4845
NOx Emissions (g)	266	627	3	896

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
HC Emissions (g)	79	1	1	260	0	0	1	0	0	342
CO Emissions (g)	2091	31	33	7024	7	3	12	3	5	9208
NOx Emissions (g)	435	9	7	1219	1	0	2	0	1	1674

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
HC Emissions (g)	143	1	2	109	0	2	259
CO Emissions (g)	4158	59	168	6198	8	34	10626
NOx Emissions (g)	802	15	8	361	1	5	1192

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
HC Emissions (g)	0	24	8	5	60	4	0	2	2	2	8	116
CO Emissions (g)	19	1181	311	316	3411	165	5	55	97	55	253	5867
NOx Emissions (g)	2	89	29	16	207	15	0	6	7	6	21	399

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
HC Emissions (g)	12	47	1	13	71	23	2	1	0	170
CO Emissions (g)	597	2779	93	376	2250	571	62	12	7	6745
NOx Emissions (g)	37	168	4	54	311	78	7	2	1	662

18: Performance by movement

Movement	NBT	SBT	SBR	All
HC Emissions (g)	7	0	1	8
CO Emissions (g)	124	3	48	174
NOx Emissions (g)	20	0	5	25

19: TH 52 NB Performance by movement

Movement	NWR	All
HC Emissions (g)	3	3
CO Emissions (g)	107	107
NOx Emissions (g)	10	10

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
HC Emissions (g)	8	18	25
CO Emissions (g)	313	774	1087
NOx Emissions (g)	24	62	86

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
HC Emissions (g)	15	15
CO Emissions (g)	226	226
NOx Emissions (g)	40	40

34: TH 52 NB Performance by movement

Movement	NBR	All
HC Emissions (g)	33	33
CO Emissions (g)	1979	1979
NOx Emissions (g)	104	104

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
HC Emissions (g)	11	11
CO Emissions (g)	711	711
NOx Emissions (g)	27	27

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	13	33	0	1	47
CO Emissions (g)	761	1228	12	24	2025
NOx Emissions (g)	44	129	1	3	177

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	0	42	1	0	64	0	0	0	0	0	0	0
CO Emissions (g)	31	2280	51	11	2196	13	1	0	0	0	0	3
NOx Emissions (g)	1	161	3	1	286	2	0	0	0	0	0	0

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
HC Emissions (g)	107
CO Emissions (g)	4587
NOx Emissions (g)	454

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	29	19	48
CO Emissions (g)	818	621	1439
NOx Emissions (g)	157	90	247

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	14	95	109
CO Emissions (g)	590	2351	2941
NOx Emissions (g)	68	490	558

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	50	34	0	0	85
CO Emissions (g)	1514	1155	8	3	2679
NOx Emissions (g)	239	156	1	0	396

48: CSAH 46 & Angus Ave Performance by movement

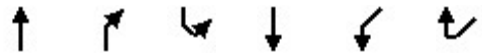
Movement	EBT	WBT	All
HC Emissions (g)	77	39	116
CO Emissions (g)	2224	1010	3234
NOx Emissions (g)	431	198	629

56: Clayton Ave E Performance by movement

Movement	NBT	All
HC Emissions (g)	1	1
CO Emissions (g)	11	11
NOx Emissions (g)	2	2

Total Network Performance

HC Emissions (g)	3877
CO Emissions (g)	149495
NOx Emissions (g)	16692

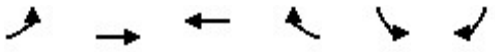


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	226	0	0	0	0
Future Volume (vph)	0	226	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3539	1583	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	0	0	0
Link Speed (mph)	65			65	30	
Link Distance (ft)	1472			1038	267	
Travel Time (s)	15.4			10.9	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	246	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

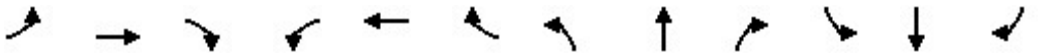
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	0	110	0	0
Future Volume (vph)	0	0	0	110	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			300	0	0
Storage Lanes	0			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	1583	0	0
Link Speed (mph)		65	65		30	
Link Distance (ft)		1468	1649		652	
Travel Time (s)		15.4	17.3		14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	120	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	534	650	22	0	113
Future Volume (vph)	0	534	650	22	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996			0.865
Flt Protected						
Satd. Flow (prot)	0	1676	1670	0	0	1450
Flt Permitted						
Satd. Flow (perm)	0	1676	1670	0	0	1450
Link Speed (mph)		55	55		30	
Link Distance (ft)		114	742		237	
Travel Time (s)		1.4	9.2		5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	707	24	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	580	731	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.9%		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)	10	507	17	7	625	6	14	3	6	1	1	21
Future Volume (vph)	10	507	17	7	625	6	14	3	6	1	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		220	350		350	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.962			0.876	
Flt Protected	0.950			0.950				0.971			0.998	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1740	0	0	1629	0
Flt Permitted	0.950			0.950				0.971			0.998	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1740	0	0	1629	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		742			1291			136			261	
Travel Time (s)		9.2			16.0			3.1			5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	551	18	8	679	7	15	3	7	1	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	551	18	8	679	7	0	25	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

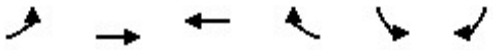
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	441	0	0	560	0	0
Future Volume (vph)	441	0	0	560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1033			402	1733	
Travel Time (s)	12.8			5.0	39.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	0	0	609	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	479	0	0	609	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			

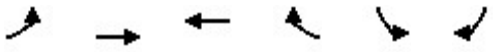
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	0	0	611	0	0
Future Volume (vph)	488	0	0	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	402			2307	1708	
Travel Time (s)	5.0			28.6	38.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	530	0	0	664	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	0	0	664	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	482	610	10	0	28
Future Volume (vph)	0	482	610	10	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.865	
Flt Protected						
Satd. Flow (prot)	0	1863	1859	0	1611	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1859	0	1611	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		1291	679		219	
Travel Time (s)		16.0	8.4		5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	524	663	11	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	524	674	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	486	595	0	0	0
Future Volume (vph)	0	486	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			300	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	1863	1863	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		2762	941		716	
Travel Time (s)		34.2	11.7		16.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	647	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	528	647	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

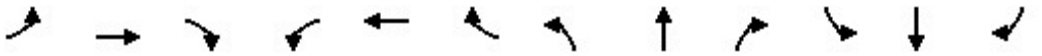
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			300
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	0	0	3539	1863
Flt Permitted						
Satd. Flow (perm)	0	1863	0	0	3539	1863
Link Speed (mph)	30			65	65	
Link Distance (ft)	108			1375	1488	
Travel Time (s)	2.5			14.4	15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			108	2491	
Travel Time (s)	2.3			2.5	56.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Free	Yield	

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Future Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.233			0.363			0.155			0.591		
Satd. Flow (perm)	434	3539	1583	676	3539	1583	289	1863	1583	1101	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			143			143			222
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3477			555			1848			2080	
Travel Time (s)		43.1			6.9			22.9			25.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

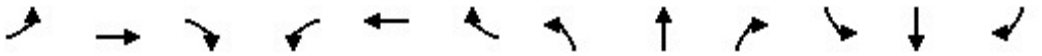
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	12.0	23.1	23.1	11.4	22.5	22.5	10.0	35.9	35.9	9.6	35.5	35.5
Total Split (%)	15.0%	28.9%	28.9%	14.3%	28.1%	28.1%	12.5%	44.9%	44.9%	12.0%	44.4%	44.4%
Maximum Green (s)	7.5	18.6	18.6	6.9	18.0	18.0	5.5	31.4	31.4	5.1	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.7	17.2	17.2	23.5	16.6	16.6	38.6	35.4	35.4	36.1	31.0	31.0
Actuated g/C Ratio	0.31	0.22	0.22	0.30	0.21	0.21	0.49	0.45	0.45	0.46	0.39	0.39
v/c Ratio	0.85	0.58	0.44	0.64	0.78	0.22	0.68	0.31	0.15	0.11	0.84	0.29
Control Delay	49.7	30.7	6.7	29.9	37.6	3.1	27.8	16.8	2.4	10.5	34.4	3.6
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	49.7	30.7	6.7	29.9	37.6	3.1	27.8	16.8	2.4	10.5	34.4	3.6
LOS	D	C	A	C	D	A	C	B	A	B	C	A
Approach Delay		29.3			32.1			17.1			25.2	
Approach LOS		C			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 78.7			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: TH 3 & CSAH 46

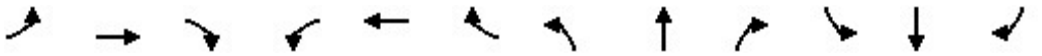
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Future Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	300		0	0		200	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.967	
Flt Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1770	1863	1583	1770	1863	0	0	1805	1863	0	1776	0
Flt Permitted	0.950			0.950				0.969			0.986	
Satd. Flow (perm)	1770	1863	1583	1770	1863	0	0	1805	1863	0	1776	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		679			3715			1182			1405	
Travel Time (s)		8.4			46.1			26.9			31.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	512	5	2	651	0	7	4	0	16	27	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	512	5	2	651	0	0	11	0	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	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	486	0	0	607	0	0	0	0	0	0	0
Future Volume (vph)	0	486	0	0	607	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	350		300	0		0	150		150
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	1863	1863	1863	1863	1863	0	1863	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	1863	1863	1863	1863	1863	0	1863	0	1863	0	1863
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3715			1033			1625			1295	
Travel Time (s)		46.1			12.8			36.9			29.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

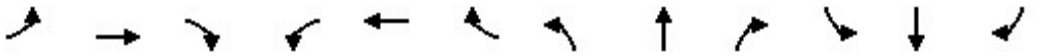


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Future Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300	300		300	0		0	0		375
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	1863	1863	1863	1863	0	1863	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	1863	1863	1863	1863	1863	0	1863	0	1770	0	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2307			2762			1820			1056	
Travel Time (s)		28.6			34.2			41.4			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

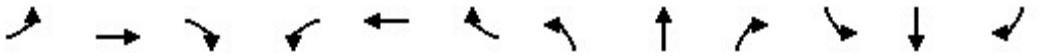
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	454	0	0	607	0	0
Future Volume (vph)	454	0	0	607	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	1863	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	1863	0	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	941			1727	1618	
Travel Time (s)	11.7			21.4	36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	493	0	0	660	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	0	0	660	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		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	494	0	0	575	0	0	0	0	0	0	29
Future Volume (vph)	0	494	0	0	575	0	0	0	0	0	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		275	0		275	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.865	
Flt Protected												
Satd. Flow (prot)	0	1863	1863	0	1863	1863	0	1863	0	0	1611	0
Flt Permitted												
Satd. Flow (perm)	0	1863	1863	0	1863	1863	0	1863	0	0	1611	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1727			2893			1327			1271	
Travel Time (s)		21.4			35.9			30.2			28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	537	0	0	625	0	0	0	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

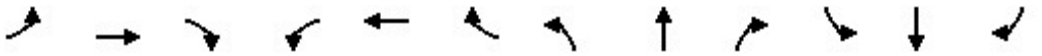


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Future Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		350	0		250	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.925			0.915	
Flt Protected					0.999			0.985			0.982	
Satd. Flow (prot)	0	1863	1583	0	1861	1863	0	1697	0	0	1674	0
Flt Permitted					0.999			0.985			0.982	
Satd. Flow (perm)	0	1863	1583	0	1861	1863	0	1697	0	0	1674	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2893			5278			1150			1474	
Travel Time (s)		35.9			65.4			26.1			33.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	499	16	7	597	0	14	7	26	7	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	499	16	0	604	0	0	47	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

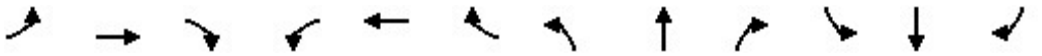
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	497	14	28	629	8	26
Future Volume (vph)	497	14	28	629	8	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		375	250		0	500
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	55			55	30	
Link Distance (ft)	5278			838	1522	
Travel Time (s)	65.4			10.4	34.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	540	15	30	684	9	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	540	15	30	684	9	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.1%	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)	23	284	216	42	346	0	84	0	26	93	37	227
Future Volume (vph)	23	284	216	42	346	0	84	0	26	93	37	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	500		250	0		0	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1863	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1863	1770	1863	1583	1770	1863	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		838			1157			384			1048	
Travel Time (s)		10.4			14.3			8.7			23.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.9%		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)	88	302	13	39	187	36	182	44	0	0	0	19
Future Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		300	350		350	400		400	225		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850					0.850	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1852	0	1770	1863	1583	1770	1863	1863	1863	1583	0
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1852	0	1770	1863	1583	1770	1863	1863	1863	1583	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1157			4026			479			872	
Travel Time (s)		14.3			49.9			10.9			19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	328	14	42	203	39	198	48	0	0	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	342	0	42	203	39	198	48	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	226	0	52
Future Volume (vph)	0	0	0	226	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	631			563	479	
Travel Time (s)	14.3			12.8	10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	246	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	246	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	52
Future Volume (vph)	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	0	0	1611
Link Speed (mph)	65			65	30	
Link Distance (ft)	1038			1563	631	
Travel Time (s)	10.9			16.4	14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	110	0	0	0	295
Future Volume (vph)	0	110	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	652		1586			384
Travel Time (s)	14.8		36.0			8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	120	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	120	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	295
Future Volume (vph)	0	0	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1611
Link Speed (mph)		65	65		30	
Link Distance (ft)		1016	1468		1586	
Travel Time (s)		10.7	15.4		36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	207	423	211	174	543	92	154	237	108	46	563	200

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Vehicles Entered	2958

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Vehicles Entered	7	465	4	2	603	5	6	15	26	14	1147

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	481	605	1086

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Vehicles Entered	25	457	597	13	6	1098

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	477	603	1080

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Vehicles Entered	480	575	26	1081

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Vehicles Entered	467	15	6	639	11	5	22	4	9	1178

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Vehicles Entered	484	14	28	635	10	22	1193

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Vehicles Entered	21	275	209	40	355	86	3	25	92	39	225	1370

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Vehicles Entered	78	300	14	36	190	35	188	47	17	905

18: Performance by movement

Movement	NBT	SBT	SBR	All
Vehicles Entered	234	1	48	283

19: TH 52 NB Performance by movement

Movement	NWR	All
Vehicles Entered	48	48

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Vehicles Entered	113	287	400

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Vehicles Entered	284	284

34: TH 52 NB Performance by movement

Movement	NBR	All
Vehicles Entered	235	235

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Vehicles Entered	113	113

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	573	647	22	125	1367

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	10	507	17	4	622	7	13	4	6	1	1	22

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Vehicles Entered	1214

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	479	608	1087

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	481	609	1090

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	511	606	11	26	1154

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	477	600	1077

56: Clayton Ave E Performance by movement

Movement	NBT	All
Vehicles Entered	22	22

Total Network Performance

Vehicles Entered	3767

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.8	20.5	8.3	27.0	20.9	4.3	30.9	12.6	3.1	17.3	20.9	7.4

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	18.2

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	1.7	0.4	0.0	4.6	2.9	13.9	16.7	9.7	13.5	5.3	2.2

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.9	0.8	1.3

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	3.7	0.0
Total Del/Veh (s)	2.8	1.4	2.2	8.6	2.5	2.0

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.8	0.7

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	2.9	0.1
Total Del/Veh (s)	0.7	1.7	3.4	1.3

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	2.9	2.5	3.1	1.7	7.5	11.0	3.3	10.5	3.5	2.4

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	2.0	0.1
Total Del/Veh (s)	3.2	1.8	3.1	0.6	10.3	3.5	1.9

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	3.6	0.6
Total Del/Veh (s)	3.4	7.4	3.0	2.8	6.2	3.5	0.1	2.1	5.1	5.7	3.3	4.9

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.2	7.8	1.3	2.3	5.4	1.2	3.9	1.4	2.4	4.7

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.1	1.0	2.4	0.4

19: TH 52 NB Performance by movement

Movement	NWR	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	13.2	13.0

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.3	0.3

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	2.2	2.2

34: TH 52 NB Performance by movement

Movement	NBR	All
Denied Del/Veh (s)	3.8	3.8
Total Del/Veh (s)	1.2	1.2

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Denied Del/Veh (s)	3.9	3.9
Total Del/Veh (s)	0.3	0.3

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0
Total Del/Veh (s)	0.1	1.5	0.2	5.5	1.2

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1		0.1	0.1
Total Del/Veh (s)	2.7	0.6	0.1	1.9	1.1	0.4	7.5	14.8	4.1		13.4	3.8

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.1

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.3	0.4

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.4	2.0	1.3

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.6	0.7	0.0	4.2	0.7

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.7	1.1

56: Clayton Ave E Performance by movement

Movement	NBT	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.1	0.1

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	26.6

Intersection: 1: TH 3 & CSAH 46

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	B61	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	T	L	T
Maximum Queue (ft)	78	98	127	133	104	169	163	168	54	10	193	76
Average Queue (ft)	36	55	62	67	41	76	81	89	18	0	74	39
95th Queue (ft)	69	86	106	114	79	139	138	142	40	7	156	69
Link Distance (ft)			3418	3418			468	468		59		1307
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	300	300			300	300			300		300	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: TH 3 & CSAH 46

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (ft)	70	70	91	172	158	107
Average Queue (ft)	23	18	29	92	85	43
95th Queue (ft)	53	43	64	147	141	83
Link Distance (ft)	1307			1309	1309	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		300	300			300
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Biscayne Ave & CSAH 46

Movement	EB	WB	NB	SB
Directions Served	L	L	LT	LTR
Maximum Queue (ft)	23	11	29	70
Average Queue (ft)	1	1	6	29
95th Queue (ft)	10	6	24	56
Link Distance (ft)			1121	1359
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275	300		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Station Trail & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Akron Ave & CSAH 46

Movement	EB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	28	33	19
Average Queue (ft)	5	10	3
95th Queue (ft)	20	31	13
Link Distance (ft)		997	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		375
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Asher Ave E & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Barbara Ave E & CSAH 46

Movement	SB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	12
95th Queue (ft)	35
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Blaine Ave & CSAH 46

Movement	WB	NB	SB
Directions Served	LT	LTR	LTR
Maximum Queue (ft)	26	48	34
Average Queue (ft)	2	25	13
95th Queue (ft)	13	47	37
Link Distance (ft)	5216	1103	1427
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Clayton Ave E & CSAH 46

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	28	26	46
Average Queue (ft)	8	6	14
95th Queue (ft)	27	23	35
Link Distance (ft)		1464	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		500
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: TH 52 SB Ramp/Clayton Ave & CSAH 46

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (ft)	66	43	48	24	42	24	65	64
Average Queue (ft)	21	4	10	1	18	2	28	22
95th Queue (ft)	55	25	35	12	42	13	57	54
Link Distance (ft)	740	740	1030	1030	297	297		
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								300
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: CSAH 46 & Clayton Ave E

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	44	11	52	40	68	27
Average Queue (ft)	9	0	14	6	29	1
95th Queue (ft)	34	8	39	26	58	12
Link Distance (ft)	1030	1030	708	708	382	803
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18: TH 52 NB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: TH 52 SB On Ramp & TH 52 NB

Movement	SE
Directions Served	R
Maximum Queue (ft)	90
Average Queue (ft)	22
95th Queue (ft)	69
Link Distance (ft)	1367
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 34: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 38: CSAH 46 & Fr Rd W

Movement	SB
Directions Served	R
Maximum Queue (ft)	73
Average Queue (ft)	39
95th Queue (ft)	63
Link Distance (ft)	191
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: CSAH 46 & Fr Rd M

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	26	20	30	26
Average Queue (ft)	3	1	14	12
95th Queue (ft)	17	8	32	29
Link Distance (ft)			76	200
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	300	350		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Alverno Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 41: Albata Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 44: CSAH 46 & Fr Rd E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	48
Average Queue (ft)	18
95th Queue (ft)	44
Link Distance (ft)	171
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 48: CSAH 46 & Angus Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 55: TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 56: Clayton Ave E

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	47	104	58	4	19	3	12	20	11	4	48	14
CO Emissions (g)	1706	3897	2148	222	813	135	386	748	368	143	1552	532
NOx Emissions (g)	217	448	233	14	57	9	47	86	44	15	177	54

1: TH 3 & CSAH 46 Performance by movement

Movement	All
HC Emissions (g)	346
CO Emissions (g)	12651
NOx Emissions (g)	1400

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
HC Emissions (g)	0	26	0	0	142	0	0	0	1	0	170
CO Emissions (g)	2	841	2	11	4420	2	2	12	19	12	5325
NOx Emissions (g)	0	123	0	2	755	0	0	1	2	1	886

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	135	41	175
CO Emissions (g)	3905	1455	5361
NOx Emissions (g)	683	205	888

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
HC Emissions (g)	3	81	109	0	0	192
CO Emissions (g)	87	2625	2931	8	2	5653
NOx Emissions (g)	13	406	566	1	0	986

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	32	47	79
CO Emissions (g)	880	1333	2212
NOx Emissions (g)	166	239	405

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
HC Emissions (g)	22	119	2	143
CO Emissions (g)	800	3562	34	4395
NOx Emissions (g)	103	593	6	701

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
HC Emissions (g)	118	1	1	237	0	0	1	0	0	359
CO Emissions (g)	3978	66	66	7400	9	3	23	3	6	11553
NOx Emissions (g)	548	10	10	1149	1	0	3	0	1	1723

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
HC Emissions (g)	213	3	3	127	0	3	348
CO Emissions (g)	7085	135	214	8277	6	47	15764
NOx Emissions (g)	998	20	8	383	1	8	1418

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
HC Emissions (g)	1	13	12	8	63	3	0	3	2	2	7	114
CO Emissions (g)	25	483	380	479	3789	147	3	76	80	47	270	5780
NOx Emissions (g)	3	45	37	24	186	14	0	9	7	5	25	354

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
HC Emissions (g)	13	52	2	2	6	2	3	2	0	82
CO Emissions (g)	758	2988	178	46	203	53	71	38	10	4345
NOx Emissions (g)	38	155	7	6	23	7	10	5	1	252

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
HC Emissions (g)	8	0	1	10
CO Emissions (g)	181	3	46	230
NOx Emissions (g)	24	0	5	29

19: TH 52 NB Performance by movement

Movement	NWR	All
HC Emissions (g)	3	3
CO Emissions (g)	122	122
NOx Emissions (g)	12	12

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
HC Emissions (g)	8	22	29
CO Emissions (g)	319	870	1189
NOx Emissions (g)	24	69	92

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
HC Emissions (g)	20	20
CO Emissions (g)	313	313
NOx Emissions (g)	55	55

34: TH 52 NB Performance by movement

Movement	NBR	All
HC Emissions (g)	29	29
CO Emissions (g)	1795	1795
NOx Emissions (g)	95	95

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
HC Emissions (g)	11	11
CO Emissions (g)	739	739
NOx Emissions (g)	28	28

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	13	31	0	1	45
CO Emissions (g)	753	1362	19	26	2160
NOx Emissions (g)	39	130	2	3	175

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	0	42	1	0	58	0	0	0	0	0	0	0
CO Emissions (g)	28	2245	48	12	2201	15	1	0	0	0	0	2
NOx Emissions (g)	1	158	2	1	281	2	0	0	0	0	0	0

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
HC Emissions (g)	102
CO Emissions (g)	4553
NOx Emissions (g)	447

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	36	15	51
CO Emissions (g)	1021	492	1513
NOx Emissions (g)	181	80	261

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	16	91	107
CO Emissions (g)	644	2572	3216
NOx Emissions (g)	75	478	553

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	55	31	0	0	86
CO Emissions (g)	1727	1218	6	2	2953
NOx Emissions (g)	256	148	1	0	406

48: CSAH 46 & Angus Ave Performance by movement

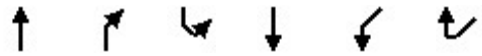
Movement	EBT	WBT	All
HC Emissions (g)	95	37	132
CO Emissions (g)	2801	992	3793
NOx Emissions (g)	497	194	690

56: Clayton Ave E Performance by movement

Movement	NBT	All
HC Emissions (g)	1	1
CO Emissions (g)	17	17
NOx Emissions (g)	3	3

Total Network Performance

HC Emissions (g)	4171
CO Emissions (g)	172612
NOx Emissions (g)	17643

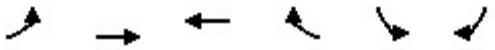


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	226	0	0	0	0
Future Volume (vph)	0	226	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3539	1583	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	0	0	0
Link Speed (mph)	65			65	30	
Link Distance (ft)	1472			1038	267	
Travel Time (s)	15.4			10.9	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	246	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

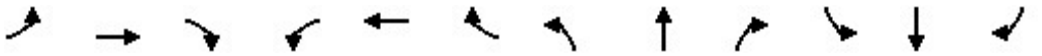
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	0	110	0	0
Future Volume (vph)	0	0	0	110	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			300	0	0
Storage Lanes	0			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	1583	0	0
Link Speed (mph)		65	65		30	
Link Distance (ft)		1468	1649		652	
Travel Time (s)		15.4	17.3		14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	120	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	534	650	22	0	113
Future Volume (vph)	0	534	650	22	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.995			0.865
Flt Protected						
Satd. Flow (prot)	0	3185	3169	0	0	1450
Flt Permitted						
Satd. Flow (perm)	0	3185	3169	0	0	1450
Link Speed (mph)		55	55		30	
Link Distance (ft)		114	742		237	
Travel Time (s)		1.4	9.2		5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	707	24	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	580	731	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.2%		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)	10	507	17	7	625	6	14	3	6	1	1	21
Future Volume (vph)	10	507	17	7	625	6	14	3	6	1	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		220	350		350	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.962			0.876	
Flt Protected	0.950			0.950				0.971			0.998	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1740	0	0	1629	0
Flt Permitted	0.950			0.950				0.971			0.998	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1740	0	0	1629	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		742			1291			136			261	
Travel Time (s)		9.2			16.0			3.1			5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	551	18	8	679	7	15	3	7	1	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	551	18	8	679	7	0	25	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

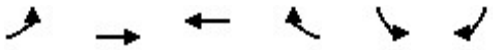
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	441	0	0	560	0	0
Future Volume (vph)	441	0	0	560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	0	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1033			402	1733	
Travel Time (s)	12.8			5.0	39.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	0	0	609	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	479	0	0	609	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

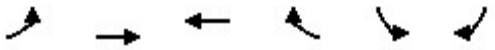
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	0	0	611	0	0
Future Volume (vph)	488	0	0	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	0	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	402			2307	1708	
Travel Time (s)	5.0			28.6	38.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	530	0	0	664	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	0	0	664	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	482	610	10	0	28
Future Volume (vph)	0	482	610	10	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.865	
Flt Protected						
Satd. Flow (prot)	0	3539	3532	0	1611	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3532	0	1611	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		1291	679		219	
Travel Time (s)		16.0	8.4		5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	524	663	11	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	524	674	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	486	595	0	0	0
Future Volume (vph)	0	486	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			300	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	3539	3539	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	3539	3539	1863	1863	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		2762	941		716	
Travel Time (s)		34.2	11.7		16.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	647	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	528	647	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

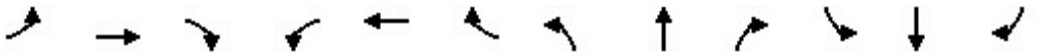
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			300
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	0	0	3539	1863
Flt Permitted						
Satd. Flow (perm)	0	1863	0	0	3539	1863
Link Speed (mph)	30			65	65	
Link Distance (ft)	108			1375	1488	
Travel Time (s)	2.5			14.4	15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			108	2491	
Travel Time (s)	2.3			2.5	56.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Free	Yield	

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

Proposed PM Signal Report - West Segment

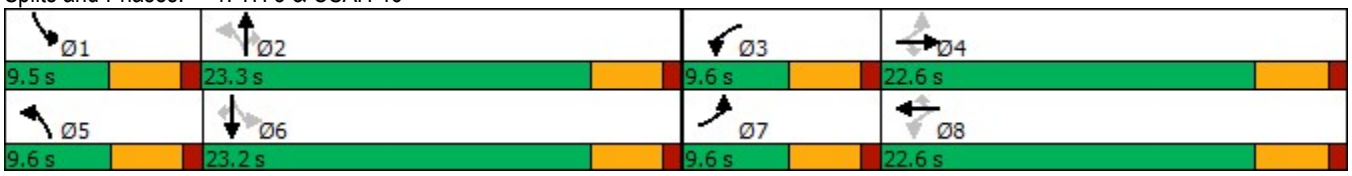


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Future Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.284			0.412			0.301			0.593		
Satd. Flow (perm)	1026	3539	1583	767	3539	1583	561	3539	1583	1105	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			176			176			222
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3477			555			1400			1400	
Travel Time (s)		43.1			6.9			17.4			17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	23.3	23.3	9.5	23.2	23.2
Total Split (%)	14.8%	34.8%	34.8%	14.8%	34.8%	34.8%	14.8%	35.8%	35.8%	14.6%	35.7%	35.7%
Maximum Green (s)	5.1	18.1	18.1	5.1	18.1	18.1	5.1	18.8	18.8	5.0	18.7	18.7
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	20.4	15.3	15.3	20.4	15.3	15.3	23.8	20.9	20.9	22.8	19.0	19.0
Actuated g/C Ratio	0.34	0.25	0.25	0.34	0.25	0.25	0.39	0.35	0.35	0.38	0.31	0.31
v/c Ratio	0.40	0.50	0.40	0.55	0.66	0.18	0.52	0.21	0.17	0.12	0.55	0.34
Control Delay	14.1	21.7	5.5	20.0	24.4	1.3	18.1	16.4	1.9	11.3	20.7	4.8
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	14.1	21.7	5.5	20.0	24.4	1.3	18.1	16.4	1.9	11.3	20.7	4.8
LOS	B	C	A	C	C	A	B	B	A	B	C	A
Approach Delay		15.7			20.9			13.8			16.2	
Approach LOS		B			C			B			B	

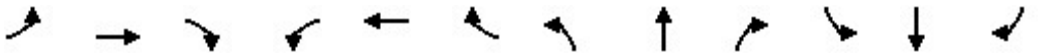
Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 60.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: TH 3 & CSAH 46



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Future Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	300		0	0		200	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.967	
Flt Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1805	1863	0	1776	0
Flt Permitted	0.950			0.950				0.969			0.986	
Satd. Flow (perm)	1770	3539	1583	1770	3539	0	0	1805	1863	0	1776	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		679			3715			1182			1405	
Travel Time (s)		8.4			46.1			26.9			31.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	512	5	2	651	0	7	4	0	16	27	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	512	5	2	651	0	0	11	0	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		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	486	0	0	607	0	0	0	0	0	0	0
Future Volume (vph)	0	486	0	0	607	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	350		300	200		200	150		150
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	1863	1863	3539	1863	0	1863	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	3539	1863	1863	3539	1863	0	1863	0	1863	0	1863
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3715			1033			1625			1295	
Travel Time (s)		46.1			12.8			36.9			29.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		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)	24	455	0	0	601	0	0	0	0	14	0	5
Future Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300	300		300	0		0	0		375
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1770	3539	1863	1863	3539	1863	0	1863	0	0	1770	1583
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1770	3539	1863	1863	3539	1863	0	1863	0	0	1770	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2307			2762			1820			1056	
Travel Time (s)		28.6			34.2			41.4			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	495	0	0	653	0	0	0	0	0	15	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

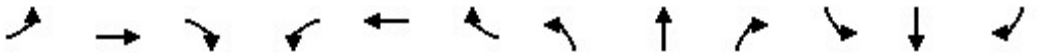
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	454	0	0	607	0	0
Future Volume (vph)	454	0	0	607	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	200		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	1863	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	1863	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	941			1125	1618	
Travel Time (s)	11.7			13.9	36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	493	0	0	660	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	0	0	660	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		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	494	0	0	575	0	0	0	0	0	0	29
Future Volume (vph)	0	494	0	0	575	0	0	0	0	0	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	275		275	0		200	200		200
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected												
Satd. Flow (prot)	1863	3539	1863	1863	3539	1863	0	1863	1863	1863	1863	1583
Flt Permitted												
Satd. Flow (perm)	1863	3539	1863	1863	3539	1863	0	1863	1863	1863	1863	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		600			2893			1327			1271	
Travel Time (s)		7.4			35.9			30.2			28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.9%		ICU Level of Service A	
Analysis Period (min) 15			

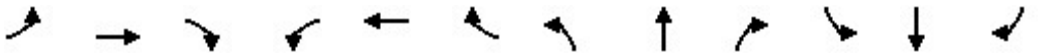


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Future Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		350	0		250	200		200	200		200
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.925			0.915	
Flt Protected					0.999			0.985			0.982	
Satd. Flow (prot)	0	3522	0	0	3536	0	0	1697	0	0	1674	0
Flt Permitted					0.999			0.985			0.982	
Satd. Flow (perm)	0	3522	0	0	3536	0	0	1697	0	0	1674	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2893			5278			1150			1474	
Travel Time (s)		35.9			65.4			26.1			33.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	499	16	7	597	0	14	7	26	7	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	515	0	0	604	0	0	47	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			

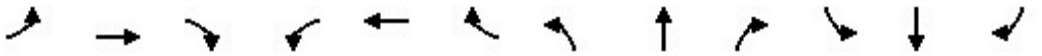
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	497	14	28	629	8	26
Future Volume (vph)	497	14	28	629	8	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		375	250		0	500
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Link Speed (mph)	55			55	30	
Link Distance (ft)	5278			838	1522	
Travel Time (s)	65.4			10.4	34.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	540	15	30	684	9	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	540	15	30	684	9	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	30.4%	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)	23	284	216	42	346	0	84	0	26	93	37	227
Future Volume (vph)	23	284	216	42	346	0	84	0	26	93	37	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	500		250	0		0	300		300
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938							0.850			0.850
Flt Protected		0.998			0.995			0.950			0.965	
Satd. Flow (prot)	0	3313	0	0	3522	0	0	1770	1583	0	1798	1583
Flt Permitted		0.998			0.995			0.950			0.965	
Satd. Flow (perm)	0	3313	0	0	3522	0	0	1770	1583	0	1798	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		838			1157			384			1048	
Travel Time (s)		10.4			14.3			8.7			23.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	569	0	0	422	0	0	91	28	0	141	247
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 50.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Future Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		300	350		350	400		400	225		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.979						0.850	
Flt Protected		0.989			0.993			0.961				
Satd. Flow (prot)	0	3483	0	0	3441	0	0	1790	1863	1863	1583	0
Flt Permitted		0.989			0.993			0.961				
Satd. Flow (perm)	0	3483	0	0	3441	0	0	1790	1863	1863	1583	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1157			800			479			872	
Travel Time (s)		14.3			9.9			10.9			19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	328	14	42	203	39	198	48	0	0	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	438	0	0	284	0	0	246	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	355	0	52
Future Volume (vph)	0	0	0	355	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	631			563	479	
Travel Time (s)	14.3			12.8	10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	386	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	386	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	52
Future Volume (vph)	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	0	0	1611
Link Speed (mph)	65			65	30	
Link Distance (ft)	1038			1563	631	
Travel Time (s)	10.9			16.4	14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	110	0	0	0	295
Future Volume (vph)	0	110	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	652		1586			384
Travel Time (s)	14.8		36.0			8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	120	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	120	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	295
Future Volume (vph)	0	0	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1611
Link Speed (mph)		65	65		30	
Link Distance (ft)		1016	1468		1586	
Travel Time (s)		10.7	15.4		36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	217	417	201	184	533	83	154	232	113	57	565	216

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Vehicles Entered	2972

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Vehicles Entered	6	481	6	2	598	5	3	15	23	12	1151

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	497	599	1096

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Vehicles Entered	19	484	589	15	5	1112

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	502	593	1095

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Vehicles Entered	514	562	25	1101

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Vehicles Entered	498	15	8	622	12	5	24	5	12	1201

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Vehicles Entered	508	16	26	621	9	29	1209

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Vehicles Entered	23	288	229	43	336	86	2	29	84	35	223	1378

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Vehicles Entered	82	302	16	40	181	36	181	165	17	1020

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
Vehicles Entered	346	1	56	403

19: TH 52 NB Performance by movement

Movement	NWR	All
Vehicles Entered	56	56

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Vehicles Entered	115	308	423

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Vehicles Entered	307	307

34: TH 52 NB Performance by movement

Movement	NBR	All
Vehicles Entered	217	217

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Vehicles Entered	116	116

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	585	644	24	114	1367

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	11	515	19	5	619	7	15	3	8	0	1	23

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Vehicles Entered	1226

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	495	600	1095

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	503	598	1101

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	524	602	11	27	1164

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	502	591	1093

56: Clayton Ave E Performance by movement

Movement	NBT	All
Vehicles Entered	23	23

Total Network Performance

Vehicles Entered	3881

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.2	0.9	0.0	0.0	0.0	3.2	0.8	3.1	2.7	1.0	2.6
Total Del/Veh (s)	72.6	85.7	22.1	51.9	32.1	6.6	42.7	16.6	3.3	27.9	42.3	15.5

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	41.3

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.0
Total Del/Veh (s)	2.2	0.7	0.0	7.5	5.4	12.6	9.8	13.1	11.5	8.2	3.8

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	3.5	1.5	2.4

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	4.2	0.0
Total Del/Veh (s)	4.4	2.5	3.8	9.2	4.8	3.4

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.0	2.1	1.6

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0
Total Del/Veh (s)	1.8	3.2	4.3	2.6

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	3.4	2.7	4.5	3.7	9.2	10.5	4.2	9.9	3.9	3.7

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.1	2.1	0.1
Total Del/Veh (s)	6.6	3.8	3.4	1.4	11.3	3.4	3.8

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.8	3.6	0.9
Total Del/Veh (s)	3.7	2.5	1.1	3.9	3.0	21.8	0.1	4.6	17.3	20.3	11.5	6.7

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.3	0.5	0.0	0.0	0.1	0.1
Total Del/Veh (s)	2.4	1.6	0.6	2.2	2.5	1.3	10.4	8.6	4.1	4.1

18: Performance by movement

Movement	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	0.1	2.3	0.4

19: TH 52 NB Performance by movement

Movement	NWR	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	13.0	13.0

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.6	0.4

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.8	1.8

34: TH 52 NB Performance by movement

Movement	NBR	All
Denied Del/Veh (s)	3.8	3.8
Total Del/Veh (s)	1.5	1.5

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Denied Del/Veh (s)	3.9	3.9
Total Del/Veh (s)	0.3	0.3

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0
Total Del/Veh (s)	0.3	2.6	0.5	5.4	1.9

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.1	0.1
Total Del/Veh (s)	3.6	0.9	0.2	5.9	2.4	1.1	10.4	10.9	3.9	9.1	8.4	5.6

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.9

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	0.6	0.8

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.7	3.4	2.2

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	1.5	0.2	5.3	1.3

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.9	1.2	1.9

56: Clayton Ave E Performance by movement

Movement	NBT	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.4	0.4

Total Network Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	48.4

Intersection: 1: TH 3 & CSAH 46

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	325	594	502	209	223	211	201	69	184	129	40	274
Average Queue (ft)	184	312	196	91	105	117	122	25	84	66	14	45
95th Queue (ft)	367	597	512	228	190	189	191	51	159	118	28	176
Link Distance (ft)		3430	3430			481	481			1788		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	300			300	300		300	300
Storage Blk Time (%)	1	24	2	0		0						
Queuing Penalty (veh)	2	49	3	0		0						

Intersection: 1: TH 3 & CSAH 46

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	631	325
Average Queue (ft)	270	105
95th Queue (ft)	492	293
Link Distance (ft)	2022	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		300
Storage Blk Time (%)	8	0
Queuing Penalty (veh)	19	0

Intersection: 2: Biscayne Ave & CSAH 46

Movement	EB	WB	NB	SB
Directions Served	L	L	LT	LTR
Maximum Queue (ft)	23	4	24	78
Average Queue (ft)	2	0	8	31
95th Queue (ft)	12	3	26	58
Link Distance (ft)			1134	1371
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275	300		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Station Trail & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Akron Ave & CSAH 46

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	34	33	19
Average Queue (ft)	6	9	3
95th Queue (ft)	24	29	15
Link Distance (ft)		1009	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		375
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Asher Ave E & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Barbara Ave E & CSAH 46

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	37
Average Queue (ft)	13
95th Queue (ft)	32
Link Distance (ft)	1229
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Blaine Ave & CSAH 46

Movement	WB	NB	SB
Directions Served	LT	LTR	LTR
Maximum Queue (ft)	22	44	29
Average Queue (ft)	1	17	8
95th Queue (ft)	11	37	25
Link Distance (ft)	5215	1109	1430
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Clayton Ave E & CSAH 46

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	32	26	43
Average Queue (ft)	6	6	12
95th Queue (ft)	25	24	33
Link Distance (ft)		1476	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		500
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: TH 52 SB Ramp/Clayton Ave & CSAH 46

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	R	L	T	R
Maximum Queue (ft)	32	15	38	100	45	106	96	172
Average Queue (ft)	7	1	9	43	12	42	22	57
95th Queue (ft)	26	10	29	85	33	80	56	119
Link Distance (ft)				320	320			
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	275	275	500			300		300
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: CSAH 46 & Clayton Ave E

Movement	EB	WB	WB	NB	NB	SB
Directions Served	L	L	R	L	T	TR
Maximum Queue (ft)	43	27	2	132	58	26
Average Queue (ft)	13	5	0	54	25	11
95th Queue (ft)	36	21	1	95	52	31
Link Distance (ft)					414	827
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	375	350	350	400		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18:

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: TH 52 SB On Ramp & TH 52 NB

Movement	SE
Directions Served	R
Maximum Queue (ft)	78
Average Queue (ft)	17
95th Queue (ft)	57
Link Distance (ft)	1367
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 34: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 38: CSAH 46 & Fr Rd W

Movement	B61	SB
Directions Served	T	R
Maximum Queue (ft)	106	71
Average Queue (ft)	4	40
95th Queue (ft)	77	64
Link Distance (ft)	481	190
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 39: CSAH 46 & Fr Rd M

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	25	21	40	35
Average Queue (ft)	3	2	12	13
95th Queue (ft)	17	12	31	32
Link Distance (ft)			88	212
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	300	350		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Alverno Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 41: Albata Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 44: CSAH 46 & Fr Rd E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	19
95th Queue (ft)	45
Link Distance (ft)	183
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 48: CSAH 46 & Angus Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 55: TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 56: Clayton Ave E

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 74

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	42	129	72	6	20	4	19	33	12	4	68	25
CO Emissions (g)	1718	4704	2827	259	791	156	879	1430	638	190	2201	974
NOx Emissions (g)	184	470	271	17	58	10	68	121	46	15	228	83

1: TH 3 & CSAH 46 Performance by movement

Movement	All
HC Emissions (g)	433
CO Emissions (g)	16767
NOx Emissions (g)	1571

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
HC Emissions (g)	0	22	0	0	151	0	0	1	1	0	175
CO Emissions (g)	3	670	2	5	3753	3	3	15	27	11	4492
NOx Emissions (g)	1	109	0	1	774	0	0	2	4	1	892

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	111	43	154
CO Emissions (g)	3105	1375	4480
NOx Emissions (g)	605	214	819

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
HC Emissions (g)	4	67	113	0	0	184
CO Emissions (g)	122	2278	2770	8	3	5182
NOx Emissions (g)	18	355	576	1	0	951

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	26	80	107
CO Emissions (g)	774	2304	3078
NOx Emissions (g)	143	385	529

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
HC Emissions (g)	49	131	1	181
CO Emissions (g)	1338	3486	21	4845
NOx Emissions (g)	266	627	3	896

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
HC Emissions (g)	79	1	1	260	0	0	1	0	0	342
CO Emissions (g)	2091	31	33	7024	7	3	12	3	5	9208
NOx Emissions (g)	435	9	7	1219	1	0	2	0	1	1674

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
HC Emissions (g)	143	1	2	109	0	2	259
CO Emissions (g)	4158	59	168	6198	8	34	10626
NOx Emissions (g)	802	15	8	361	1	5	1192

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
HC Emissions (g)	0	24	8	5	60	4	0	2	2	2	8	116
CO Emissions (g)	19	1181	311	316	3411	165	5	55	97	55	253	5867
NOx Emissions (g)	2	89	29	16	207	15	0	6	7	6	21	399

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
HC Emissions (g)	12	47	1	13	71	23	2	1	0	170
CO Emissions (g)	597	2779	93	376	2250	571	62	12	7	6745
NOx Emissions (g)	37	168	4	54	311	78	7	2	1	662

18: Performance by movement

Movement	NBT	SBT	SBR	All
HC Emissions (g)	7	0	1	8
CO Emissions (g)	124	3	48	174
NOx Emissions (g)	20	0	5	25

19: TH 52 NB Performance by movement

Movement	NWR	All
HC Emissions (g)	3	3
CO Emissions (g)	107	107
NOx Emissions (g)	10	10

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
HC Emissions (g)	8	18	25
CO Emissions (g)	313	774	1087
NOx Emissions (g)	24	62	86

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
HC Emissions (g)	15	15
CO Emissions (g)	226	226
NOx Emissions (g)	40	40

34: TH 52 NB Performance by movement

Movement	NBR	All
HC Emissions (g)	33	33
CO Emissions (g)	1979	1979
NOx Emissions (g)	104	104

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
HC Emissions (g)	11	11
CO Emissions (g)	711	711
NOx Emissions (g)	27	27

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	13	33	0	1	47
CO Emissions (g)	761	1228	12	24	2025
NOx Emissions (g)	44	129	1	3	177

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	0	42	1	0	64	0	0	0	0	0	0	0
CO Emissions (g)	31	2280	51	11	2196	13	1	0	0	0	0	3
NOx Emissions (g)	1	161	3	1	286	2	0	0	0	0	0	0

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
HC Emissions (g)	107
CO Emissions (g)	4587
NOx Emissions (g)	454

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	29	19	48
CO Emissions (g)	818	621	1439
NOx Emissions (g)	157	90	247

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	14	95	109
CO Emissions (g)	590	2351	2941
NOx Emissions (g)	68	490	558

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	50	34	0	0	85
CO Emissions (g)	1514	1155	8	3	2679
NOx Emissions (g)	239	156	1	0	396

48: CSAH 46 & Angus Ave Performance by movement

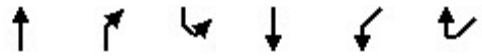
Movement	EBT	WBT	All
HC Emissions (g)	77	39	116
CO Emissions (g)	2224	1010	3234
NOx Emissions (g)	431	198	629

56: Clayton Ave E Performance by movement

Movement	NBT	All
HC Emissions (g)	1	1
CO Emissions (g)	11	11
NOx Emissions (g)	2	2

Total Network Performance

HC Emissions (g)	3877
CO Emissions (g)	149495
NOx Emissions (g)	16692

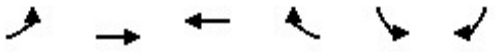


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	226	0	0	0	0
Future Volume (vph)	0	226	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3539	1583	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	0	0	0
Link Speed (mph)	65			65	30	
Link Distance (ft)	1472			1038	267	
Travel Time (s)	15.4			10.9	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	246	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

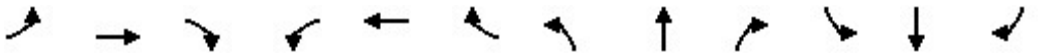
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	0	110	0	0
Future Volume (vph)	0	0	0	110	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			300	0	0
Storage Lanes	0			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	1583	0	0
Link Speed (mph)		65	65		30	
Link Distance (ft)		1468	1649		652	
Travel Time (s)		15.4	17.3		14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	120	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	534	650	22	0	113
Future Volume (vph)	0	534	650	22	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996			0.865
Flt Protected						
Satd. Flow (prot)	0	1676	1670	0	0	1450
Flt Permitted						
Satd. Flow (perm)	0	1676	1670	0	0	1450
Link Speed (mph)		55	55		30	
Link Distance (ft)		114	742		237	
Travel Time (s)		1.4	9.2		5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	707	24	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	580	731	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.9%		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)	10	507	17	7	625	6	14	3	6	1	1	21
Future Volume (vph)	10	507	17	7	625	6	14	3	6	1	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		220	350		350	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.962			0.876	
Flt Protected	0.950			0.950				0.971			0.998	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1740	0	0	1629	0
Flt Permitted	0.950			0.950				0.971			0.998	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1740	0	0	1629	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		742			1291			136			261	
Travel Time (s)		9.2			16.0			3.1			5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	551	18	8	679	7	15	3	7	1	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	551	18	8	679	7	0	25	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

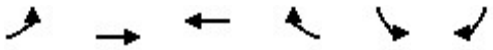
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	441	0	0	560	0	0
Future Volume (vph)	441	0	0	560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1033			402	1733	
Travel Time (s)	12.8			5.0	39.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	0	0	609	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	479	0	0	609	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			

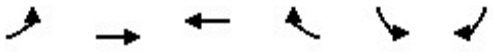
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	0	0	611	0	0
Future Volume (vph)	488	0	0	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1863	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	402			2307	1708	
Travel Time (s)	5.0			28.6	38.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	530	0	0	664	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	0	0	664	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes			Yes		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.5%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	482	610	10	0	28
Future Volume (vph)	0	482	610	10	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.865	
Flt Protected						
Satd. Flow (prot)	0	1863	1859	0	1611	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1859	0	1611	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		1291	679		219	
Travel Time (s)		16.0	8.4		5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	524	663	11	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	524	674	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	486	595	0	0	0
Future Volume (vph)	0	486	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			300	0	0
Storage Lanes	0			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	1863	1863	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		2762	941		716	
Travel Time (s)		34.2	11.7		16.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	647	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	528	647	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

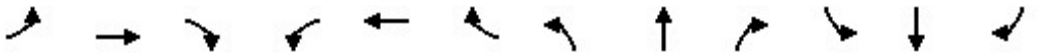
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			300
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	0	0	3539	1863
Flt Permitted						
Satd. Flow (perm)	0	1863	0	0	3539	1863
Link Speed (mph)	30			65	65	
Link Distance (ft)	108			1375	1488	
Travel Time (s)	2.5			14.4	15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			108	2491	
Travel Time (s)	2.3			2.5	56.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Free	Yield	

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Future Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.233			0.363			0.155			0.591		
Satd. Flow (perm)	434	3539	1583	676	3539	1583	289	1863	1583	1101	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			143			143			222
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3477			555			1848			2080	
Travel Time (s)		43.1			6.9			22.9			25.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

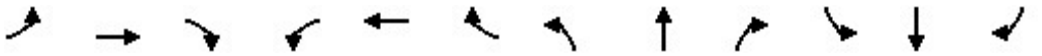
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	12.0	23.1	23.1	11.4	22.5	22.5	10.0	35.9	35.9	9.6	35.5	35.5
Total Split (%)	15.0%	28.9%	28.9%	14.3%	28.1%	28.1%	12.5%	44.9%	44.9%	12.0%	44.4%	44.4%
Maximum Green (s)	7.5	18.6	18.6	6.9	18.0	18.0	5.5	31.4	31.4	5.1	31.0	31.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.7	17.2	17.2	23.5	16.6	16.6	38.6	35.4	35.4	36.1	31.0	31.0
Actuated g/C Ratio	0.31	0.22	0.22	0.30	0.21	0.21	0.49	0.45	0.45	0.46	0.39	0.39
v/c Ratio	0.85	0.58	0.44	0.64	0.78	0.22	0.68	0.31	0.15	0.11	0.84	0.29
Control Delay	49.7	30.7	6.7	29.9	37.6	3.1	27.8	16.8	2.4	10.5	34.4	3.6
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	49.7	30.7	6.7	29.9	37.6	3.1	27.8	16.8	2.4	10.5	34.4	3.6
LOS	D	C	A	C	D	A	C	B	A	B	C	A
Approach Delay		29.3			32.1			17.1			25.2	
Approach LOS		C			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 78.7			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: TH 3 & CSAH 46

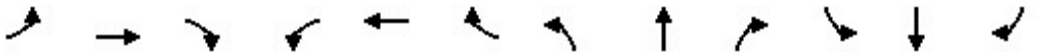
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Future Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	300		0	0		200	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.967	
Flt Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1770	1863	1583	1770	1863	0	0	1805	1863	0	1776	0
Flt Permitted	0.950			0.950				0.969			0.986	
Satd. Flow (perm)	1770	1863	1583	1770	1863	0	0	1805	1863	0	1776	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		679			3715			1182			1405	
Travel Time (s)		8.4			46.1			26.9			31.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	512	5	2	651	0	7	4	0	16	27	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	512	5	2	651	0	0	11	0	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.8%	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	486	0	0	607	0	0	0	0	0	0	0
Future Volume (vph)	0	486	0	0	607	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	350		300	0		0	150		150
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	1863	1863	1863	1863	1863	0	1863	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	1863	1863	1863	1863	1863	0	1863	0	1863	0	1863
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3715			1033			1625			1295	
Travel Time (s)		46.1			12.8			36.9			29.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		ICU Level of Service A	
Analysis Period (min) 15			

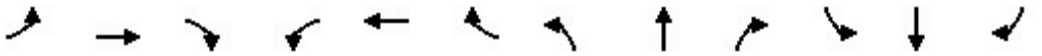


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Future Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300	300		300	0		0	0		375
Storage Lanes	1		1	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	1863	1863	1863	1863	1863	0	1863	0	1770	0	1583
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	1863	1863	1863	1863	1863	0	1863	0	1770	0	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2307			2762			1820			1056	
Travel Time (s)		28.6			34.2			41.4			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

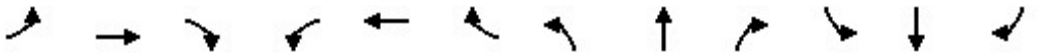
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	454	0	0	607	0	0
Future Volume (vph)	454	0	0	607	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	1863	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	1863	0	1863	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	941			1727	1618	
Travel Time (s)	11.7			21.4	36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	493	0	0	660	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	0	0	660	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.3%		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	494	0	0	575	0	0	0	0	0	0	29
Future Volume (vph)	0	494	0	0	575	0	0	0	0	0	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		275	0		275	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt											0.865	
Flt Protected												
Satd. Flow (prot)	0	1863	1863	0	1863	1863	0	1863	0	0	1611	0
Flt Permitted												
Satd. Flow (perm)	0	1863	1863	0	1863	1863	0	1863	0	0	1611	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1727			2893			1327			1271	
Travel Time (s)		21.4			35.9			30.2			28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	537	0	0	625	0	0	0	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

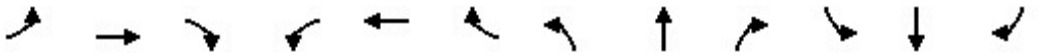


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Future Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		350	0		250	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.925			0.915	
Flt Protected					0.999			0.985			0.982	
Satd. Flow (prot)	0	1863	1583	0	1861	1863	0	1697	0	0	1674	0
Flt Permitted					0.999			0.985			0.982	
Satd. Flow (perm)	0	1863	1583	0	1861	1863	0	1697	0	0	1674	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2893			5278			1150			1474	
Travel Time (s)		35.9			65.4			26.1			33.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	499	16	7	597	0	14	7	26	7	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	499	16	0	604	0	0	47	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

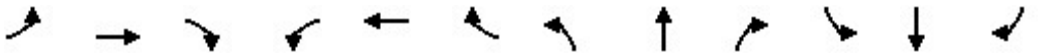
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	497	14	28	629	8	26
Future Volume (vph)	497	14	28	629	8	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		375	250		0	500
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	55			55	30	
Link Distance (ft)	5278			838	1522	
Travel Time (s)	65.4			10.4	34.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	540	15	30	684	9	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	540	15	30	684	9	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.1%	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)	23	284	216	42	346	0	84	0	26	93	37	227
Future Volume (vph)	23	284	216	42	346	0	84	0	26	93	37	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	500		250	0		0	300		300
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1863	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1863	1770	1863	1583	1770	1863	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		838			1157			384			1048	
Travel Time (s)		10.4			14.3			8.7			23.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.9%		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)	88	302	13	39	187	36	182	44	0	0	0	19
Future Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		300	350		350	400		400	225		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850					0.850	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1852	0	1770	1863	1583	1770	1863	1863	1863	1583	0
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1852	0	1770	1863	1583	1770	1863	1863	1863	1583	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1157			4026			479			872	
Travel Time (s)		14.3			49.9			10.9			19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	328	14	42	203	39	198	48	0	0	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	342	0	42	203	39	198	48	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	226	0	52
Future Volume (vph)	0	0	0	226	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	631			563	479	
Travel Time (s)	14.3			12.8	10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	246	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	246	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.2%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	52
Future Volume (vph)	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	0	0	1611
Link Speed (mph)	65			65	30	
Link Distance (ft)	1038			1563	631	
Travel Time (s)	10.9			16.4	14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	110	0	0	0	295
Future Volume (vph)	0	110	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	652		1586			384
Travel Time (s)	14.8		36.0			8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	120	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	120	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	295
Future Volume (vph)	0	0	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1611
Link Speed (mph)		65	65		30	
Link Distance (ft)		1016	1468		1586	
Travel Time (s)		10.7	15.4		36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	207	423	211	174	543	92	154	237	108	46	563	200

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Vehicles Entered	2958

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Vehicles Entered	7	465	4	2	603	5	6	15	26	14	1147

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	481	605	1086

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Vehicles Entered	25	457	597	13	6	1098

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	477	603	1080

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Vehicles Entered	480	575	26	1081

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Vehicles Entered	467	15	6	639	11	5	22	4	9	1178

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Vehicles Entered	484	14	28	635	10	22	1193

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Vehicles Entered	21	275	209	40	355	86	3	25	92	39	225	1370

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Vehicles Entered	78	300	14	36	190	35	188	47	17	905

18: Performance by movement

Movement	NBT	SBT	SBR	All
Vehicles Entered	234	1	48	283

19: TH 52 NB Performance by movement

Movement	NWR	All
Vehicles Entered	48	48

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Vehicles Entered	113	287	400

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Vehicles Entered	284	284

34: TH 52 NB Performance by movement

Movement	NBR	All
Vehicles Entered	235	235

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Vehicles Entered	113	113

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	573	647	22	125	1367

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	10	507	17	4	622	7	13	4	6	1	1	22

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Vehicles Entered	1214

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	479	608	1087

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	481	609	1090

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	511	606	11	26	1154

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	477	600	1077

56: Clayton Ave E Performance by movement

Movement	NBT	All
Vehicles Entered	22	22

Total Network Performance

Vehicles Entered	3767

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.1	0.2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.8	20.5	8.3	27.0	20.9	4.3	30.9	12.6	3.1	17.3	20.9	7.4

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	18.2

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	1.7	0.4	0.0	4.6	2.9	13.9	16.7	9.7	13.5	5.3	2.2

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.9	0.8	1.3

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	3.7	0.0
Total Del/Veh (s)	2.8	1.4	2.2	8.6	2.5	2.0

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.8	0.7

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	2.9	0.1
Total Del/Veh (s)	0.7	1.7	3.4	1.3

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	2.9	2.5	3.1	1.7	7.5	11.0	3.3	10.5	3.5	2.4

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	2.0	0.1
Total Del/Veh (s)	3.2	1.8	3.1	0.6	10.3	3.5	1.9

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	3.6	0.6
Total Del/Veh (s)	3.4	7.4	3.0	2.8	6.2	3.5	0.1	2.1	5.1	5.7	3.3	4.9

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.2	7.8	1.3	2.3	5.4	1.2	3.9	1.4	2.4	4.7

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.1	1.0	2.4	0.4

19: TH 52 NB Performance by movement

Movement	NWR	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	13.2	13.0

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.1	0.3	0.3

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	2.2	2.2

34: TH 52 NB Performance by movement

Movement	NBR	All
Denied Del/Veh (s)	3.8	3.8
Total Del/Veh (s)	1.2	1.2

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Denied Del/Veh (s)	3.9	3.9
Total Del/Veh (s)	0.3	0.3

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.0
Total Del/Veh (s)	0.1	1.5	0.2	5.5	1.2

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1		0.1	0.1
Total Del/Veh (s)	2.7	0.6	0.1	1.9	1.1	0.4	7.5	14.8	4.1		13.4	3.8

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.1

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.3	0.4

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.4	2.0	1.3

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.6	0.7	0.0	4.2	0.7

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.7	1.1

56: Clayton Ave E Performance by movement

Movement	NBT	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.1	0.1

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	26.6

Intersection: 1: TH 3 & CSAH 46

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	B61	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	T	L	T
Maximum Queue (ft)	78	98	127	133	104	169	163	168	54	10	193	76
Average Queue (ft)	36	55	62	67	41	76	81	89	18	0	74	39
95th Queue (ft)	69	86	106	114	79	139	138	142	40	7	156	69
Link Distance (ft)			3418	3418			468	468		59		1307
Upstream Blk Time (%)										0		
Queuing Penalty (veh)										0		
Storage Bay Dist (ft)	300	300			300	300			300		300	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: TH 3 & CSAH 46

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (ft)	70	70	91	172	158	107
Average Queue (ft)	23	18	29	92	85	43
95th Queue (ft)	53	43	64	147	141	83
Link Distance (ft)	1307			1309	1309	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		300	300			300
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Biscayne Ave & CSAH 46

Movement	EB	WB	NB	SB
Directions Served	L	L	LT	LTR
Maximum Queue (ft)	23	11	29	70
Average Queue (ft)	1	1	6	29
95th Queue (ft)	10	6	24	56
Link Distance (ft)			1121	1359
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	275	300		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Station Trail & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Akron Ave & CSAH 46

Movement	EB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	28	33	19
Average Queue (ft)	5	10	3
95th Queue (ft)	20	31	13
Link Distance (ft)		997	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		375
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Asher Ave E & CSAH 46

Movement			
Directions Served			
Maximum Queue (ft)			
Average Queue (ft)			
95th Queue (ft)			
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 11: Barbara Ave E & CSAH 46

Movement	SB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	12
95th Queue (ft)	35
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Blaine Ave & CSAH 46

Movement	WB	NB	SB
Directions Served	LT	LTR	LTR
Maximum Queue (ft)	26	48	34
Average Queue (ft)	2	25	13
95th Queue (ft)	13	47	37
Link Distance (ft)	5216	1103	1427
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: Clayton Ave E & CSAH 46

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	28	26	46
Average Queue (ft)	8	6	14
95th Queue (ft)	27	23	35
Link Distance (ft)		1464	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		500
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: TH 52 SB Ramp/Clayton Ave & CSAH 46

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (ft)	66	43	48	24	42	24	65	64
Average Queue (ft)	21	4	10	1	18	2	28	22
95th Queue (ft)	55	25	35	12	42	13	57	54
Link Distance (ft)	740	740	1030	1030	297	297		
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								300
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: CSAH 46 & Clayton Ave E

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	44	11	52	40	68	27
Average Queue (ft)	9	0	14	6	29	1
95th Queue (ft)	34	8	39	26	58	12
Link Distance (ft)	1030	1030	708	708	382	803
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 18: TH 52 NB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 22: TH 52 SB On Ramp & TH 52 NB

Movement	SE
Directions Served	R
Maximum Queue (ft)	90
Average Queue (ft)	22
95th Queue (ft)	69
Link Distance (ft)	1367
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 34: TH 52 NB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 38: CSAH 46 & Fr Rd W

Movement	SB
Directions Served	R
Maximum Queue (ft)	73
Average Queue (ft)	39
95th Queue (ft)	63
Link Distance (ft)	191
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: CSAH 46 & Fr Rd M

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	26	20	30	26
Average Queue (ft)	3	1	14	12
95th Queue (ft)	17	8	32	29
Link Distance (ft)			76	200
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	300	350		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Alverno Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 41: Albata Ave & CSAH 46

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 44: CSAH 46 & Fr Rd E

Movement	SB
Directions Served	LR
Maximum Queue (ft)	48
Average Queue (ft)	18
95th Queue (ft)	44
Link Distance (ft)	171
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 48: CSAH 46 & Angus Ave

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 55: TH 52 SB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 56: Clayton Ave E

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	47	104	58	4	19	3	12	20	11	4	48	14
CO Emissions (g)	1706	3897	2148	222	813	135	386	748	368	143	1552	532
NOx Emissions (g)	217	448	233	14	57	9	47	86	44	15	177	54

1: TH 3 & CSAH 46 Performance by movement

Movement	All
HC Emissions (g)	346
CO Emissions (g)	12651
NOx Emissions (g)	1400

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
HC Emissions (g)	0	26	0	0	142	0	0	0	1	0	170
CO Emissions (g)	2	841	2	11	4420	2	2	12	19	12	5325
NOx Emissions (g)	0	123	0	2	755	0	0	1	2	1	886

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	135	41	175
CO Emissions (g)	3905	1455	5361
NOx Emissions (g)	683	205	888

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
HC Emissions (g)	3	81	109	0	0	192
CO Emissions (g)	87	2625	2931	8	2	5653
NOx Emissions (g)	13	406	566	1	0	986

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	32	47	79
CO Emissions (g)	880	1333	2212
NOx Emissions (g)	166	239	405

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
HC Emissions (g)	22	119	2	143
CO Emissions (g)	800	3562	34	4395
NOx Emissions (g)	103	593	6	701

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
HC Emissions (g)	118	1	1	237	0	0	1	0	0	359
CO Emissions (g)	3978	66	66	7400	9	3	23	3	6	11553
NOx Emissions (g)	548	10	10	1149	1	0	3	0	1	1723

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
HC Emissions (g)	213	3	3	127	0	3	348
CO Emissions (g)	7085	135	214	8277	6	47	15764
NOx Emissions (g)	998	20	8	383	1	8	1418

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
HC Emissions (g)	1	13	12	8	63	3	0	3	2	2	7	114
CO Emissions (g)	25	483	380	479	3789	147	3	76	80	47	270	5780
NOx Emissions (g)	3	45	37	24	186	14	0	9	7	5	25	354

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
HC Emissions (g)	13	52	2	2	6	2	3	2	0	82
CO Emissions (g)	758	2988	178	46	203	53	71	38	10	4345
NOx Emissions (g)	38	155	7	6	23	7	10	5	1	252

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
HC Emissions (g)	8	0	1	10
CO Emissions (g)	181	3	46	230
NOx Emissions (g)	24	0	5	29

19: TH 52 NB Performance by movement

Movement	NWR	All
HC Emissions (g)	3	3
CO Emissions (g)	122	122
NOx Emissions (g)	12	12

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
HC Emissions (g)	8	22	29
CO Emissions (g)	319	870	1189
NOx Emissions (g)	24	69	92

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
HC Emissions (g)	20	20
CO Emissions (g)	313	313
NOx Emissions (g)	55	55

34: TH 52 NB Performance by movement

Movement	NBR	All
HC Emissions (g)	29	29
CO Emissions (g)	1795	1795
NOx Emissions (g)	95	95

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
HC Emissions (g)	11	11
CO Emissions (g)	739	739
NOx Emissions (g)	28	28

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	13	31	0	1	45
CO Emissions (g)	753	1362	19	26	2160
NOx Emissions (g)	39	130	2	3	175

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HC Emissions (g)	0	42	1	0	58	0	0	0	0	0	0	0
CO Emissions (g)	28	2245	48	12	2201	15	1	0	0	0	0	2
NOx Emissions (g)	1	158	2	1	281	2	0	0	0	0	0	0

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
HC Emissions (g)	102
CO Emissions (g)	4553
NOx Emissions (g)	447

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	36	15	51
CO Emissions (g)	1021	492	1513
NOx Emissions (g)	181	80	261

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
HC Emissions (g)	16	91	107
CO Emissions (g)	644	2572	3216
NOx Emissions (g)	75	478	553

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
HC Emissions (g)	55	31	0	0	86
CO Emissions (g)	1727	1218	6	2	2953
NOx Emissions (g)	256	148	1	0	406

48: CSAH 46 & Angus Ave Performance by movement

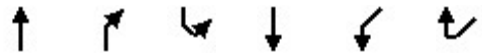
Movement	EBT	WBT	All
HC Emissions (g)	95	37	132
CO Emissions (g)	2801	992	3793
NOx Emissions (g)	497	194	690

56: Clayton Ave E Performance by movement

Movement	NBT	All
HC Emissions (g)	1	1
CO Emissions (g)	17	17
NOx Emissions (g)	3	3

Total Network Performance

HC Emissions (g)	4171
CO Emissions (g)	172612
NOx Emissions (g)	17643

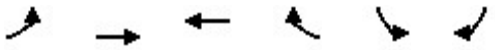


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	226	0	0	0	0
Future Volume (vph)	0	226	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	0		0	0
Storage Lanes		1	0		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3539	1583	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	3539	1583	0	0	0	0
Link Speed (mph)	65			65	30	
Link Distance (ft)	1472			1038	267	
Travel Time (s)	15.4			10.9	6.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	246	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

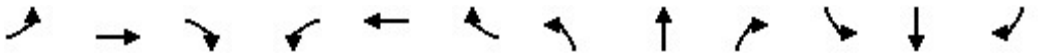
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	0	0	110	0	0
Future Volume (vph)	0	0	0	110	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			300	0	0
Storage Lanes	0			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	0	3539	1583	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	3539	1583	0	0
Link Speed (mph)		65	65		30	
Link Distance (ft)		1468	1649		652	
Travel Time (s)		15.4	17.3		14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	120	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	120	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	534	650	22	0	113
Future Volume (vph)	0	534	650	22	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.995			0.865
Flt Protected						
Satd. Flow (prot)	0	3185	3169	0	0	1450
Flt Permitted						
Satd. Flow (perm)	0	3185	3169	0	0	1450
Link Speed (mph)		55	55		30	
Link Distance (ft)		114	742		237	
Travel Time (s)		1.4	9.2		5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	580	707	24	0	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	580	731	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	CBD		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.2%		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)	10	507	17	7	625	6	14	3	6	1	1	21
Future Volume (vph)	10	507	17	7	625	6	14	3	6	1	1	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		220	350		350	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.962			0.876	
Flt Protected	0.950			0.950				0.971			0.998	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1740	0	0	1629	0
Flt Permitted	0.950			0.950				0.971			0.998	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1740	0	0	1629	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		742			1291			136			261	
Travel Time (s)		9.2			16.0			3.1			5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	551	18	8	679	7	15	3	7	1	1	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	551	18	8	679	7	0	25	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

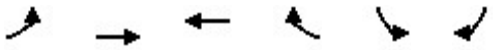
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	441	0	0	560	0	0
Future Volume (vph)	441	0	0	560	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	0	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	1033			402	1733	
Travel Time (s)	12.8			5.0	39.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	0	0	609	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	479	0	0	609	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

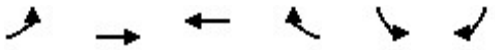
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	488	0	0	611	0	0
Future Volume (vph)	488	0	0	611	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	0	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	402			2307	1708	
Travel Time (s)	5.0			28.6	38.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	530	0	0	664	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	0	0	664	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	482	610	10	0	28
Future Volume (vph)	0	482	610	10	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.865	
Flt Protected						
Satd. Flow (prot)	0	3539	3532	0	1611	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3532	0	1611	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		1291	679		219	
Travel Time (s)		16.0	8.4		5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	524	663	11	0	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	524	674	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.2%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	486	595	0	0	0
Future Volume (vph)	0	486	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			300	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	3539	3539	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	3539	3539	1863	1863	0
Link Speed (mph)		55	55		30	
Link Distance (ft)		2762	941		716	
Travel Time (s)		34.2	11.7		16.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	647	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	528	647	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

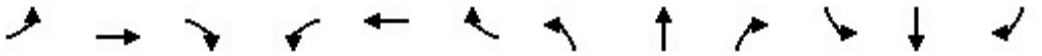
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			300
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	0	0	3539	1863
Flt Permitted						
Satd. Flow (perm)	0	1863	0	0	3539	1863
Link Speed (mph)	30			65	65	
Link Distance (ft)	108			1375	1488	
Travel Time (s)	2.5			14.4	15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	100			108	2491	
Travel Time (s)	2.3			2.5	56.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Free	Yield	

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

Proposed PM Signal Report - West Segment

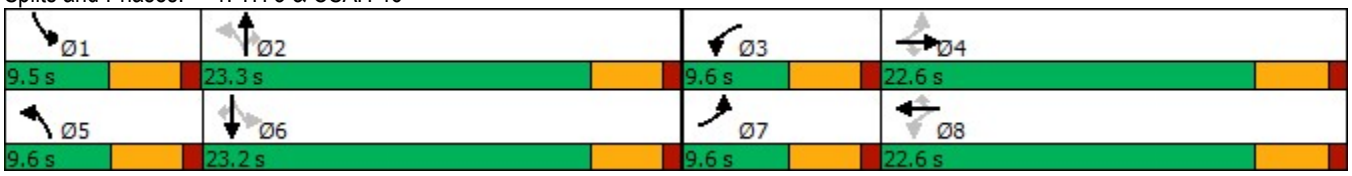


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Future Volume (vph)	205	410	210	176	540	89	154	236	107	53	566	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		300	300		300
Storage Lanes	2		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.284			0.412			0.301			0.593		
Satd. Flow (perm)	1026	3539	1583	767	3539	1583	561	3539	1583	1105	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			176			176			222
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3477			555			1400			1400	
Travel Time (s)		43.1			6.9			17.4			17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	446	228	191	587	97	167	257	116	58	615	222
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.6	22.6	22.6	9.6	22.6	22.6	9.6	23.3	23.3	9.5	23.2	23.2
Total Split (%)	14.8%	34.8%	34.8%	14.8%	34.8%	34.8%	14.8%	35.8%	35.8%	14.6%	35.7%	35.7%
Maximum Green (s)	5.1	18.1	18.1	5.1	18.1	18.1	5.1	18.8	18.8	5.0	18.7	18.7
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	20.4	15.3	15.3	20.4	15.3	15.3	23.8	20.9	20.9	22.8	19.0	19.0
Actuated g/C Ratio	0.34	0.25	0.25	0.34	0.25	0.25	0.39	0.35	0.35	0.38	0.31	0.31
v/c Ratio	0.40	0.50	0.40	0.55	0.66	0.18	0.52	0.21	0.17	0.12	0.55	0.34
Control Delay	14.1	21.7	5.5	20.0	24.4	1.3	18.1	16.4	1.9	11.3	20.7	4.8
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	14.1	21.7	5.5	20.0	24.4	1.3	18.1	16.4	1.9	11.3	20.7	4.8
LOS	B	C	A	C	C	A	B	B	A	B	C	A
Approach Delay		15.7			20.9			13.8			16.2	
Approach LOS		B			C			B			B	

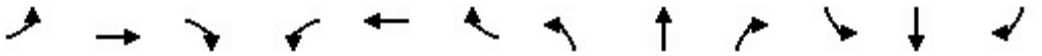
Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 60.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: TH 3 & CSAH 46



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Future Volume (vph)	6	471	5	2	599	0	6	4	0	15	25	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	300		0	0		200	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.967	
Flt Protected	0.950			0.950				0.969			0.986	
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1805	1863	0	1776	0
Flt Permitted	0.950			0.950				0.969			0.986	
Satd. Flow (perm)	1770	3539	1583	1770	3539	0	0	1805	1863	0	1776	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		679			3715			1182			1405	
Travel Time (s)		8.4			46.1			26.9			31.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	512	5	2	651	0	7	4	0	16	27	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	512	5	2	651	0	0	11	0	0	57	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		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	486	0	0	607	0	0	0	0	0	0	0
Future Volume (vph)	0	486	0	0	607	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	350		300	200		200	150		150
Storage Lanes	1		1	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	1863	3539	1863	1863	3539	1863	0	1863	0	1863	0	1863
Flt Permitted												
Satd. Flow (perm)	1863	3539	1863	1863	3539	1863	0	1863	0	1863	0	1863
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3715			1033			1625			1295	
Travel Time (s)		46.1			12.8			36.9			29.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	660	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		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)	24	455	0	0	601	0	0	0	0	14	0	5
Future Volume (vph)	24	455	0	0	601	0	0	0	0	14	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		300	300		300	0		0	0		375
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1770	3539	1863	1863	3539	1863	0	1863	0	0	1770	1583
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1770	3539	1863	1863	3539	1863	0	1863	0	0	1770	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2307			2762			1820			1056	
Travel Time (s)		28.6			34.2			41.4			24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	495	0	0	653	0	0	0	0	15	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	495	0	0	653	0	0	0	0	0	15	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

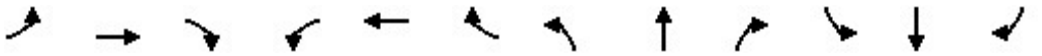
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	454	0	0	607	0	0
Future Volume (vph)	454	0	0	607	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	200		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	1863	1863	3539	1863	0
Flt Permitted						
Satd. Flow (perm)	3539	1863	1863	3539	1863	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	941			1125	1618	
Travel Time (s)	11.7			13.9	36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	493	0	0	660	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	493	0	0	660	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.1%		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	494	0	0	575	0	0	0	0	0	0	29
Future Volume (vph)	0	494	0	0	575	0	0	0	0	0	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	275		275	0		200	200		200
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												0.850
Flt Protected												
Satd. Flow (prot)	1863	3539	1863	1863	3539	1863	0	1863	1863	1863	1863	1583
Flt Permitted												
Satd. Flow (perm)	1863	3539	1863	1863	3539	1863	0	1863	1863	1863	1863	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		600			2893			1327			1271	
Travel Time (s)		7.4			35.9			30.2			28.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	537	0	0	625	0	0	0	0	0	0	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.9%		ICU Level of Service A	
Analysis Period (min) 15			

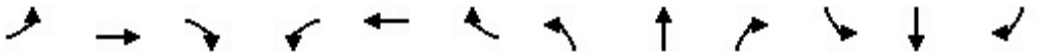


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Future Volume (vph)	0	459	15	6	549	0	13	6	24	6	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		350	0		250	200		200	200		200
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.925			0.915	
Flt Protected					0.999			0.985			0.982	
Satd. Flow (prot)	0	3522	0	0	3536	0	0	1697	0	0	1674	0
Flt Permitted					0.999			0.985			0.982	
Satd. Flow (perm)	0	3522	0	0	3536	0	0	1697	0	0	1674	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		2893			5278			1150			1474	
Travel Time (s)		35.9			65.4			26.1			33.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	499	16	7	597	0	14	7	26	7	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	515	0	0	604	0	0	47	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			

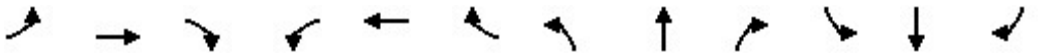
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	497	14	28	629	8	26
Future Volume (vph)	497	14	28	629	8	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		375	250		0	500
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	3539	1770	1583
Link Speed (mph)	55			55	30	
Link Distance (ft)	5278			838	1522	
Travel Time (s)	65.4			10.4	34.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	540	15	30	684	9	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	540	15	30	684	9	28
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	30.4%	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)	23	284	216	42	346	0	84	0	26	93	37	227
Future Volume (vph)	23	284	216	42	346	0	84	0	26	93	37	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		275	500		250	0		0	300		300
Storage Lanes	0		0	0		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.938							0.850			0.850
Flt Protected		0.998			0.995			0.950			0.965	
Satd. Flow (prot)	0	3313	0	0	3522	0	0	1770	1583	0	1798	1583
Flt Permitted		0.998			0.995			0.950			0.965	
Satd. Flow (perm)	0	3313	0	0	3522	0	0	1770	1583	0	1798	1583
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		838			1157			384			1048	
Travel Time (s)		10.4			14.3			8.7			23.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	309	235	46	376	0	91	0	28	101	40	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	569	0	0	422	0	0	91	28	0	141	247
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 50.0%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Future Volume (vph)	88	302	13	39	187	36	182	44	0	0	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		300	350		350	400		400	225		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.979						0.850	
Flt Protected		0.989			0.993			0.961				
Satd. Flow (prot)	0	3483	0	0	3441	0	0	1790	1863	1863	1583	0
Flt Permitted		0.989			0.993			0.961				
Satd. Flow (perm)	0	3483	0	0	3441	0	0	1790	1863	1863	1583	0
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		1157			800			479			872	
Travel Time (s)		14.3			9.9			10.9			19.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	328	14	42	203	39	198	48	0	0	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	438	0	0	284	0	0	246	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	355	0	52
Future Volume (vph)	0	0	0	355	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	631			563	479	
Travel Time (s)	14.3			12.8	10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	386	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	386	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.0%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	52
Future Volume (vph)	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3539	0	0	0	0	1611
Flt Permitted						
Satd. Flow (perm)	3539	0	0	0	0	1611
Link Speed (mph)	65			65	30	
Link Distance (ft)	1038			1563	631	
Travel Time (s)	10.9			16.4	14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	110	0	0	0	295
Future Volume (vph)	0	110	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	0	0	1863
Flt Permitted						
Satd. Flow (perm)	0	1611	0	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	652		1586			384
Travel Time (s)	14.8		36.0			8.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	120	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	120	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	295
Future Volume (vph)	0	0	0	0	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	0	3539	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	0	3539	0	0	1611
Link Speed (mph)		65	65		30	
Link Distance (ft)		1016	1468		1586	
Travel Time (s)		10.7	15.4		36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

1: TH 3 & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	217	417	201	184	533	83	154	232	113	57	565	216

1: TH 3 & CSAH 46 Performance by movement

Movement	All
Vehicles Entered	2972

2: Biscayne Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	All
Vehicles Entered	6	481	6	2	598	5	3	15	23	12	1151

3: Station Trail & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	497	599	1096

9: Akron Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	WBT	SBL	SBR	All
Vehicles Entered	19	484	589	15	5	1112

10: Asher Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	502	593	1095

11: Barbara Ave E & CSAH 46 Performance by movement

Movement	EBT	WBT	SBR	All
Vehicles Entered	514	562	25	1101

12: Blaine Ave & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBR	All
Vehicles Entered	498	15	8	622	12	5	24	5	12	1201

13: Clayton Ave E & CSAH 46 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Vehicles Entered	508	16	26	621	9	29	1209

14: TH 52 SB Ramp/Clayton Ave & CSAH 46 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	All
Vehicles Entered	23	288	229	43	336	86	2	29	84	35	223	1378

15: CSAH 46 & Clayton Ave E Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBR	All
Vehicles Entered	82	302	16	40	181	36	181	165	17	1020

18: TH 52 NB Off Ramp Performance by movement

Movement	NBT	SBT	SBR	All
Vehicles Entered	346	1	56	403

19: TH 52 NB Performance by movement

Movement	NWR	All
Vehicles Entered	56	56

21: TH 52 SB On Ramp/TH 52 SB Ramp & TH 52 SB Off Ramp Performance by movement

Movement	WBR	SBT	All
Vehicles Entered	115	308	423

22: TH 52 SB On Ramp & TH 52 NB Performance by movement

Movement	SER	All
Vehicles Entered	307	307

34: TH 52 NB Performance by movement

Movement	NBR	All
Vehicles Entered	217	217

37: TH 52 SB Off Ramp & TH 52 NB/TH 52 SB Performance by movement

Movement	SBR	All
Vehicles Entered	116	116

38: CSAH 46 & Fr Rd W Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	585	644	24	114	1367

39: CSAH 46 & Fr Rd M Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicles Entered	11	515	19	5	619	7	15	3	8	0	1	23

39: CSAH 46 & Fr Rd M Performance by movement

Movement	All
Vehicles Entered	1226

40: Alverno Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	495	600	1095

41: Albata Ave & CSAH 46 Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	503	598	1101

44: CSAH 46 & Fr Rd E Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Vehicles Entered	524	602	11	27	1164

48: CSAH 46 & Angus Ave Performance by movement

Movement	EBT	WBT	All
Vehicles Entered	502	591	1093

56: Clayton Ave E Performance by movement

Movement	NBT	All
Vehicles Entered	23	23

Total Network Performance

Vehicles Entered	3881

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 46	**District**	Metro	**County**	Dakota
Begin RP		**End RP**		**Miles**	
Location	from TH 3 to TH 52				

A

Proposed Work	Reconstruct CSAH 46 as a 4-lane divided roadway. Construct roundabouts at TH 52 ramps.		
Project Cost*	$40,000,000	**Installation Year**	2024
Project Service Life	20 years	**Traffic Growth Factor**	0.8%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.55	**Fatal (K) Crashes**	**Reference**	CMF ID 7570, 7571 - CMF Clearinghouse
0.55	**Serious Injury (A) Crashes**		
0.55	**Moderate Injury (B) Crashes**	**Crash Type**	CSAH 46 Corridor (All Types)
0.55	**Possible Injury (C) Crashes**		
0.69	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

0.18	**Fatal (K) Crashes**	**Reference**	CMF ID 227, 228 - CMF Clearinghouse
0.18	**Serious Injury (A) Crashes**		
0.18	**Moderate Injury (B) Crashes**	**Crash Type**	TH 52 Ramps (All Types)
0.18	**Possible Injury (C) Crashes**		
0.56	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2018	**End Date**	12/31/2020	3 years
Data Source	MnCMAT2			

Crash Severity	CSAH 46 Corridor (All Types)	TH 52 Ramps (All Types)
K crashes	1	0
A crashes	2	0
B crashes	7	4
C crashes	9	4
PDO crashes	34	12

F. Benefit-Cost Calculation

$26,267,891	**Benefit (present value)**
$40,000,000	**Cost**

B/C Ratio = 0.66

Proposed project expected to reduce 11 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

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

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

Real Discount Rate:	0.7%	**Revised**
Traffic Growth Rate:	0.8%	**Revised**
Project Service Life:	20 years	**Revised**

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.45	0.15	$225,500
A crashes	0.90	0.30	$225,500
B crashes	6.44	2.15	$493,503
C crashes	7.34	2.45	$293,560
PDO crashes	15.79	5.26	$68,406
			$1,306,469

H. Amortized Benefit

Year	Crash Benefits	Present Value
2024	$1,306,469	$1,306,469
2025	$1,316,346	$1,307,196
2026	$1,326,298	$1,307,923
2027	$1,336,325	$1,308,650
2028	$1,346,427	$1,309,378
2029	$1,356,606	$1,310,106
2030	$1,366,862	$1,310,835
2031	$1,377,196	$1,311,564
2032	$1,387,607	$1,312,293
2033	$1,398,098	$1,313,023
2034	$1,408,667	$1,313,753
2035	$1,419,317	$1,314,483
2036	$1,430,047	$1,315,214
2037	$1,440,858	$1,315,946
2038	$1,451,751	$1,316,678
2039	$1,462,726	$1,317,410
2040	$1,473,784	$1,318,143
2041	$1,484,926	$1,318,876
2042	$1,496,152	$1,319,609
2043	$1,507,463	$1,320,343
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $26,267,891

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

Crash Listing

Table 1: Crashes on CSAH 46 corridor, from TH 3 to TH 52 east ramp intersection

Incident Number	Crash Severity	Basic Type
673771	PDO	Rear End
674788	PDO	Single Vehicle Other
676572	PDO	Single Vehicle Other
684695	C	Sideswipe Opposing Direction
698479	PDO	Single Vehicle Other
734775	PDO	Sideswipe Same Direction
736153	PDO	Rear End
742563	PDO	Other
744217	PDO	Single Vehicle Run-Off-Road
744689	B	Angle
749689	PDO	Sideswipe Same Direction
753672	C	Angle
756617	PDO	Rear End
757429	B	Other
758120	PDO	Single Vehicle Other
759334	B	Bicycle
760335	PDO	Single Vehicle Other
761217	PDO	Single Vehicle Other
766709	PDO	Single Vehicle Other
767246	PDO	Sideswipe Same Direction
773541	PDO	Other
777606	PDO	Single Vehicle Other
780340	PDO	Single Vehicle Other
782846	PDO	Single Vehicle Run-Off-Road
800162	K	Head On
805140	PDO	Single Vehicle Other
805864	B	Single Vehicle Run-Off-Road
812490	PDO	Rear End
812808	PDO	Sideswipe Same Direction
819931	PDO	Single Vehicle Other
834719	C	Angle
836739	A	Angle
841200	PDO	Sideswipe Same Direction
842910	A	Single Vehicle Other
845486	C	Angle
847624	PDO	Angle
862344	B	**Sideswipe Opposing Direction**
862554	PDO	**Left Turn**
862911	PDO	Single Vehicle Other
872319	C	Angle
873865	PDO	Angle

874235	PDO	Single Vehicle Other
892384	PDO	Angle
894369	PDO	Angle
895220	PDO	Single Vehicle Other
895685	B	**Angle**
899215	B	Sideswipe Same Direction
910060	C	Sideswipe Same Direction
914072	PDO	Sideswipe Opposing Direction
932693	B	Angle
933520	C	Sideswipe Same Direction
942085	B	Angle
943451	PDO	Sideswipe Opposing Direction
968683	C	Rear End
971571	PDO	Rear End
975594	C	Single Vehicle Other
976079	PDO	Single Vehicle Other
980541	PDO	Single Vehicle Other
980605	C	Angle

Table 2: Crashes at TH 52 & CSAH 46 Ramp Intersections

Incident Number	Crash Severity	Basic Type
676300	B	Sideswipe Opposing Direction
695129	B	**Angle**
730967	C	Other
735954	PDO	Other
736905	PDO	Rear End
741693	C	Other
746067	C	Angle
760095	PDO	Sideswipe Same Direction
761300	PDO	Other
762463	PDO	Other
799604	PDO	Other
816861	PDO	Sideswipe Same Direction
819994	PDO	Sideswipe Same Direction
835740	PDO	Rear End

CMF COMPARISON

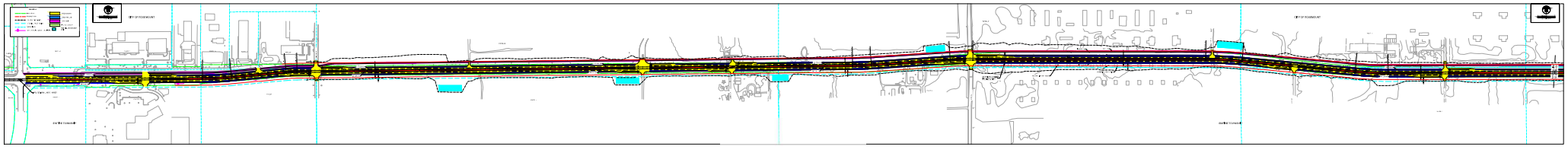
Below you will find comparisons for the CMFs you chose.
Please note that the rows ***highlighted and bold/italic*** contain the differences in the selected CMFs.

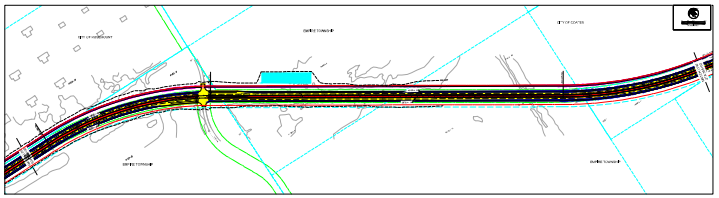
Countermeasure Name	Convert 2 lane roadway to 4 lane divided roadway	Convert 2 lane roadway to 4 lane divided roadway	Convert 2 lane roadway to 4 divided roadway
CMF ID	7569	7570	7571
CMF	0.712	0.691	0.549
Study Reference	AHMED ET AL., 2015	AHMED ET AL., 2015	AHMED ET AL., 2015
Unadjusted Standard Error CMF	***0.076***	***0.079***	***0.082***
CMFunction			
Star Rating	★★★★☆	★★★★☆	★★★★☆
Rating Score Total	125	125	125
Crash Type	All	All	All
Crash Severity	***All***	***Property damage only (PDO)***	***Fatal,Serious injury,Minor***
Crash Time of Day	All	All	All
Area Type	Rural	Rural	Rural
Road Division Type	Undivided	Undivided	Undivided
Road Type	Not specified	Not specified	Not specified
Number of Lanes	2	2	2
Intersection Type			
Intersection Geometry			
Traffic Control			
Speed Limit			
Study Type	2	2	2
Years From	2002	2002	2002
Years To	2012	2012	2012
Traffic Volume Unit	Annual Average Daily Traffic (AADT)	Annual Average Daily Traffic (AADT)	Annual Average Daily Traff (AADT)
Min Traffic Volume			
Max Traffic Volume			
Min Major Rd Volume			
Max Major Rd Volume			
Min Minor Rd Volume			
Max Minor Rd Volume			
Avg Traffic Volume	9539	9539	9539
Avg Major Rd Volume			
Avg Minor Rd Volume			
State of Origin	FL	FL	FL
Municipality			
Country	USA	USA	USA
Comments			

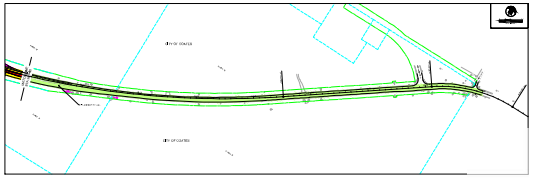
CMF COMPARISON

Below you will find comparisons for the CMFs you chose.
Please note that the rows ***highlighted and bold/italic*** contain the differences in the selected CMFs.

Countermeasure Name	Convert intersection with minor-road stop control to modern roundabout	Convert intersection with minor-road stop control to modern roundabout	Convert intersection with minor-road stop control to modern roundabout	Convert intersection with minor-road stop control to modern roundabout
CMF ID	227	228	229	230
CMF	0.56	0.18	0.29	0.13
Study Reference	RODEGERDTS ET AL., 2007	RODEGERDTS ET AL., 2007	RODEGERDTS ET AL., 2007	RODEGERDTS ET AL., 2007
Unadjusted Standard Error CMF	***0.04***	***0.03***	***0.04***	***0.03***
CMFunction				
Star Rating	★★★☆☆	★★★☆☆	★★★☆☆	★★★☆☆
Rating Score Total	***90***	***90***	***85***	***80***
Crash Type	All	All	All	All
Crash Severity	***All***	***Serious Injury,Minor Injury***	***All***	***Serious Injury,Minor Injury***
Crash Time of Day				
Area Type	***All***	***All***	***Rural***	***Rural***
Road Division Type				
Road Type	Not Specified	Not Specified	Not Specified	Not Specified
Number of Lanes	***1 or 2***	***1 or 2***	***1***	***1***
Intersection Type	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)	Roadway/roadway (not interchange related)
Intersection Geometry	4-leg	4-leg	4-leg	4-leg
Traffic Control	Stop-controlled	Stop-controlled	Stop-controlled	Stop-controlled
Speed Limit				
Study Type	2	2	2	2
Years From				
Years To				
Traffic Volume Unit	Unit Unknown	Unit Unknown	Unit Unknown	Unit Unknown
Min Traffic Volume				
Max Traffic Volume				
Min Major Rd Volume				
Max Major Rd Volume				
Min Minor Rd Volume				
Max Minor Rd Volume				
Avg Traffic Volume				
Avg Major Rd Volume				
Avg Minor Rd Volume				
State of Origin				
Municipality				
Country				
Comments	Countermeasure name changed from "convert two-way stop-controlled intersection to roundabout" to match HSM	Countermeasure name changed from "convert two-way stop-controlled intersection to roundabout" to match HSM	Countermeasure name changed from "convert two-way stop-controlled intersection to roundabout" to match HSM	Countermeasure name changed from "convert two-way stop-controlled intersection to roundabout" to match HSM







PROPOSED TYPICAL SECTION

CSAH 46 EXPANSION
PRELIMINARY DESIGN
APRIL 14, 2022

Attachment A

County State Aid Highway 46 Expansion

Applicant: Dakota County

Project Location: CSAH 46 from TH 3 through the CSAH 46/TH 52 interchange to CR 48, cities of Coates and Rosemount and Empire Township, MN

Project Costs:

- Total construction cost: $40,000,000
- Requested Award Amount/Match Amount: $10,000,000 / $30,000,000 (CSAH, Sales & Use Tax, Local)

Project Description

In an effort to plan for continued safety and mobility along the CSAH 46 corridor within the cities of Coates and Rosemount and Empire Township. Dakota County, the cities of Coates and Rosemount, and Empire Township partnered on preliminary design of the CSAH 46 expansion to a divided 4-lane from TH 3 through the CSAH 46/TH 52 interchange and pavement preservation work from the eastern ramp to County Road 48 (160th Street). The purpose of the project is to address deficiencies in capacity noted in 2019 as shown in the County's 2040 Transportation Plan and anticipated to worsen over the next 20 years. The CSAH 46 corridor is a regional east-west corridor that connects Lakeville to Hastings. The CSAH 46/TH 52 ramps have experienced right angle crashes and those crashed are anticipated to occur in the no build situation.

At CSAH 46/TH 52 Interchange, looking west

The proposed project will expand CSAH 46 to a divided 4-lane roadway with a raised center median, construct a trail along the north side of CSAH 46, construct a grade separated crossing of CSAH 46 for the future Vermillion Highlands Greenway, construct roundabouts at both of the CSAH 46/TH 52 interchange ramps, and implement access management strategies from TH 3 to the CSAH 46/TH 52 interchange. The project also includes pavement preservation work from the east ramp of the CSAH 46/TH 52 interchange to County Road 48 (160th Street).

Project Benefits

The expansion of CSAH 46 will provide several benefits to this east-west regional corridor and the surrounding community. The proposed project will:

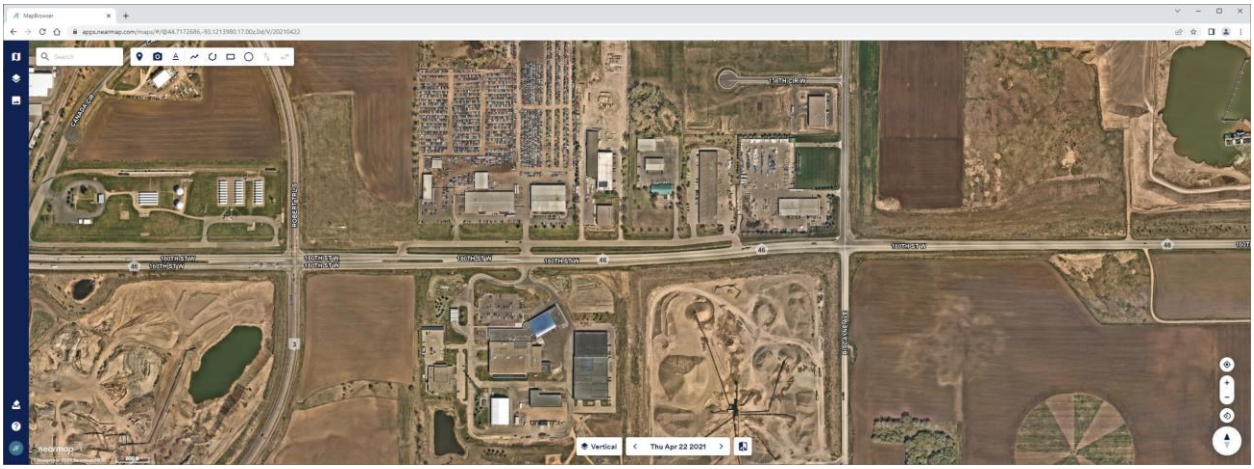
- Improve safety and mobility for all users
- Reconstruct the CSAH 46/TH 52 interchange ramps into roundabouts to improve safety and reduce potential right angle crashes
- Accommodate future increases in traffic including freight vehicles
- Provide safe, equitable non-motorized facilities that connect users to local and regional destinations
- Implement access management strategies
- Provide 4-lane CSAH 46 between CR 5 (west of I-35 in Lakeville) to TH 52 in Coates

ATTACHMENT B

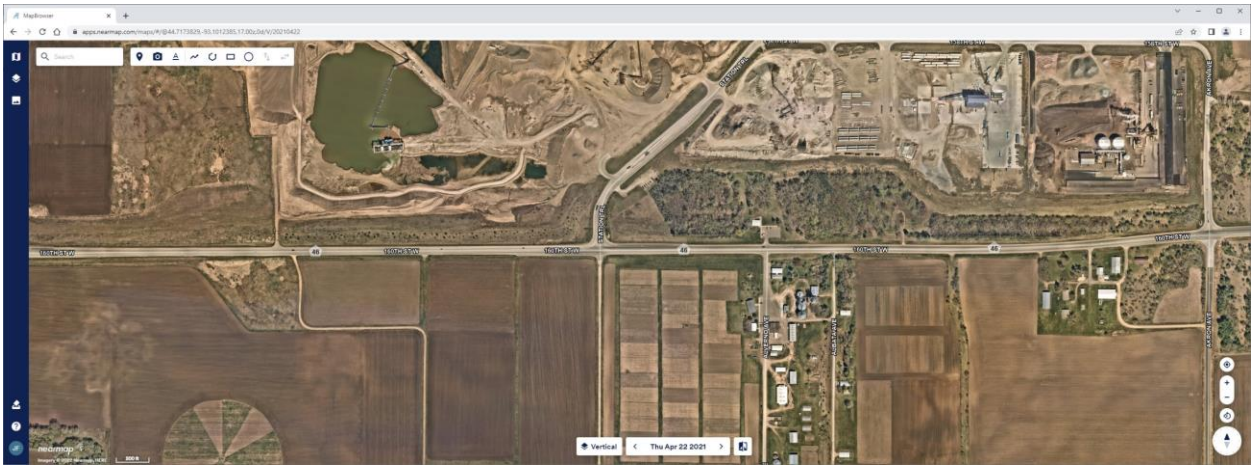
CSAH 46 Expansion Safety and Mobility Project

Existing Conditions Photos

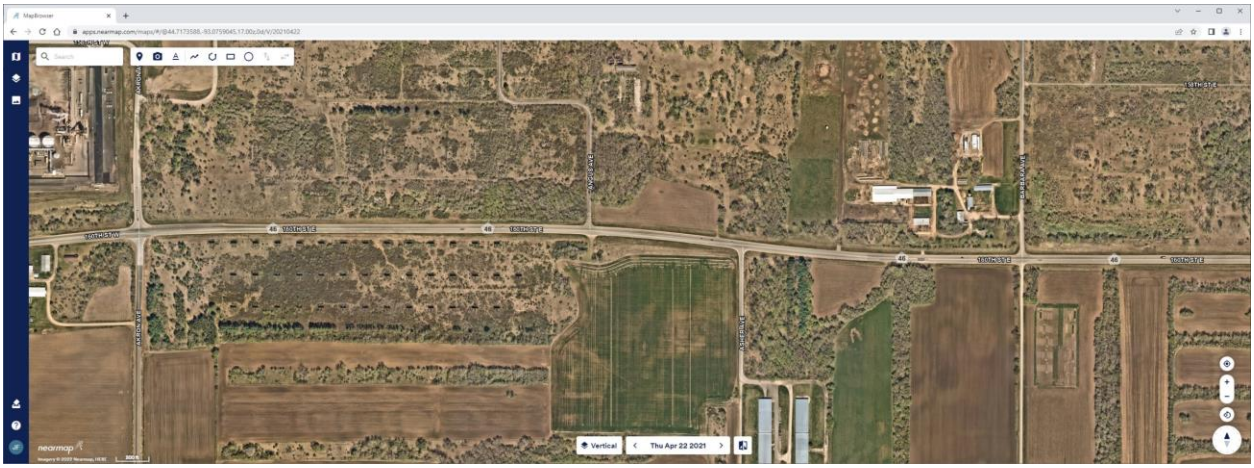
CSAH 46 Aerial – TH 3 to east of Biscayne Avenue



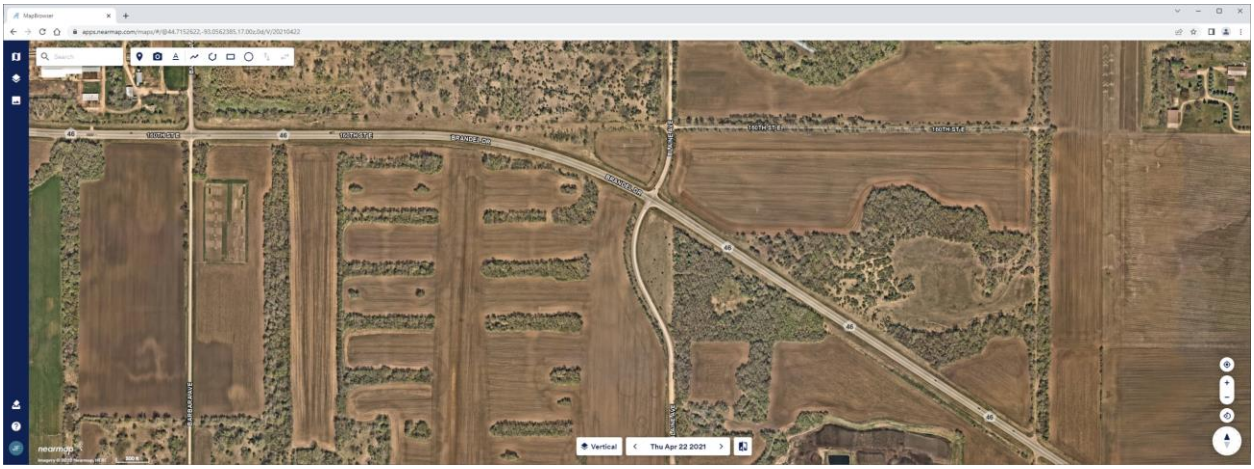
CSAH 46 Aerial – east of Biscayne Avenue to Akron Avenue



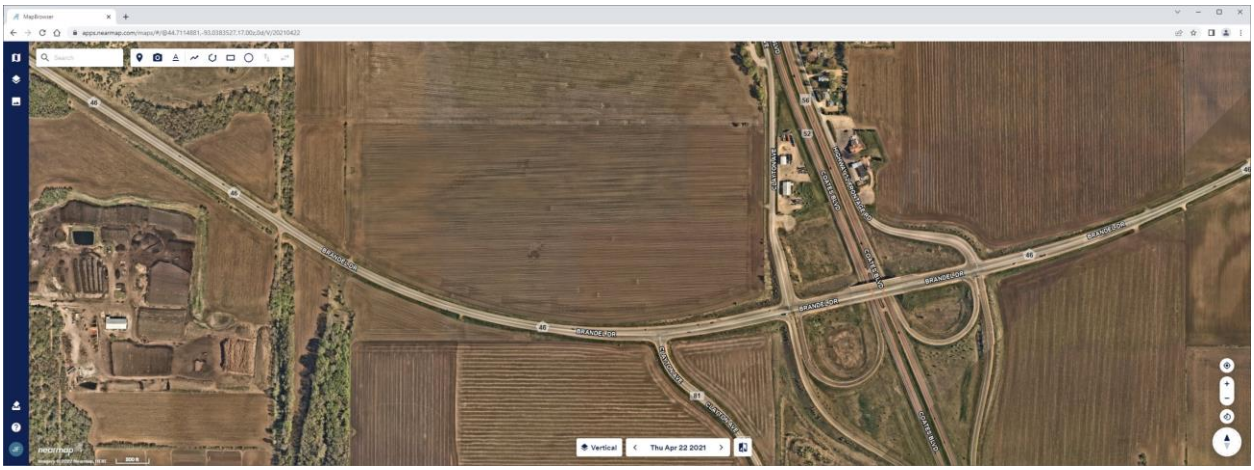
CSAH 46 Aerial – Akron Avenue to Barbara Avenue



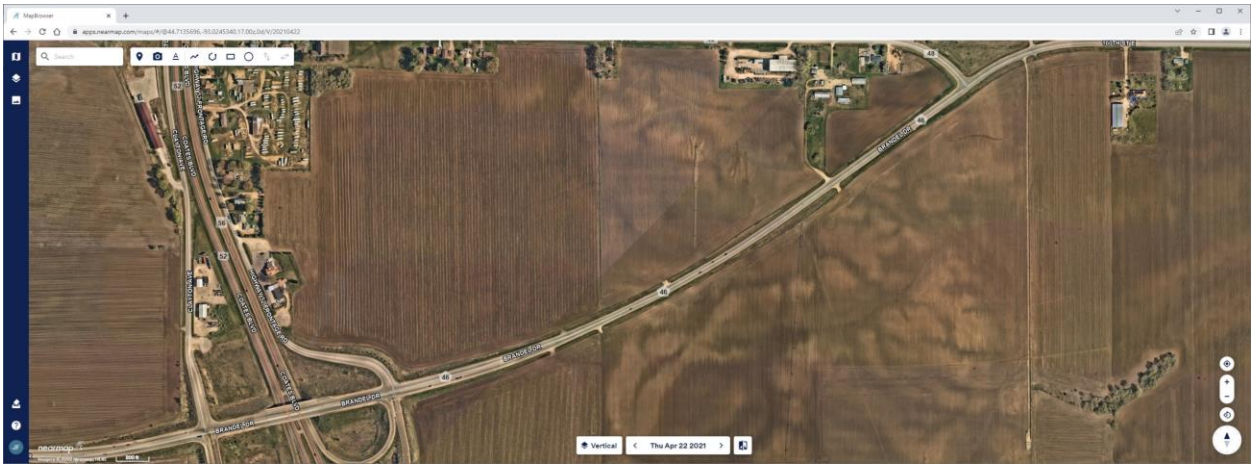
CSAH 46 Aerial – Barbara Avenue to tree line east of Blaine Avenue



CSAH 46 Aerial – Tree line east of Blaine Avenue to CSAH 46/TH 52 interchange



CSAH 46 Aerial – CSAH 46/TH 52 interchange to CR 48



CSAH 46 Photos

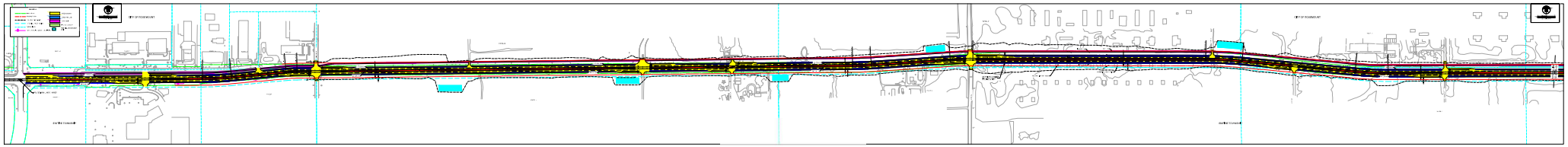
Looking west at CSAH 46/TH 52 interchange

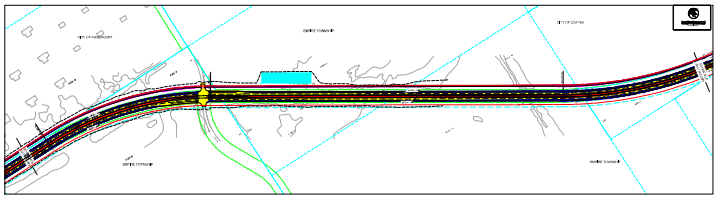
Looking west at entrance to Cemstone

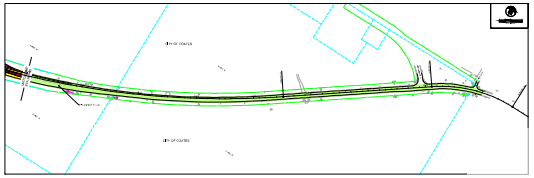
Looking west at Biscayne Avenue

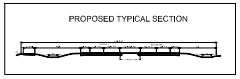
Looking west towards CSAH 46 and TH 3 traffic signal

ATTACHMENT C









CSAH 46 EXPANSION
PRELIMINARY DESIGN
APRIL 14, 2022

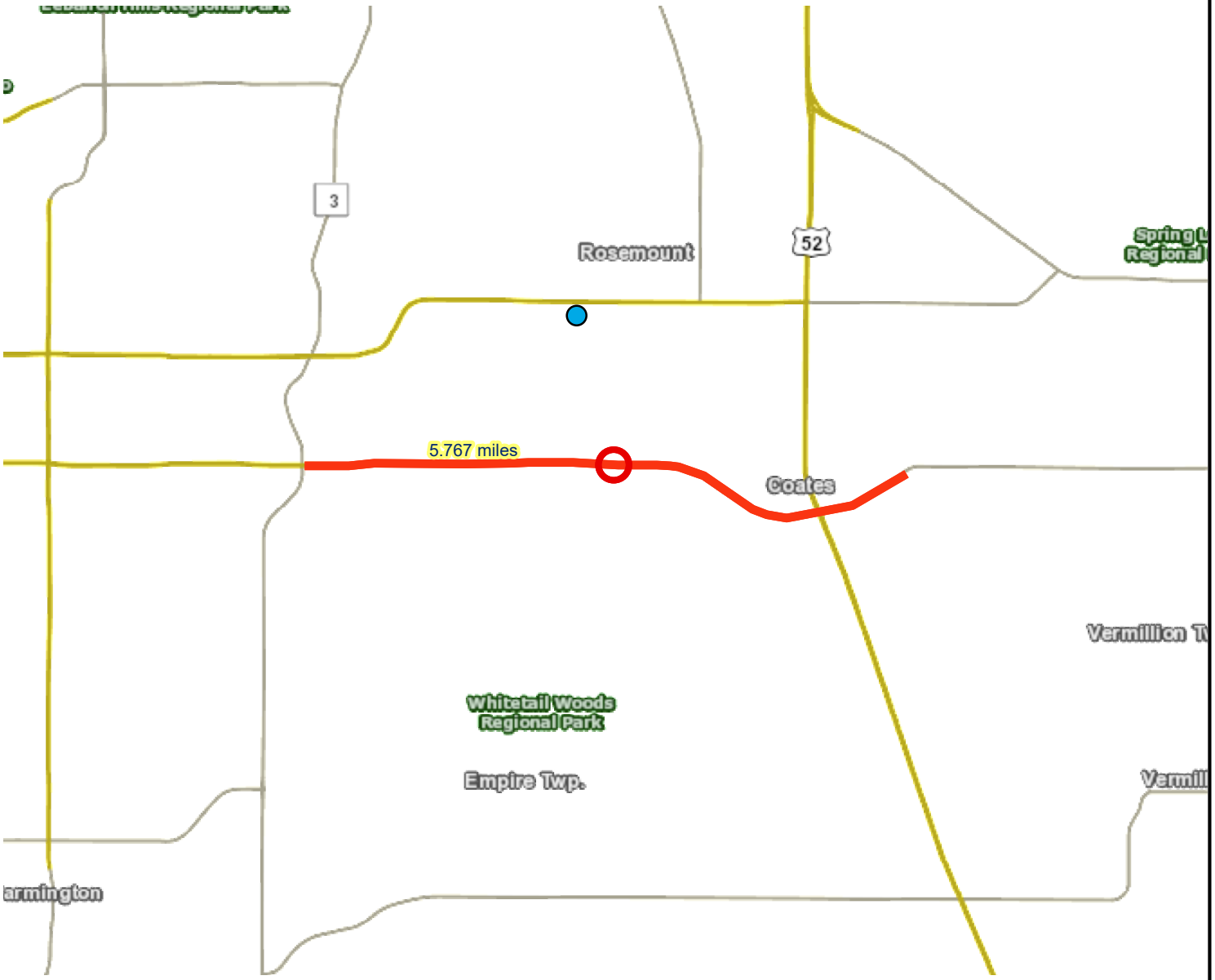
Regional Economy

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Empire Twp.
Population: 67
Employment: 40
Mfg and Dist Employment: 37
Rosemount
Population: 52
Employment: 1259
Mfg and Dist Employment: 88



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

0 0.75 1.5 3 4.5 6 Miles

Created: 4/4/2022
LandscapeRSA5

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

METROPOLITAN COUNCIL

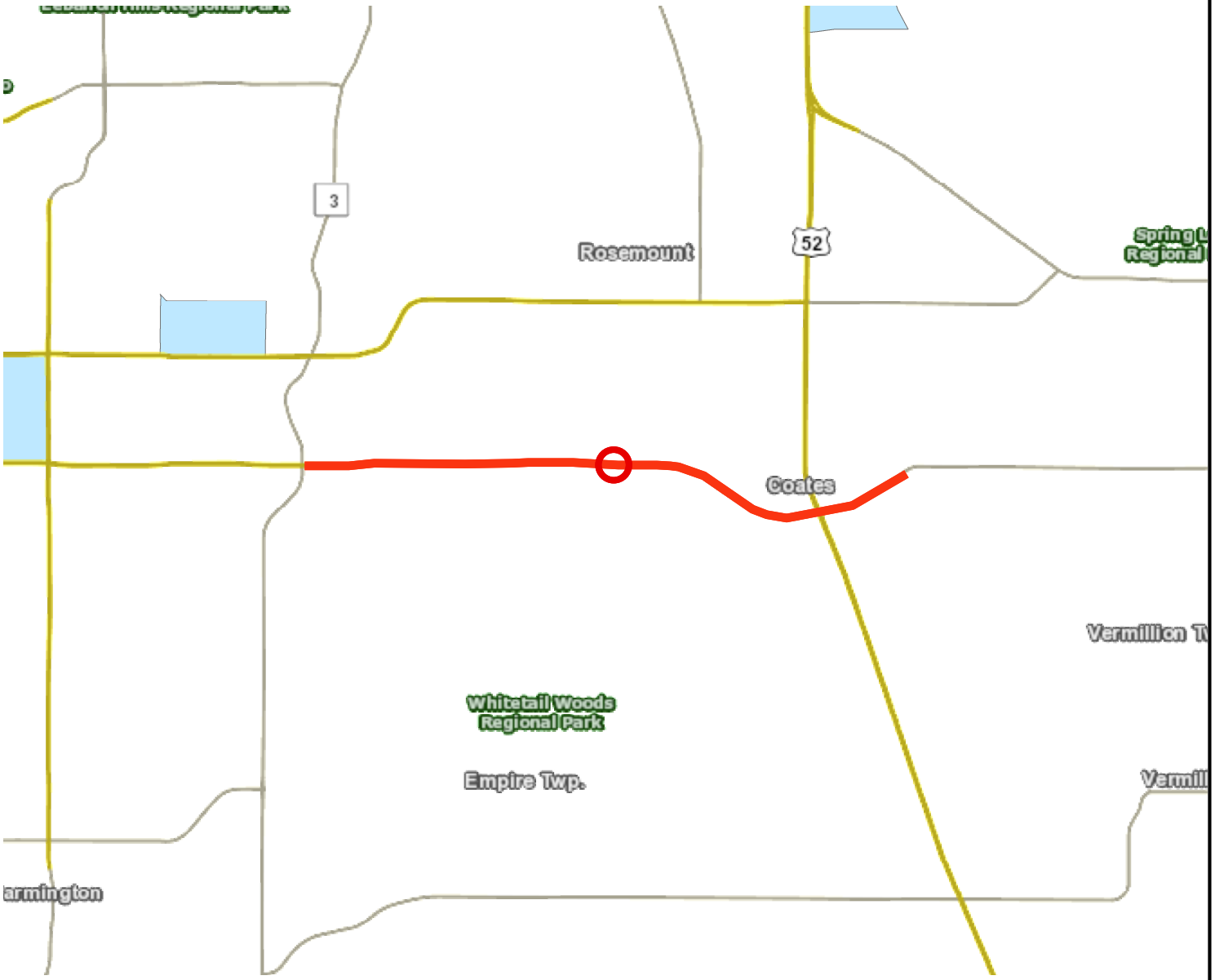
Socio-Economic Conditions

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 96

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



Points
Lines
Area of Concentrated Poverty
Regional Environmental Justice Area

0 0.75 1.5 3 4.5 6 Miles

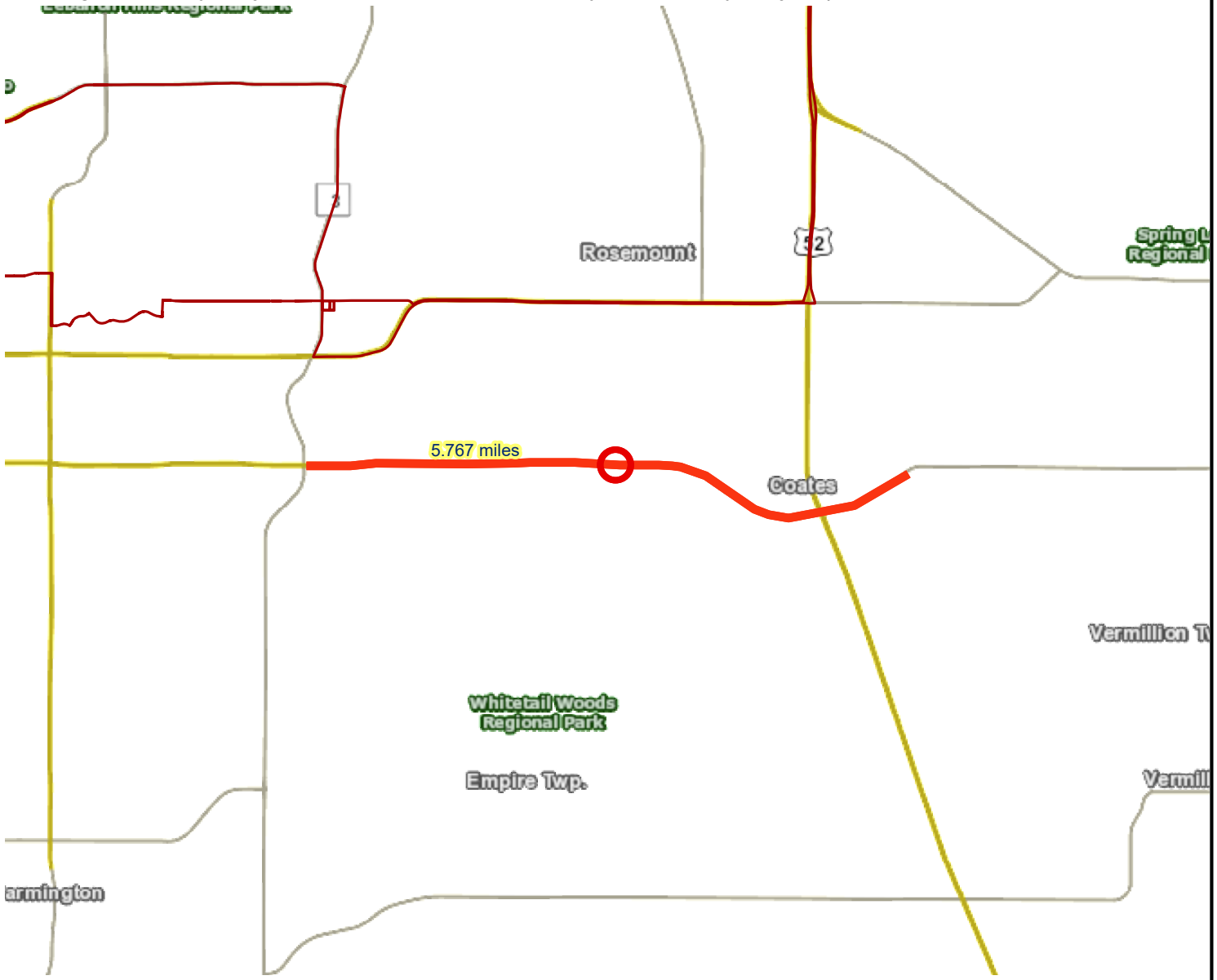
Created: 4/4/2022
LandscapeRSA2

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

METROPOLITAN COUNCIL

Transit Connections

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181



Results

Transit with a Direct Connection to project:
-- NONE --

**indicates Planned Alignments*

Transit Market areas: 5

Project Points — Transit Routes

Project

Project Area

0 0.75 1.5 3 4.5 6 Miles

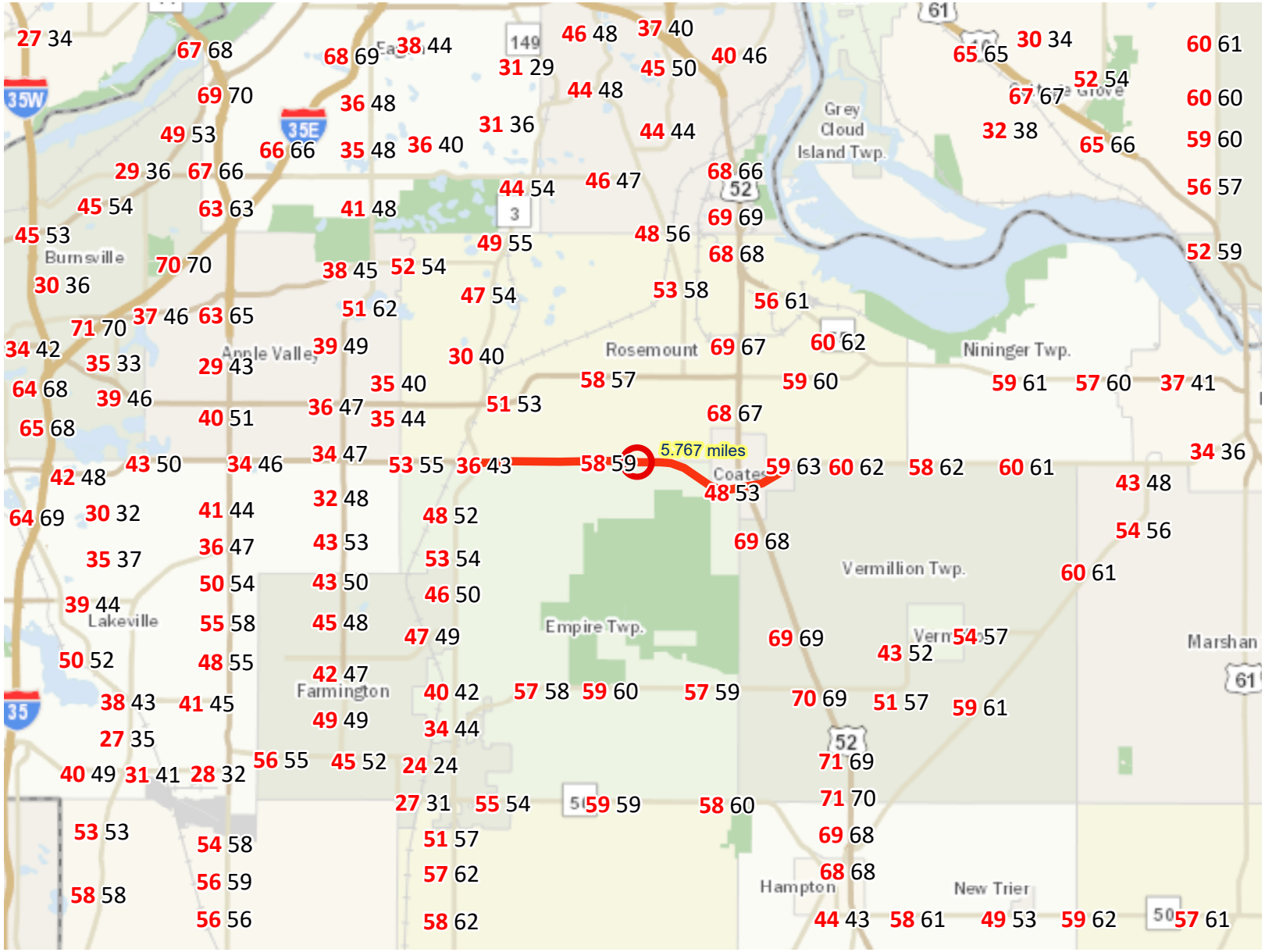
Created: 4/4/2022
LandscapeRSA3

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

METROPOLITAN COUNCIL

Level of Congestion

Strategic Capacity Project: CSAH 46 Expansion Safety and Mobility Project | Map ID: 1649074857181



Project Points

Project

0 1.5 3 6 9 12 Miles

Created: 4/4/2022
LandscapeRSA1

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

METROPOLITAN COUNCIL

ROSEMOUNT

MINNESOTA

April 14, 2022

Metropolitan Council
Transportation Advisory Board (TAB)
ATTN: Elaine Koutsoukos, TAB Coordinator
390 Robert Street North
Saint Paul, MN 55101

RE: Fixing America's Surface Transportation (FAST) Act Letter of Support for Dakota County's CSAH 46 (160th St./Brandel Dr.) expansion (Strategic Capacity) project

Dear Ms. Koutsoukos:

The City of Rosemount is supportive of Dakota County's application for federal funding for the expansion of CSAH 46 (160th Street/Brandel Drive) from its intersection with TH 3 (Robert Trail South) through the TH 52 interchange and pavement preservation work from the TH 52 interchange to 160th Street in Coates. The project is a joint effort with Dakota County and the City of Rosemount.

Dakota County, the cities of Coates and Rosemount and Empire Township have partnered on the expansion of CSAH 46 from TH 3 to the CSAH 46/TH 52 interchange in Coates. The project would reduce freight delay on the corridor, enhance existing businesses and future redevelopment, and improve safety of all users. The project would promote safety by improving the Highway 52 interchange intersections with CSAH 46 to reduce crashes, implementing access management along the corridor, extending rumble strips eastward, and constructing a multi-use path on the north side of the road between TH 3 and the CSAH 46/TH 52 interchange, and installing a grade-separated crossing for the Vermillion Highlands Greenway.

The County's design consultant, TKDA, has developed a draft layout and the City of Rosemount concurs with the draft layout. The City of Rosemount is aware of and understands the proposed project will affect Dakota County CSAH 46. Dakota County has jurisdiction over CSAH 46 and commits to operate and maintain this roadway for its design life.

The City of Rosemount supports this proposed project for federal funding and agrees to provide a financial commitment for the improvements directly related to CSAH 46 within the City of Rosemount, consistent with the current County cost participation policy.

We are pleased to offer our support to Dakota County for their Regional Solicitation application.

Sincerely,

Brian Erickson, P.E.
City Engineer
City of Rosemount

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

April 11, 2022

Gina Mitteco, Regional and Multimodal Transportation Manager
Dakota County

Re: MnDOT Letter for Dakota County's Metropolitan Council/Transportation Advisory Board 2022 Regional Solicitation funding request for projects

Gina,

This letter documents MnDOT Metro District's recognition for Dakota County to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2022 Regional Solicitation for the following projects.

As proposed, the projects have impacts to MnDOT right-of-way and MnDOT will allow Dakota County to seek improvements proposed in the applications. Details of any future maintenance agreement with the County will need to be determined during project development to define how the improvements will be maintained for the project's useful life if the project receives funding.

County State Aid Highway (CSAH) 46 from TH 3 to TH 52 in Coates, Empire Township and Rosemount. Project includes the reconstruction of CSAH 46 from an undivided 2-lane roadway to a divided 4-lane roadway, a trail along the north side from Trunk Highway (TH) 3, a grade separated crossing for the Vermillion Highlands Greenway, modifying the CSAH 46/TH 52 interchange bridge into 4-lane roadway, constructing roundabouts at both TH 52 ramps, pavement preservation work, and implementing access management strategies along the corridor.

CSAH 46 (160th Street) from 1,300 feet west of General Sieben Drive to Highway 61 in Hastings. The project includes the reconstruction of CSAH 46 from Pleasant Drive east to TH 61 from an undivided 2-lane roadway to a divided 2-lane roadway with turn lanes, constructing multi-use trail along the north side of CSAH 46 from General Sieben Drive to TH 61, constructing multi-use trail along the south side of CSAH 46 from Pleasant Drive to the Vermillion River Bridge (east of 31st Street), constructing single lane roundabouts at both Pleasant Drive and Pine Street, implementing access management strategies, and replacing the existing bridge over the Vermillion River (east of 31st Street).

CSAH 26 (Lone Oak Road) from TH 13 to Interstate 35E in Eagan The project will reconstruct CSAH 26 between TH 13 and Pilot Knob Road and include bicycle and pedestrian facilities and drainage improvements. The project will tie into the planned signal improvements at TH 13 and CSAH 26. The section between Pilot Knob Road and I-35E will include a mill and overlay and a 4 to 3 lane conversion.

CSAH 63 (Delaware Avenue) Trail from Marie Avenue to TH 149 (Dodd Road) in Mendota Heights and West St. Paul This project will construct a multiuse trail and sidewalk along CSAH 63 between TH 149 and Marie Avenue.

The trail and sidewalk will be included in a larger roadway reconstruction project. The project's new pedestrian and bicycle facilities will tie into the ADA facilities on TH 149.

River to River Greenway from TH 149 trail and TH 149 underpass in Mendota Heights—This project will construct an underpass of TH 149 north of TH 62.

Mendota to Lebanon Hills Greenway - TH 149 South in Mendota Heights—Project will construct a multiuse trail along TH 149 ROW connecting an existing trail along Mendota Heights Road to the existing Mendota to Lebanon Hills Greenway trail south of TH 62.

Veterans Memorial Greenway from TH 3 to CSAH 32 (Cliff Road) in Eagan and Inver Grove Heights – The project will create a grade separated pedestrian/bicycle bridge over TH 3 north of CSAH 32.

CSAH 63 (Delaware Avenue) Trail from TH 62 to Marie Avenue in Mendota Heights and West St. Paul – This project will construct a multi-use trail on the east side of Delaware between TH 62 and Marie Avenue to provide a safe pedestrian route and enhanced crossing of Delaware for students accessing Two Rivers High School. The trail will tie-in to MnDOT's ADA facilities at the intersection of TH 62 and Delaware.

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

If you have questions or require additional information at this time, please reach out to South Area Manager Ryan Wilson at ryan.wilson@state.mn.us or 651-234-4216.

Sincerely,

Michael Barnes

Digitally signed by Michael Barnes
Date: 2022.04.12 09:49:18 -05'00'

Michael Barnes, PE
Metro District Engineer

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

Thrive MSP 2040

TRANSPORTATION POLICY PLAN

Chapter 2: Transportation Strategies

2040

TRANSPORTATION POLICY PLAN

Chapter 2: Transportation Policy Plan Strategies

CONTENTS

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
A. Transportation System Stewardship *Goal Statement* *Sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.*	• Efficiently preserve and maintain the regional transportation system in a state of good repair. • Operate the regional transportation system to efficiently and cost-effectively connect people and freight to destinations	A1. Regional transportation partners will place the highest priority for transportation investments on strategically preserving, maintaining, and operating the transportation system.
		A2. Regional transportation partners should regularly review planned preservation and maintenance projects to identify cost-effective opportunities to incorporate improvements for safety, lower-cost congestion management and mitigation, transit, bicycle, and pedestrian facilities.
		A3. The Council and regional transit providers will use regional transit design guidelines and performance standards, as appropriate based on Transit Market Areas, to manage the transit network, to respond to demand, and balance performance and geographic coverage.
		A4. Airport sponsors will prepare a long-term comprehensive plan (LTCP) for each airport every five years and submit it to the Metropolitan Council for review to ensure that plans for preservation, management and improvement of infrastructure at each airport are consistent with the regional aviation system plan.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
B. Safety and Security *Goal Statement* *The regional transportation system is safe and secure for all users.*	• Reduce crashes and improve safety and security for all modes of passenger travel and freight transport. • Reduce the transportation system's vulnerability to natural and man-made incidents and threats.	B1. Regional transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, operation.
		B2. Regional transportation partners should work with local, state, and federal public safety officials, including emergency responders, to protect and strengthen the role of the regional transportation system in providing security and effective emergency response to serious incidents and threats.
		B3. Regional transportation partners should monitor and routinely analyze safety and security data by mode and severity to identify priorities and progress.
		B4. Regional transportation partners will support the state's vision of moving toward zero traffic fatalities and serious injuries, which includes supporting educational and enforcement programs to increase awareness of regional safety issues, shared responsibility, and safe behavior.
		B5. The Council and regional transit providers will provide transit police services and coordinate with public safety agencies to provide a collaborative approach to safety and security.
		B6. Regional transportation partners will use best practices to provide and improve facilities for safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system.
		B7. Airport sponsors and air service providers will provide facilities that are safe, secure and technologically current.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
C. Access to Destinations *Goal Statement* *People and businesses prosper by using a reliable, affordable, and efficient multimodal transportation system that connects them to destinations throughout the region and beyond.*	• Increase the availability of multimodal travel options, especially in congested highway corridors. • Increase travel time reliability and predictability for travel on highway and transit systems. • Ensure access to freight terminals such as river ports, airports, and intermodal rail yards. • Increase transit ridership and the share of trips taken using transit, bicycling and walking. • Improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations.	C1. Regional transportation partners will continue to work together to plan and implement transportation systems that are multimodal and provide connections between modes. The Council will prioritize regional projects that are multimodal and cost-effective and encourage investments to include appropriate provisions for bicycle and pedestrian travel.
		C2. Local units of government should provide a system of interconnected arterial roads, streets, bicycle facilities, and pedestrian facilities to meet local travel needs using Complete Streets principles.
		C3. The Council, working with MnDOT through their Enhancing Financial Effectiveness (EFE) efforts, and other relevant jurisdictions, will continue to maintain a Congestion Management Process for the region's principal arterials to meet federal requirements. The Congestion Management Process will incorporate and coordinate the various activities of MnDOT, transit providers, counties, cities and transportation management organizations to increase the multimodal efficiency and people-moving capacity of the National Highway System.
		C4. Regional transportation partners will promote multimodal travel options and alternatives to single-occupant vehicle travel and highway congestion through a variety of travel demand management initiatives, with a focus on major job, activity, and industrial and manufacturing concentrations on congested highway corridors and corridors served by regional transit service.
		C5. The Council will work with MnDOT and local governments to implement a system of MnPASS lanes and transit advantages that support fast, reliable alternatives to single-occupancy vehicle travel in congested highway corridors.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		C6. The Council will support an interagency approach to preserving right-of-way for future transportation projects that are consistent with the Transportation Policy Plan.
		C7. Regional transportation partners will manage and optimize the performance of the principal arterial system as measured by person throughput.
		C8. Regional transportation partners will prioritize all regional highway capital investments based on a project's expected contributions to achieving the outcomes, goals, and objectives identified in *Thrive MSP 2040* and the Transportation Policy Plan.
		C9. The Council will support investments in A-minor arterials that build, manage, or improve the system's ability to supplement the capacity of the principal arterial system and support access to the region's job, activity, and industrial and manufacturing concentrations.
		C10. Regional transportation partners will manage access to principal and A-minor arterials to preserve and enhance their safety and capacity. The Council will work with MnDOT to review interchange requests for the principal arterial system.
		C11. The Council and regional transit providers will expand and modernize transit service, facilities, systems, and technology, to meet growing demand, improve the customer experience, improve access to destinations, and maximize the efficiency of investments.
		C12. Regional transportation partners will invest in an expanded network of transitways that includes but is not limited to bus rapid transit, light rail, and commuter rail. Transitway investments will be prioritized based on factors that measure a project's expected contributions to achieving the outcomes, goals, and objectives identified in *Thrive MSP 2040* and the Transportation Policy Plan.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		C13. The Council will provide paratransit service complementary to the region's regular route transit system for individuals who are certified by the Council under the Americans with Disabilities Act (ADA).
		C14. The Council and regional transit providers will provide coordinated transit options, including general public dial-a-ride and vanpool subsidies, in areas of the region not served by regular-route transit. Service levels for these options will be based on available resources and needs.
		C15. Regional transportation partners should focus investments on completing Priority Regional Bicycle Transportation Corridors and on improving the larger Regional Bicycle Transportation Network.
		C16. Regional transportation partners should fund projects that provide for bicycle and pedestrian travel across or around physical barriers and/or improve continuity between jurisdictions.
		C17. Regional transportation partners will provide or encourage reliable, cost-effective, and accessible transportation choices that provide and enhance access to employment, housing, education, and social connections for pedestrians and people with disabilities.
		C18. The Council, MnDOT, regional railroad authorities, and railroad companies will pursue short- and long-term improvements to accommodate future freight and passenger rail demand.
		C19. The Council and MnDOT should work together with cities and counties to provide efficient connections from major freight terminals and facilities to the regional highway system, including the federally designated Primary Freight Network.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		C20. The Council and airport sponsors will maintain a system of reliever airports to augment the Minneapolis-Saint Paul International Airport that are accessible within reasonable travel times from all parts of the metropolitan area.
D. Competitive Economy *Goal Statement* *The regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.*	• Improve multimodal access to regional job concentrations identified in *Thrive MSP 2040*. • Invest in a multimodal transportation system to attract and retain businesses and residents. • Support the region's economic competitiveness through the efficient movement of freight.	D1. The Council and its transportation partners will identify and pursue the level of increased funding needed to create a multimodal transportation system that is safe, well-maintained, offers modal choices, manages and eases congestion, provides reliable access to jobs and opportunities, facilitates the shipping of freight, connects and enhances communities, and shares benefits and impacts equitably among all communities and users.
		D2. The Council will coordinate with other agencies planning and pursuing transportation investments that strengthen connections to other regions in Minnesota and the Upper Midwest, the nation, and world including intercity bus and passenger rail, highway corridors, air service, and freight infrastructure.
		D3. The Council and its partners will invest in regional transit and bicycle systems that improve connections to jobs and opportunity, promote economic development, and attract and retain businesses and workers in the region on the established transit corridors.
		D4. The Council, MnDOT, and local governments will invest in a transportation system that provides travel conditions that compete well with peer metropolitan areas.
		D5. The Council and MnDOT will work with transportation partners to identify the impacts of highway congestion on freight and identify cost-effective mitigation.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		D6. The Council, Metropolitan Airports Commission, MnDOT, and other agencies will work together to maintain a strong regional airport system, including maintaining the Minneapolis-Saint Paul International Airport as a major national and international passenger hub and reliever airports that serve business travel.
		D7. The Metropolitan Airports Commission should periodically update its airport economic impact studies and commercial air-service competition plan to determine facility and service improvements needed at the region's airports to foster a competitive regional economy.
E. Healthy Environment *Goal Statement* *The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments.*	• Reduce transportation-related air emissions. • Reduce impacts of transportation construction, operations, and use on the natural, cultural, and developed environments. • Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles.	E1. Regional transportation partners recognize the role of transportation choices in reducing emissions and will support state and regional goals for reducing greenhouse gas and air pollutant emissions. The Council will provide information and technical assistance to local governments in measuring and reducing transportation-related emissions.
		E2. The Council and MnDOT will consider reductions in transportation-related emissions of air pollutants and greenhouse gases when prioritizing transportation investments.
		E3. Regional transportation partners will plan and implement a transportation system that considers the needs of all potential users, including children, senior citizens, and persons with disabilities, and that promotes active lifestyles and cohesive communities. A special emphasis should be placed on promoting the environmental and health benefits of alternatives to single-occupancy vehicle travel.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
	• Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations.	E4. Regional transportation partners will protect, enhance and mitigate impacts on natural resources when planning, constructing, and operating transportation systems. This will include management of air and water quality and identification of priority natural resources through the Natural Resources Inventory developed by the Council and Minnesota Department of Natural Resources.
		E5. Transportation partners will protect, enhance and mitigate impacts on the cultural and built environments when planning, constructing, and operating transportation systems.
		E6. Regional transportation partners will use a variety of communication methods and eliminate barriers to foster public engagement in transportation planning that will include special efforts to engage members of historically underrepresented communities, including communities of color, low-income communities, and those with disabilities to ensure that their concerns and issues are considered in regional and local transportation decision making.
		E7. Regional transportation partners will avoid, minimize and mitigate disproportionately high and adverse impacts of transportation projects to the region's historically underrepresented communities, including communities of color, low-income communities, and those with disabilities.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
F. Leveraging Transportation Investments to Guide Land Use *Goal Statement* *The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.*	• Focus regional growth in areas that support the full range of multimodal travel. • Maintain adequate highway, riverfront, and rail-accessible land to meet existing and future demand for freight movement. • Encourage local land use design that integrates highways, streets, transit, walking, and bicycling. • Encourage communities, businesses and aviation interests to collaborate on limiting incompatible land uses that would limit the use of the region's airports.	F1. Local governments within the seven-county metropolitan area must prepare comprehensive plans that conform to the Transportation Policy Plan and should recognize the land use and transportation opportunities and challenges that correspond to *Thrive MSP 2040* planning areas. Local governments within the Metropolitan Urban Service Area should plan for their projected growth and stage their transportation infrastructure to accommodate the needs of that growth. Local governments in the Rural Service Area should plan for transportation systems and land use patterns that are compatible with the protection of agricultural uses and the need for future sewered development.
		F2. Local governments should plan for increased density and a diversification of uses in job concentrations, nodes along corridors, and local centers to maximize the effectiveness of the transportation system.
		F3. Metropolitan Council, MnDOT, and local governments will plan, build, operate, maintain, and rebuild an adequate system of interconnected highways and local roads.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		F4. Local governments will identify opportunities for and adopt guiding land use policies that support future growth around transit stations and near high-frequency transit service. The Council will work with local governments in this effort by providing technical assistance and coordinating the implementation of transit-oriented development. The Council will also prioritize investments in transit expansion in areas where infrastructure and development patterns to support a successful transit system are either in place or committed to in the planning or development process.
		F5. Local governments should lead planning efforts for land use in transit-oriented station areas, small-areas, or corridors, with the support of the Council and other stakeholders.
		F6. Local governments should adopt policies, develop partnerships, identify resources, and consider regulatory tools to support and specifically address the opportunities and challenges related to creating walkable, bikeable, transit-friendly places.
		F7. Local governments should include bicycle and pedestrian elements in local comprehensive plans.
		F8. Local governments should adopt comprehensive plans that include policies emphasizing identifying and improving roads best suited for carrying trucks while minimizing impacts such as noise and traffic to sensitive land uses.
		F9. Local governments should balance the needs of industrial, residential and recreational users when planning and implementing land uses along the navigable portions of the Mississippi River system to ensure sufficient access for existing and future barge transportation needs.

Table 2-1: Summary matrix of goals, objectives and associated strategies

Goal	Objectives	Strategies
		F10. Local governments should consider the role of railroads in promoting economic activity and identify an adequate supply of land in their comprehensive plans to meet existing and future demand for industrial uses requiring rail access.
		F11. Local governments located near all of the region's airports should address land use compatibility and air safety requirements in their comprehensive plans.
		F12. Communities affected by aircraft noise should incorporate the Land Use Compatibility Guidelines for Aircraft Noise into their local comprehensive plans and ordinances.
		F13. Local governments should minimize potential general airspace hazards by adopting federal and state regulations regarding airspace and notifying potential developers of the need to submit FAA form 7460-1 regarding structure height near an airport.

Dakota
COUNTY

Dakota County 2040 Transportation Plan

July 2021

Dakota COUNTY
transportation
we get you there

Table of Contents

Chapter 10

Implementation

Appendices

List of Figures

List of Tables

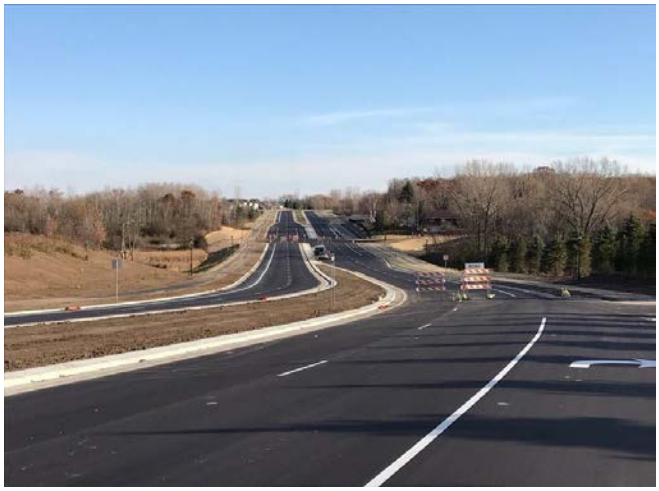
Chapter 9

Goal 6: Expansion of Transportation Corridors

The county will consider expansion of the existing highway system within available financial resources after investing in preservation, management, and replacement and modernization needs to address emerging capacity needs to provide for safe and efficient travel with minimal congestion.

Goal Purpose

This goal considers long term growth and associated traffic volume projections through the year 2040 to identify expansion needs on the county highway system. Investments within this Goal include increased capacity for county highway corridors including lane additions, new county highway alignments, future studies and interchanges and overpasses. The goal identifies estimated expansion needs to accommodate future traffic, defines measures and planned costs of investments, and measures for improvement and expansion of the system.



The need for expansion and major corridor improvements on the state trunk highway system is also discussed within this Goal. The ability to address these trunk highway needs not only improves the specific segments of the trunk highway system, but often has the potential for reduced traffic on the county highway system as well.

Between 2000 and 2018, Dakota County's population grew 18.9 percent, from 357,929 in 2000 to 425,423 in 2018. The county's population grew by 40,623, or 11 percent in the first decade of the 2000's to 398,552 in 2010 and slowed slightly to grow by 26,871, or 6.7 percent, between 2010 and 2018. Although, the growth rate is moderating, the county's population is estimated to increase to 514,050, or 21 percent, by 2040.

Vehicle miles traveled on all highways within the county prior to 2000 was growing at over five percent annually. However, in the years between 2000 and 2018 the vehicle miles traveled on all roads within the county leveled off to an average increase of 1.4 percent annually. This trend is similar to that on county highways which saw vehicle miles traveled increase from 858 million in 2000 to 1,098 million in 2018, or a growth rate of approximately or only about 1.6% per year. Current estimates derived from the County's Transportation Demand Model based on planned city and township land uses and density indicate that between 2020 and 2040 vehicle miles traveled is estimated to grow more slowly, by about 20 percent or 1 percent annually.

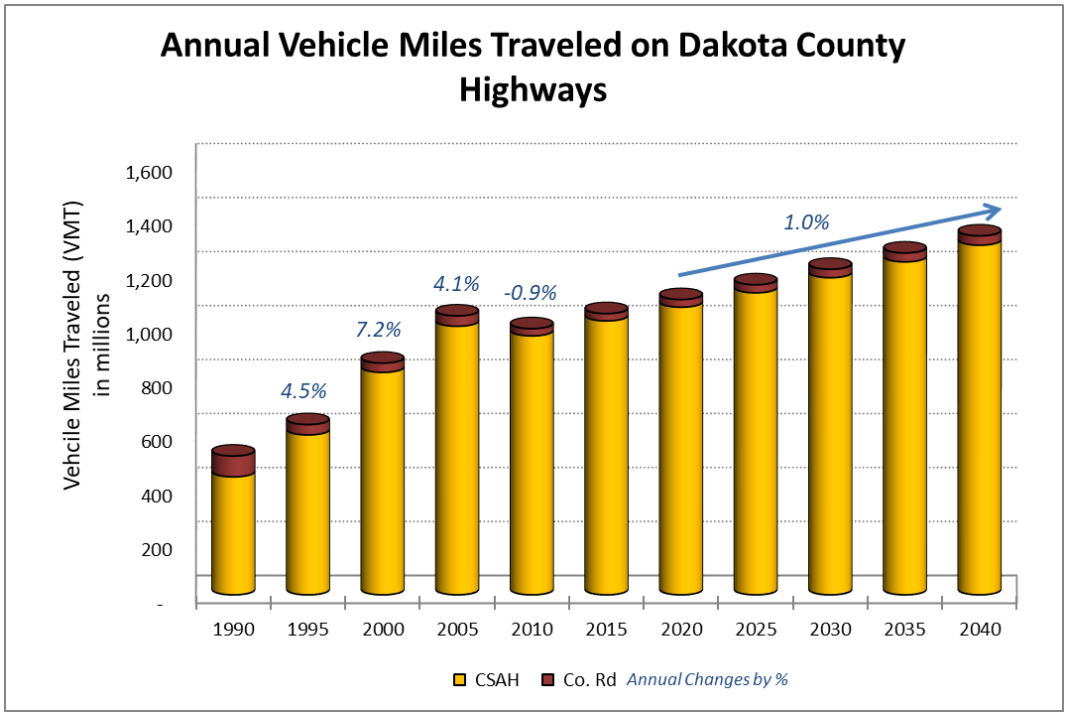


Table 10.

In some cases, management efforts to maximize the operation and efficiency of the existing system are not sufficient to meet traffic demand. In these situations, additional capacity is necessary to meet anticipated transportation needs within the planning period. However, it is anticipated that the traffic growth rates through the 2040 Plan period will continue at this slower, and potentially even a further reduced, rate of growth due to several factors including:

- Reduced rate of population growth within the county
- Reduced planned growth and density per city and township comprehensive plans
- Increased use of teleworking, virtual meetings, and e-commerce
- Opportunities that may arise through connected and autonomous vehicles and other transportation technologies
- Increasing interest and use of bicycle and pedestrian modes
- And, most recently, on travel patterns and virtual activities associated with the COVID19 pandemic

Further, there are safety, cost, and maintenance issues with roadways that are designed with too much capacity and wider roads are more challenging for pedestrians and bicyclists to safely cross. This potential for reduced traffic growth coupled with operational and safety factors has resulted in a more conservative approach to identification of potential highway expansion needs through the Plan period. Only those county highways that are anticipated to be at 110% or more of existing roadway capacity by 2040 are identified for expansion needs in this Plan. Those segments between 90 and 110% are identified as near capacity, and will be monitored, but not planned for expansion through 2040.

Due to the reduced rate of traffic growth, limited highway expansion needs are expected for highways under the jurisdiction of Dakota County, with somewhat greater needs on MnDOT trunk highways due to a backlog of mobility needs within the planning horizon.

This section addresses expansion of highway corridors through the following types of investment:

- Lane additions
- New highway alignments
- Grade separated interchanges
- Future studies
- Potential trunk highway investment on priority corridors

Proposed measures, strategies, and policies to address the anticipated expansion needs are presented under these corresponding subsections. Estimated needs include cost of corridor studies, preliminary engineering and environmental study, design/construction engineering, right-of-way acquisition and construction costs.

Improvement and expansion of the transportation system will be pursued through the following activities and CIP investment categories.

Activities

- Fully utilize Management goal strategies and investments prior to considering expansion.
- Work with cities and other agencies to minimize or mitigate expansion needs.
- Coordinate improvements with development to accommodate traffic growth.
- Conduct transportation studies to plan for long term system and sub-area needs.
- Utilize 2 and 3 lane-divided highway sections that are easily expandable for long term growth
- Partner with MnDOT to identify trunk highway expansion project, scope and costs.

CIP Investment Categories

- County Highway Lane Additions/Expansion
- Future County Highway Alignments
- Interchanges and Overpasses
- Trunk Highway Projects
- Engineering Studies

County Highway Lane Additions/Expansion

A capacity deficiency exists when actual traffic exceeds the vehicular capacity of the highway. The acceptable capacity of the highway depends on many factors including location, route options, roadway geometrics, locations of major intersections, access management, peak hour traffic volumes and traffic controls.

A highway's level of service is used to assign a value to the level of congestion and efficiency of the highway. Each highway segment has a finite capacity that is the maximum number of vehicles that can be accommodated, including all its lanes. The level of service is determined by the ratio of the highway traffic volume to the established segment capacity. In general, the higher the volume, the lower the level of service of the highway. There are six levels of service depending on the extent of congestion and service on the roadway. The anticipated traffic volume to highway capacity ratio is based on the County

Travel Demand Model that determines 2040 traffic volume projections resulting from anticipated land use and development based on adopted city and township comprehensive plans.

Due to reduced rates of traffic growth, potential for increases in capacity through Management goal activities and new technology, and previously described uncertainties with long range traffic volumes, the county will be monitoring those county highways with a 0.90 to 1.10 volume to capacity ratio as Near Capacity. These corridors are not identified as needing expansion through 2040. This plan identifies the likely need for county highway expansion on those corridors where the volume to capacity ratio is expected to exceed 1.10. This is considered a sufficiently high level of traffic to likely require the need for additional lanes even with the anticipated further decline in future traffic growth. County highway capacity criteria is shown in Table 11.

County Highway Capacity Criteria

Roadway Design	1/2 ROW Needs	ADT (Average Daily Traffic) Capacity	90% of Capacity	110% of Capacity
2-Lane Urban	50'	0 to 10,000	9,000	11,000
2-Lane Rural	55'	0 to 10,000	9,000	11,000
3-Lane	60'	10,000 to 18,000	16,200	19,800
4-Lane Divided	75'	18,000 to 35,000	31,500	38,500
6-Lane +	100'	35,000 and over	31,500	38,500

Table 11.

Highway capacity deficiencies in 2019 are shown in Figure 43. Deficiencies for 2040 are shown in Figure 44. Highways shown as under capacity indicate that the 2040 projected traffic volume is less than 90 percent of the maximum highway capacity design (Levels of Service A through D). Highways shown as Near Capacity indicate that the projected traffic volume is projected at between 90 and 110 percent of the maximum highway capacity design (Levels of Service E and potentially F). Highways shown as Over Capacity indicate that the projected traffic volume is greater than 110% the maximum highway capacity design (over Level of Service F).

Not all county highway segments identified as Over Capacity are expected to require additional through lanes. Those existing two-lane segments that have projected 2040 traffic volumes between 10,000 and 15,000 ADT are identified as potential three-lane sections. These segments are identified on Figure 36 and accounted for in replacement and modernization needs.

Expansion improvements, including addition of through-lanes, will be evaluated and monitored as a highway approaches the Near Capacity threshold of 90 percent of traffic volume capacity. Expansion needs cannot be related directly to site-specific development in place of overall transportation system needs. In some instances, the rate of development may result in certain segments being over capacity well before funds are available for expansion of highways.

The goals of preservation, management and replacement are considered a higher priority to ensure existing infrastructure is maintained and managed to maximize safety, function, capacity, and life of the facility before expansion is considered. As the overall needs of the transportation system exceed the

funds available to address these needs, expansion projects may need to be delayed ensuring higher-priority projects on the system are funded.

County Highways That Exceed 6-Lane Capacity

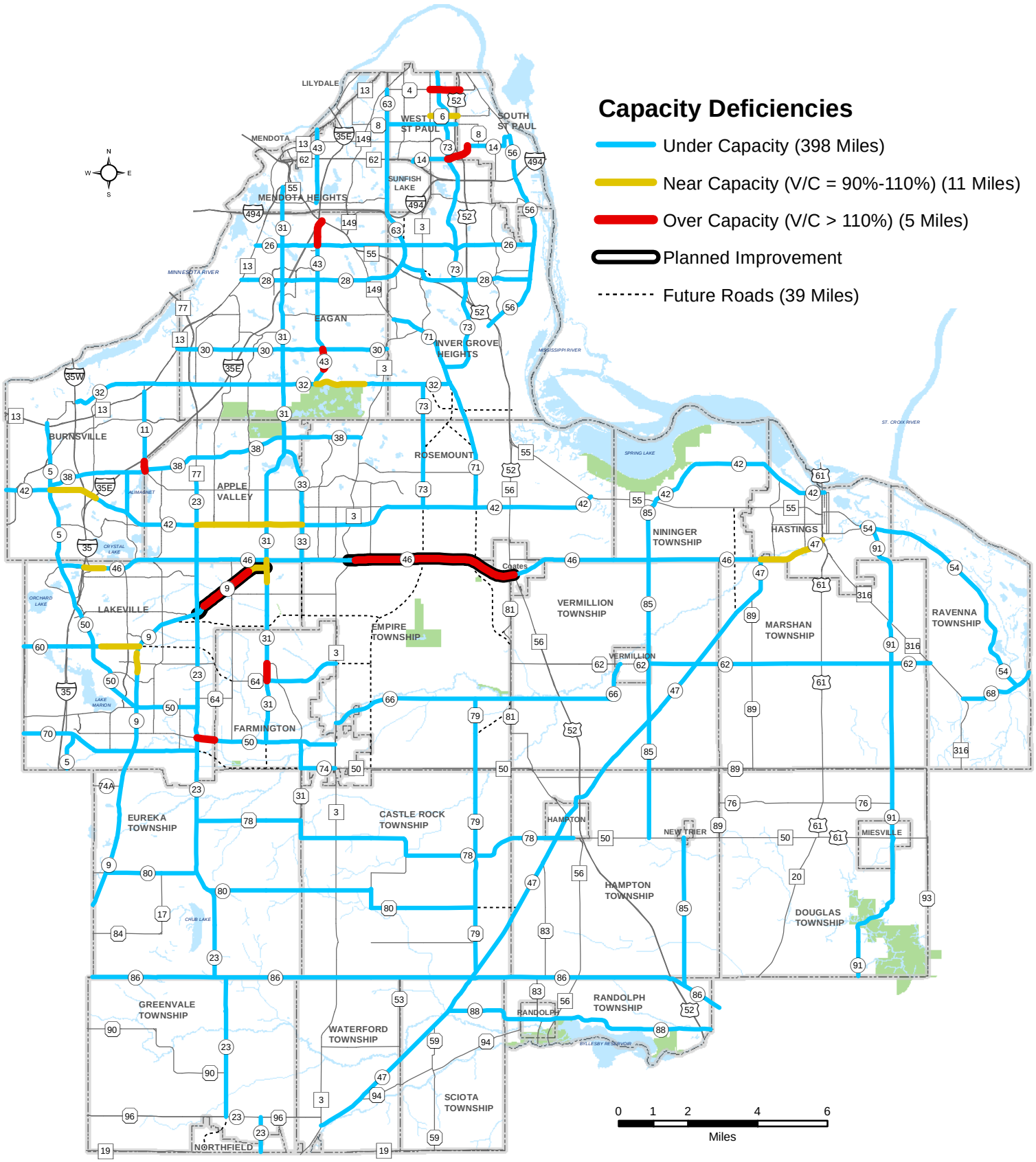
Currently, all highways on the county system contain at-grade intersections where county highways intersect county highways. Highways with traffic exceeding 6-lane divided capacity often exhibit unique operational challenges because at-grade intersections and traffic signals limit the effectiveness of additional lanes to increase capacity. The county's 2040 Travel Demand Model projection indicates that only CSAH 42, from CSAH 5 to I-35E in Burnsville, will be near 6-lane capacity by 2040.

Fewer solutions are available to deal with this capacity issue since expanding to an eight-lane section is not likely practical from impact, cost, or operational perspectives. Further, this location involves two major grade separated interchanges at I-35W and I-35E. Determination of an appropriate solution will be made in cooperation with MnDOT and the City of Burnsville in the future when actual traffic conditions warrant and dependent on availability of resources. The ultimate vision for these corridors will be developed in close coordination with the cities and other affected interests.

The following are the estimated annual CIP investments for lane additions to address over capacity highway segments over the plan period including estimated investments for County Roads:

- 2021-2025 = $8.7 million ($0 for County Roads)
- 2026-2030 = $10.1 million ($0 for County Roads)
- 2031-2040 = $10.1 million ($0 for County Roads)

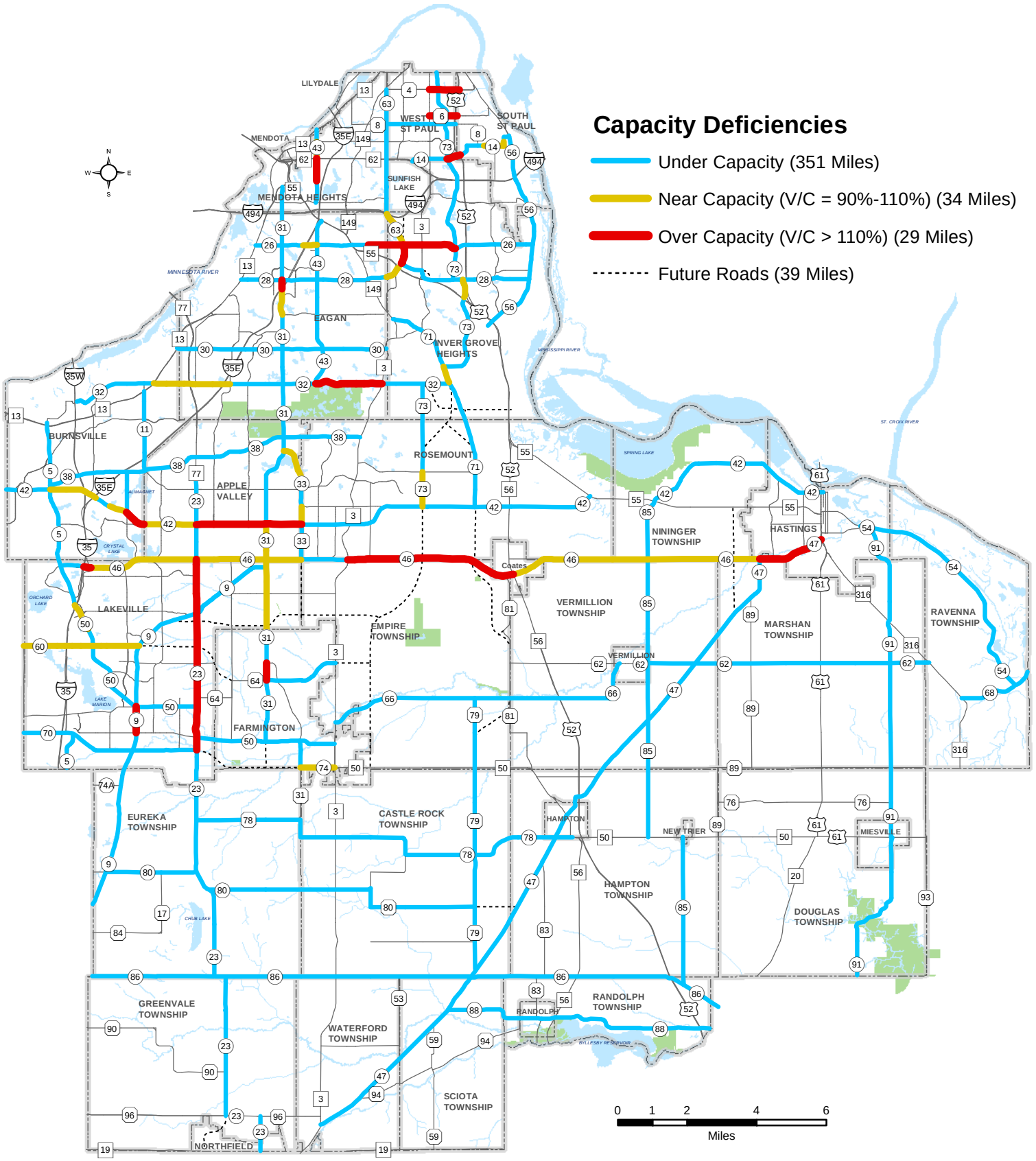
Dakota County Highway Capacity Deficiencies, 2019



Prepared by:
Dakota County Office of GIS, 2/2021.

Dakota County 2040 Transportation Plan - Figure 43

Dakota County Highway Capacity Deficiencies, 2040



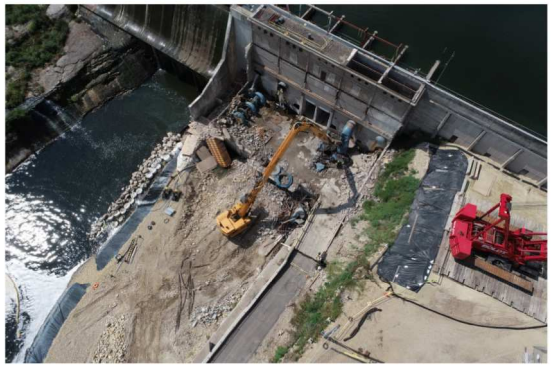
Prepared by:
Dakota County Office of GIS, 2/2021.

Dakota County 2040 Transportation Plan - Figure 44

CAPITAL IMPROVEMENT PROGRAM

Dakota COUNTY

2022-2026



Capital Improvement Program
2022-2026

Dakota County Board of Commissioners

Mike Slavik, First District
Kathleen A. Gaylord, Second District
Laurie Halverson, Third District
Joe Atkins, Fourth District
Liz Workman, Fifth District
Mary Liz Holberg, Sixth District
Mary Hamann-Roland, Seventh District

Dakota County Manager

Matt Smith

This page was left blank intentionally.

Capital Improvement Program

Table of Contents

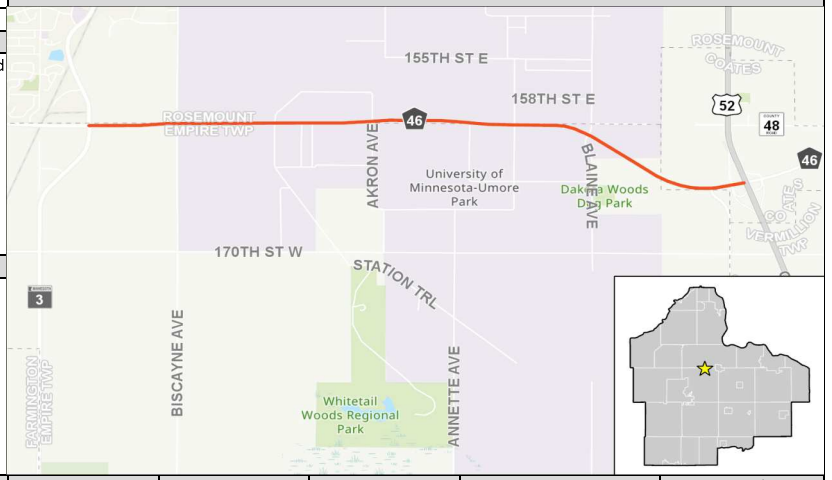
2022-2026 Capital Improvement Program

2022 CAPITAL BUDGET

and 2022 - 2026 TRANSPORTATION SALES & USE TAX CAPITAL IMPROVEMENT PROGRAM

Project Title:	CSAH 46 - 2 to 4 Lane Expansion	
Project Number(s):	99-013	
Year of Board Authorization:	2019	**Project Description:**
Target Completion:	2024	The project will expand CSAH 46 from TH 3 to TH 52 from two lanes to a four lane divided section to address safety and capacity needs due to increasing traffic volumes and a high proportion of heavy commercial vehicle traffic. The project includes a grade separated crossing for the Vermillion Highlands Greenway.
Project Type:	Expansion	
JL Key:	ST00011	
Project Location:		
TH 3 to TH 52 in Rosemount/Empire		

Project Graphic



Project and Fiscal History:

2021 - Design ($1.6M)
2022 - ROW ($4M)
2023 - Construction Administration ($2M)
2023 - Construction ($23M)

June, 2021- Design cost updated.
City cost share is 8% as determined by the Cost Participation Policy and percentage of the project within the City limits.
A State Bonding request in the amount of $11.5M was submitted in 2021, but not yet approved.

Project Revenues	Original Project Estimate	Approved Budget	2022 Budget	2023 Estimate	2024 Estimate	2025 Estimate	2026 Estimate	Beyond 2026	Total Revised Project Revenues Estimate	2022 Project Revenues Estimate Change
Local	-	200,000	320,000	1,080,000	-	-	-	-	1,600,000	1,600,000
State	-	-	-	11,500,000	-	-	-	-	11,500,000	11,500,000
Transportation Sales Tax	-	2,200,000	3,680,000	12,420,000	-	-	-	-	18,300,000	18,300,000
Total	**-**	**2,400,000**	**4,000,000**	**25,000,000**	**-**	**-**	**-**	**-**	**31,400,000**	**31,400,000**

Project Expenditures	Original Project Estimate	Approved Budget	2022 Budget	2023 Estimate	2024 Estimate	2025 Estimate	2026 Estimate	Beyond 2026	Total Revised Project Expenditures Estimate	2022 Project Expenditures Estimate Change
Land Acquisition	-	-	4,000,000	-	-	-	-	-	4,000,000	4,000,000
Consulting Services	-	2,400,000	-	2,000,000	-	-	-	-	4,400,000	4,400,000
New Construction	-	-	-	23,000,000	-	-	-	-	23,000,000	23,000,000
Total	**-**	**2,400,000**	**4,000,000**	**25,000,000**	**-**	**-**	**-**	**-**	**31,400,000**	**31,400,000**

Vermillion Highlands Greenway

MASTER PLAN

ADOPTED BY THE DAKOTA COUNTY BOARD OF COMMISSIONERS JULY 31, 2012
APPROVED BY THE METROPOLITAN COUNCIL NOVEMBER 28, 2012

Dakota COUNTY

Table of Contents

Figure 19. Vermillion Highlands Greenway Concept Plan

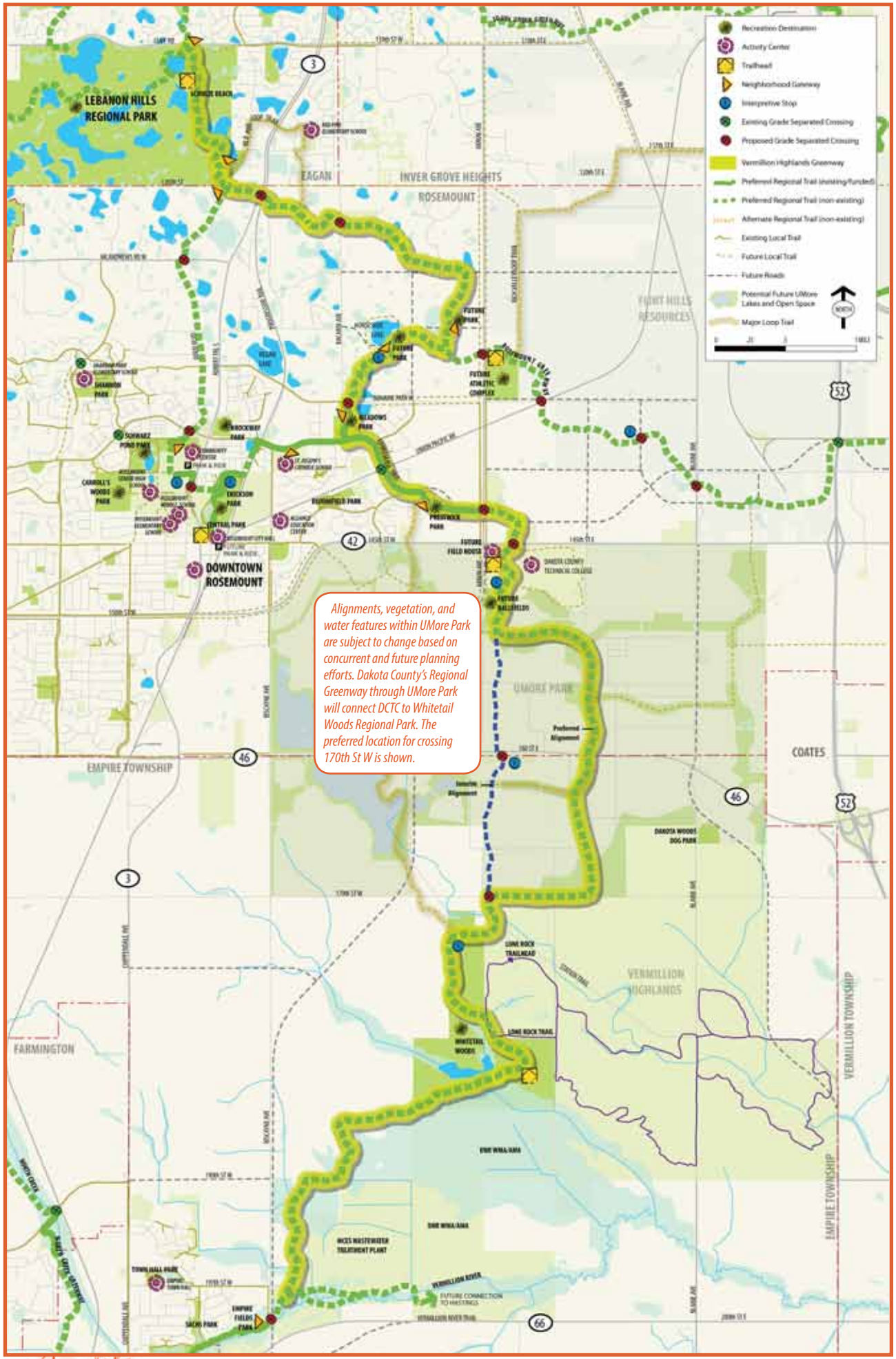
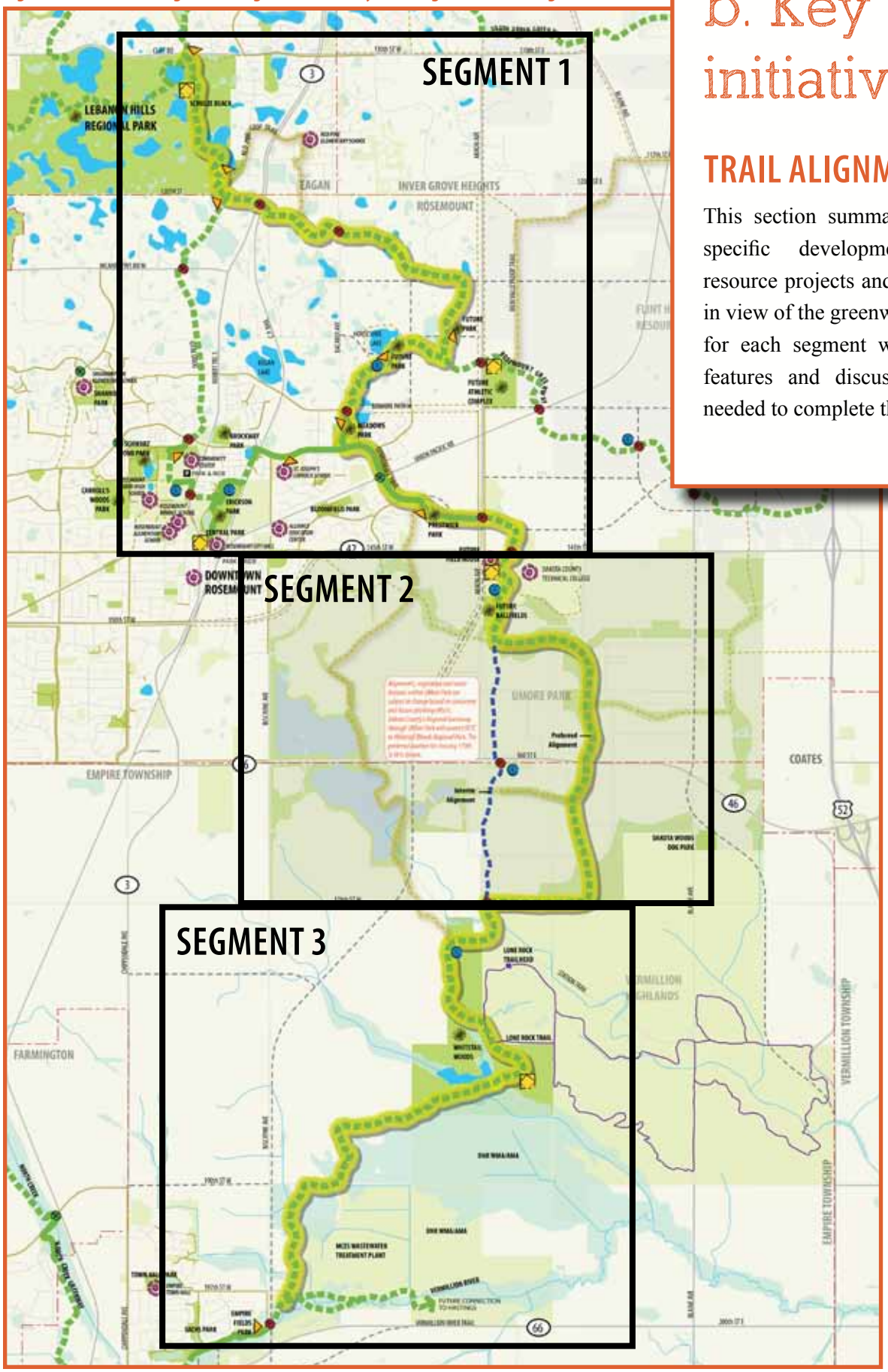


Figure 27. Vermillion Highlands Regional Greenway Trail Alignments and Segments



b. Key initiatives

TRAIL ALIGNMENT

This section summarizes, by segment, specific development and natural resource projects and issues. A zoomed-in view of the greenway map is provided for each segment with a summary of features and discussion of initiatives needed to complete the greenway.

Dakota COUNTY

Americans with Disabilities Act

Transition Plan

for County Highway Rights of Way

June 2018

Dakota COUNTY transportation
we get you there

Dakota County Draft Americans with Disabilities Act Transition Plan for County Highway Rights of Way

Table of Contents

Self-Evaluation

Overview

Dakota County, in accordance with Title II of the Americans with Disabilities Act (ADA) and 28 CFR 35.105, performed a self-evaluation of its current transportation infrastructure policies, practices, and programs. This self-evaluation identifies Dakota County Transportation Plan strategies and policies that have elements addressing accessibility. The purpose of the self-evaluation is to verify that, in implementing Dakota County's strategies, policies and practices, the Dakota County Transportation Department is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation also identifies barriers in the existing County highway infrastructure including sidewalks, curb ramps, bicycle/pedestrian trails and traffic control signals that are located within Dakota County rights of way. Any barriers to accessibility identified in the self-evaluation and the remedy to the identified barrier are set out in the practices and strategies of this plan.

Summary

In 2016, Dakota County conducted an inventory of pedestrian facilities and traffic signals within its public right of way. The inventory was conducted using the most current county Geographical Information System (GIS) data, latest aerial and street-level photography, and latest County Transportation Department database information. Locations that require a site visit based on recent roadway construction improvements or lack of current data is identified in the self-evaluation.

The inventory only includes existing transportation facilities. Non-existent facilities are not required to be identified or addressed under ADA Transition Plan guidelines. However, ADA stipulates that any project identified for construction or alteration that provides access to pedestrians must be made accessible to persons with disabilities.

The County will ensure that all new transportation facilities to be constructed will be ADA compliant. Future improvements or alterations to existing transportation facilities will also follow ADA guidance in meeting compliance. Details are identified under the Implementation Schedule section of this document.

The inventory included the following findings:

- Approximately **195 miles** of County highways that exists within County municipalities were surveyed. County highways located within rural townships were not surveyed because no pedestrian facilities exist on the County highways within the townships.

- Considering a pedestrian facility does or can exist on both sides of a highway, approximately **390 miles** of County highway right of way within municipalities is considered as available space for sidewalks or trails.
- The inventory includes **146 traffic** signals under County jurisdiction

Existing Sidewalks and Trails

- Approximately **191 miles**, or **49 percent** of County highway mileage within municipalities, **have concrete sidewalks or bituminous trails**. This is comprised of:
    - Approximately **52 miles**, or **13 percent** of County highway mileage within municipalities, with **concrete sidewalks**; and
    - Approximately **139 miles**, or **36 percent** of County highway mileage within municipalities, with **bituminous trail**.

Example of a good or compliant pedestrian ramp

Example of a poor or non-compliant pedestrian ramp

Pedestrian Ramps

- The inventory includes **3,165 pedestrian ramp locations** within the County highway right of way within municipalities.
- **2,376 pedestrian ramps**, or **75 percent**, appear substantially ADA compliant.
- **789 pedestrian ramps**, or **25 percent**, do not appear ADA compliant, require further evaluation or require installation.

Example of a good or compliant traffic signal

Example of a poor or non-compliant traffic signal

Traffic Signals

- The inventory includes **146 traffic signals** that the County is responsible for at county highway intersections.
- **25 traffic signals**, or **17 percent**, are ADA compliant with Accessible Pedestrian Signals.

A detailed evaluation of these facilities is found in the appendices.

Appendix B – Self-Evaluation Results

Approximately 195 miles of County highways were surveyed. The surveyed mileage exists within County municipalities. County highways located within rural townships were not surveyed. Considering a pedestrian facility does or can exist on both sides of a highway, approximately 390 miles of County highway right of way is considered as available space for sidewalks or trails.

This initial self-evaluation of pedestrian facilities yielded the following results:

- 68% of areas that required concrete sidewalk were in place and appeared to meet accessibility criteria.
- 75% of areas that required curb ramps were in place and appeared to meet accessibility criteria.
- 15% of intersections did not have any compliant curb ramps (with truncated domes).
- 45% of areas that require bituminous trails were in place and appeared to meet accessibility criteria.
- 17% of traffic control signals had Accessible Pedestrian Signal systems.

Pedestrian Infrastructure Inventory

In 2016, Dakota County inventoried pedestrian ramps, sidewalks and trails within the county highway rights of way along county roadways. The County also identified which traffic signals on the county highway system have been constructed with Accessible Pedestrian Signals.

Pedestrian Ramps
All pedestrian ramps within county highway rights of way were identified as one of four categories or cases as follows:

Case 1
The pedestrian ramp has a truncated dome and has been checked for compliance.

Case 2
The pedestrian ramp has a truncated dome and has not been checked for compliance. However, the ramp appears substantially compliant from observation.

Case 3
The pedestrian ramp does not have a truncated dome. However, the pedestrian ramp does not appear to present a significant physical barrier for pedestrians.

Case 4
The pedestrian ramp is in need of construction, installation or modification based on the condition of the pedestrian ramp, or lack thereof, and its location relative to existing pedestrian facilities.

The inventory also identified locations where no pedestrian facilities existed.

Results

The results of the pedestrian ramp inventory completed within county highway rights of way were:

Case 1	=	0 ramps (no ramps were physically reviewed for compliance check)
Case 2	=	2,376 ramps
Cases 3 & 4	=	789 ramps (Cases 3 & 4 were combined as construction costs to obtain compliance are the same for each category)

Pedestrian ramps that have been categorized as Case 3 or 4 scenarios will be identified as candidates for future projects. The timeline for construction, installation or modification of each of these pedestrian ramps will depend on its correlation to planned projects, and available funding.

A pedestrian ramp inventory was conducted for each County highway within a municipality. This inventory includes:

- The intersecting street or driveway location of the pedestrian ramp
- The case number and compliance results
- If the intersection is signalized
- Specific site notes
- Municipality

This inventory is located in Appendix G.

Sidewalks and Trails

All sidewalks and trails within county highway rights of way were inventoried and evaluated to determine existing lengths, adjacent land uses and to identify general condition.

The following categories were used to rate the condition of concrete sidewalks and bituminous trails:

Good

A facility that has recently been constructed, reconstructed or resurfaced and has no or few defects.

Fair

A facility that has a few defects, may require future maintenance, but remains fairly functional to pedestrians.

Poor

A facility that has numerous defects and/or requires maintenance to be safely functional for pedestrians. If a facility does not exist it was categorized as poor in the inventory.

Facility defects and obstructions were considered in rating the facility. These included defects or damage that could cause pedestrians to fall, that could impede wheelchair users or disabled pedestrians and common defects such as breaks, unevenness and projecting or settling sections. The defects and obstructions considered included the following:

- Pavement “heave” between sections or at the curb or street connection
- Uneven sloping
- Horizontal or vertical cracking
- Drainage issues consisting of low points that hold water or runoff
- Vegetation issues consisting of substantial vegetation growing within the pavement or adjacent to the pavement
- Significant ware or lack of maintenance

- Slope issues near streets, driveways or hills
- Obstructions such as fire hydrants, lighting poles, signal poles, utility poles, and utility hand holes.

Results

Results of the inventory are:

- 51.7 miles of good and fair sidewalks
- 139.2 miles of good and fair trails
- 2.9 miles of poor sidewalks
- 8.1 miles of poor trails
- 21.6 miles of missing sidewalk segment locations
- 165.0 miles of missing trail segment locations

Sidewalks and trails rated as poor will be identified as candidates for future projects. The timeline for construction, installation or modification of each of these sidewalks and trails will depend on its correlation to planned projects, and available funding.

The sidewalk and trail inventory conducted for each County highway within a municipality includes:

- The facility segment by intersection
- The type of facility
- Adjacent land use
- Segment length
- Segment rating
- Specific segment notes
- Municipality

This inventory is located in Appendix G.

Accessible Pedestrian Signals (APS)

All traffic signals within county highway rights of way were inventoried within the municipalities. There are 146 traffic signals on the county highways within the municipalities.

The *Dakota County 2030 Transportation Plan* provides guidance for the placement and operation of traffic control devices within the county (pages 7-23 through 7-27). This includes strategies and policies for intersection traffic control studies; city or state maintenance assistance for traffic control signals; transit priority for traffic control signals; traffic control signal operations, maintenance, and energy costs; traffic signal coordination; and intersection traffic control changes.

The County designs and installs new signals or signal replacements to be compliant with ADA. Accessible Pedestrian Signals (APS) are considered part of the design practice for new signals. The Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) identifies an APS as a device that communicates information about pedestrian timing in nonvisual format such as audible tones, speech messages, and/or vibrating surfaces. Anywhere pedestrians would be permitted to cross APS is provided with new or replacement signals.

The APS or pedestrian push buttons installed or maintained are based upon the design standard at the time of installation. All new locations are designed to meet current standards. The County has installed a few APS systems based on assessment and requests. However, when retrofitting these devices, the devices are installed on existing poles and would not necessarily be designed the same as a newly designed system. The County designs all new signals with the ADA standards including APS and pedestrian ramps to meet requirements to the degree possible. Dakota County uses MnDOT standard design information that

includes information from the Public Right of Way Accessibility Guidelines (PROWAG).

CSAH 42 (Rosemount): Sidewalk Inventory

From	To	East/North	Land Use	Good/F Length	Poor Length	West/South	Land Use	Good/F Length	Poor Length	Rating (G/F/P)	Notes	City
CSAN 33	Shannon Pkwy	trail	R	0.348		trail	R	0.348		fair		Rosemount
Shannon Pkwy	Crestone Av	trail	R	0.106		sidewalk	C	0.106		fair		Rosemount
Crestone Av	Claret Av	trail	R	0.123		sidewalk	C	0.123		fair		Rosemount
Claret Av	Cimarron Av	trail	R	0.108		sidewalk	C	0.108		fair		Rosemount
Cimarron Av	Chippendale Av	trail	R	0.110		sidewalk	C	0.110		fair	(a)	Rosemount
Chippendale Av	private access	trail	I	0.106		trail	C	0.106		fair		Rosemount
private access	Canada Av W	trail	R	0.123		trail	C	0.123		fair		Rosemount
Canada Av W	TH 3	trail	R	0.155		trail	C	0.155		fair		Rosemount
TH 3	Business Pkwy	none	U		0.263	none	C		0.263	n/a		Rosemount
Business Pkwy	Biscayne Av	none	R		0.288	none	C		0.288	n/a		Rosemount
Biscayne Av	145th St W	none	R		0.568	none	U		0.568	n/a		Rosemount
145th St W	Auburn Av	none	R		0.432	none	U		0.432	n/a		Rosemount
Auburn Av	Abbeyfield Av	none	R		0.483	none	U		0.483	n/a		Rosemount
Abbeyfield Av	CR 73	none	U		0.212	none	U		0.212	n/a		Rosemount
CR 73	DCTC west entrance	none	U		0.242	none	U		0.242	n/a		Rosemount
DCTC west entrance	DCTC east entrance	none	U		0.271	none	I		0.271	n/a		Rosemount
DCTC east entrance	Audrey Av	none	U		0.205	none	I		0.205	n/a		Rosemount
Audrey Av	CSAH 71	none	U		0.769	none	U		0.769	n/a		Rosemount
CSAH 71	TH 52	none	U		0.973	none	U		0.973	n/a		Rosemount
TH 52	Conley Av	none	U		0.210	none	U		0.210	n/a		Rosemount
Conley Av	Emery Av	none	U		1.775	none	U		1.775	n/a	(b)	Rosemount
Emery Av	142nd St E	none	U		0.324	none	U		0.324	n/a	(b)	Rosemount
142nd St E	TH 55	none	U		0.144	none	U		0.144	n/a	(b)	Rosemount
	TOTAL			**1.179**	**7.159**			**1.179**	**7.159**		**Total Area**	**16.676**

Shaded areas represent priority locations, areas of missing infrastructure and/or areas to address

Notes

(a) old informational bike map kiosk in northeast corner

(b) wide shoulders

Land Use

R	Residential (house, apartment)
C	Commercial (business, industrial)
I	Institutional (school, church, park, athletic complex)
U	Undeveloped (open space, utilities, transportation)

CSAH 42 (Rosemount): Pedestrian Ramp Inventory

CSAH 42	Curb Ramp Information						Location
At	Complies	To Comply	Notes	Case	Signal	Notes	City
Shannon Pkwy	4	0		2	Yes		Rosemount
Crestone Av	2	0		2			Rosemount
Claret Av	4	0		2			Rosemount
Cimarron Av	2	0		2			Rosemount
Chippendale Av	4	0		2	Yes		Rosemount
private access	4	0		2			Rosemount
Canada Av W	2	0		2			Rosemount
TH 3	5	0		2	Yes	(a)	Rosemount
Business Pkwy	0	4	need for Business Pkwy sidewalks	4			Rosemount
Biscayne Av	0	3	need for Biscayne Av trails	4			Rosemount
145th St W	0	2	need for 145th St W trails	4			Rosemount
Auburn Av	0	0	Auburn sidewalks end prior to R/W	6			Rosemount
Abbeyfield Av	2	0	for new street sidewalks	2			Rosemount
CR 73	2	0		2			Rosemount
DCTC west entrance	0	0		6			Rosemount
DCTC east entrance	0	0		6			Rosemount
Audrey Av	0	0		6			Rosemount
CSAH 71	0	0		6			Rosemount
TH 52	0	0		6			Rosemount
Conley Av	0	0		6			Rosemount
Emery Av	0	0		6			Rosemount
142nd St E	0	0		6			Rosemount
TH 55	0	0		6			Rosemount
TOTAL	**31**	**9**					

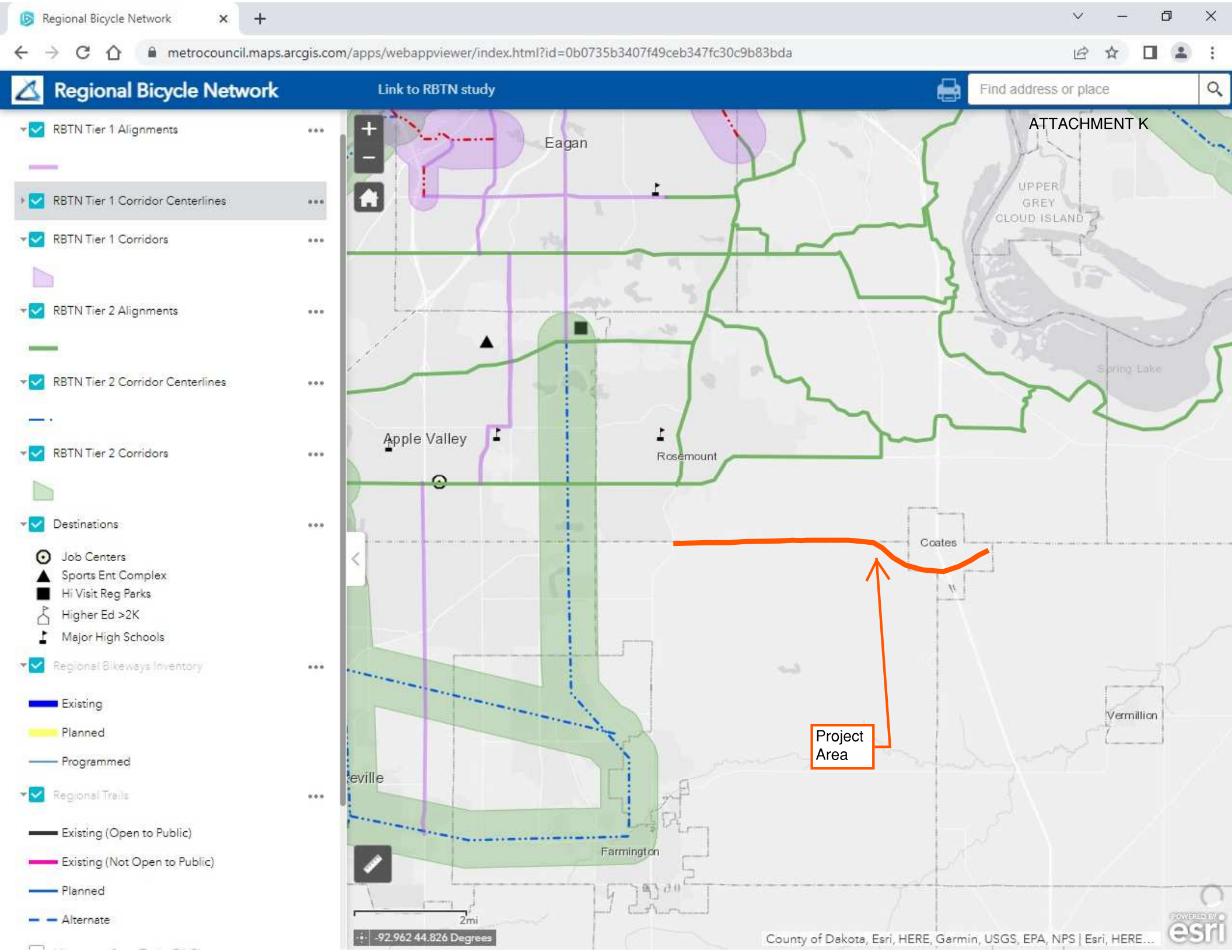
Shaded areas represent priority locations, areas of missing infrastructure and/or areas to address

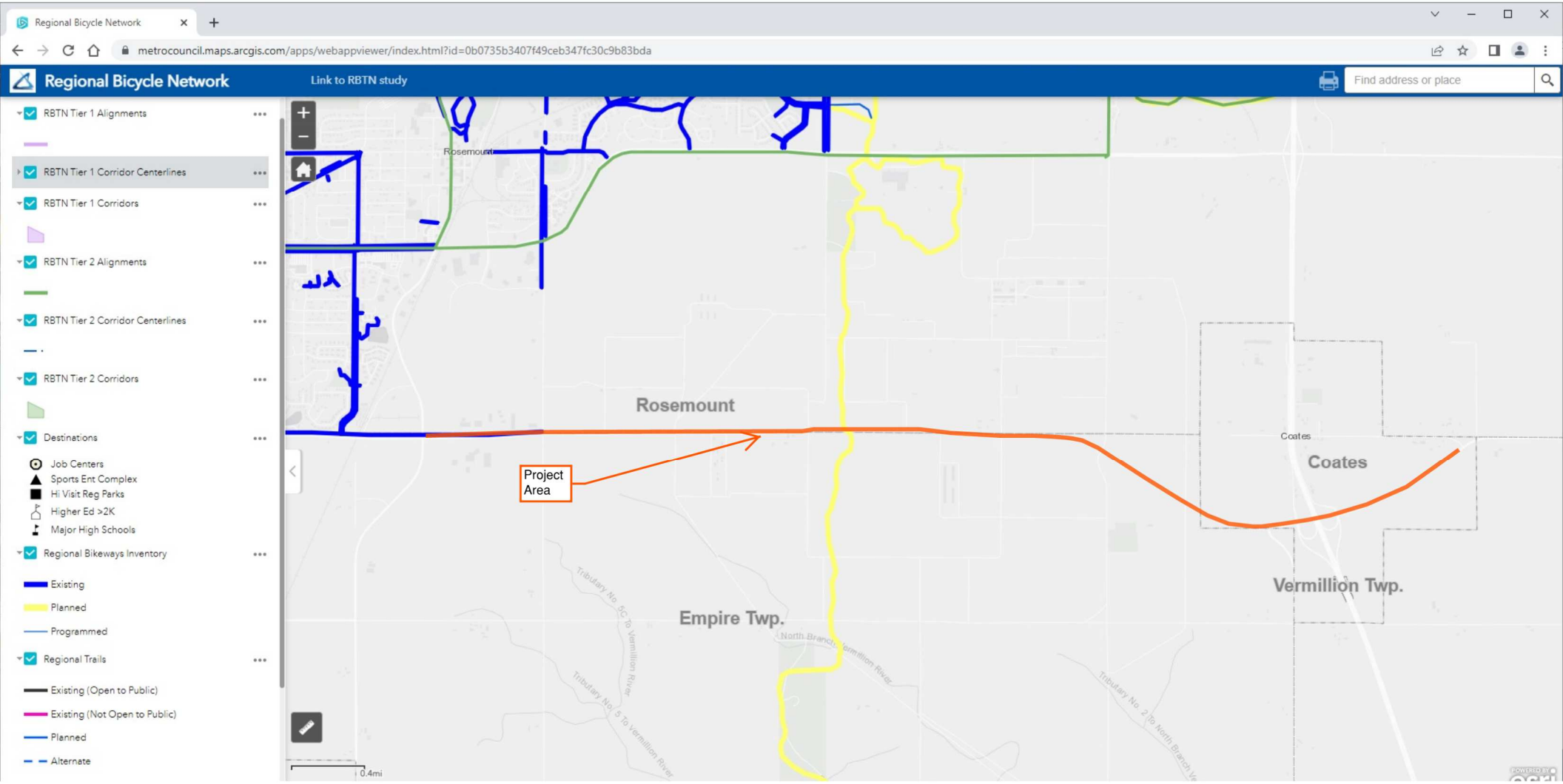
Curb Ramp Case Ratings

1 Ramps with truncated domes that have been checked for compliance
2 Ramps that appear substantially compliant
3 Ramps without truncated domes
4 Ramps in need of construction installation or modification
5 Trail exists on one side of road. Trail is at grade & does not require ramps.
6 No pedestrian facilities exist.

Notes

(a) truncated curb ramps at southeast corner with no sidewalk of trail connections.


Regional Bicycle Network
metrocouncil.maps.arcgis.com/apps/webappviewer/index.html?id=0b0735b3407f49ceb347fc30c9b83bda
Regional Bicycle Network
Link to RBTN study
Find address or place
ATTACHMENT K
RBTN Tier 1 Alignments
RBTN Tier 1 Corridor Centerlines
RBTN Tier 1 Corridors
RBTN Tier 2 Alignments
RBTN Tier 2 Corridor Centerlines
RBTN Tier 2 Corridors
Destinations
Job Centers
Sports Ent Complex
Hi Visit Reg Parks
Higher Ed >2K
Major High Schools
Regional Bikeways Inventory
Existing
Planned
Programmed
Regional Trails
Existing (Open to Public)
Existing (Not Open to Public)
Planned
Alternate
Eagan
Apple Valley
Rosemount
Coates
Vermillion
Farmington
UPPER
GREY
CLOUD ISLAND
Spring Lake
Project
Area
2mi
-92.962 44.826 Degrees
County of Dakota, Esri, HERE, Garmin, USGS, EPA, NPS | Esri, HERE...
esri


Regional Bicycle Network
metrocouncil.maps.arcgis.com/apps/webappviewer/index.html?id=0b0735b3407f49ceb347fc30c9b83bda
Regional Bicycle Network
Link to RBTN study
Find address or place
RBTN Tier 1 Alignments
RBTN Tier 1 Corridor Centerlines
RBTN Tier 1 Corridors
RBTN Tier 2 Alignments
RBTN Tier 2 Corridor Centerlines
RBTN Tier 2 Corridors
Destinations
Job Centers
Sports Ent Complex
Hi Visit Reg Parks
Higher Ed >2K
Major High Schools
Regional Bikeways Inventory
Existing
Planned
Programmed
Regional Trails
Existing (Open to Public)
Existing (Not Open to Public)
Planned
Alternate
Rosemount
Project Area
Rosemount
Coates
Coates
Vermillion Twp.
Empire Twp.
0.4mi

CSAH 46 Expansion Safety and Mobility Project

Dakota County 2022 Regional Solicitation Strategic Capacity Application Attachment listing

Attachment A – Project Summary

Attachment B – Existing Conditions/Photographs

Attachment C – Project Layout

Attachment D – Met Council Maps (4 total)

Attachment E – Letters of Support (2 total)

Attachment F – Met Council Thrive MSP Plan Goal Sheets

Attachment G – Dakota County 2040 Transportation Plan Goals Sheets

Attachment H – Dakota County CIP sheet

Attachment I – Vermillion Highlands Greenway Excerpts

Attachment J – County's ADA Transition Plan Excerpts and Inventory Sheets

Attachment K – RBTN Screenshots of Project Area