Application

04774 - 2016 Roadway Modernization

05085 - CSAH 18 Reconstruction Project - Phase 2A

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	07/14/2016 9:14 AM

Primary Contact

Name:*		Darin	Neil	Mielke
	Salutation	First Name	Middle Name	Last Name
Title:	Deputy County Engineer			
Department:	Public Works			
Email:	dmielke@co.carver.mn.us			
Address:	11360 Highway 212, Suite 1			
*	Cologne	Minnesota	55322	
	City	State/Province	Postal Code/Zip	
Phone:*	952-466-5200			
	Phone		Ext.	
Fax:				
What Grant Programs are you most interested in?	Regional Solicitation - Roadways Including Multimodal Elements			

Organization Information

Name:	CARVER COUNTY

Jurisdictional Agency (if different):

Organization Type: County Government

Organization Website:

Address: PUBLIC WORKS

11360 HWY 212 W #1

*	COLOGNE	Minnesota	55322-9133
	City	State/Province	Postal Code/Zip

County: Carver

Phone:* Ext.

Fax:

PeopleSoft Vendor Number 0000026790A12

Project Information

Project Name CSAH 18 (TH 41 to CSAH 15)

Primary County where the Project is Located Carver

Jurisdictional Agency (If Different than the Applicant):

Brief Project Description (Limit 2,800 characters; approximately 400 words)

The proposed project will reconstruct CSAH 18 (Lyman Boulevard) from TH 41 (Hazeltine Boulevard) to CSAH 15 (Galpin Boulevard) in Carver County (see Figure 1 & 2). CSAH 18 was recently reconstructed to a four-lane roadway to the east of CSAH 15, and this project will reconstruct the remainder of CSAH 18 west of CSAH 15 to TH 41. This A-Minor Expander is currently a two lane undivided facility and will be rebuilt to accommodate roundabouts at key intersections and a trail along the north side of the road (see Figure 2 for existing conditions). Roundabouts will replace the CSAH 18 intersections at TH 41, Peavey Road, and Norex Boulevard. The design (roundabouts) are based on recent planning and traffic analysis efforts to ensure they operate efficiently and effectively without impacting mainline traffic on TH 41. These planning efforts have involved a robust planning process and coordination with MnDOT, Carver County, City of Chaska, City of Chanhassen, and local stakeholders/businesses.

The proposed project is a result of continuous growth in the area; average AADT is currently 5,200 vehicles and is expected to double (11,100) by 2040. A large portion of today's traffic (approximately 10 to 13 percent) is comprised of heavy commercial vehicles. Based on current volumes of traffic and expected demand, the existing two-lane facility creates a bottleneck that poses significant safety and congestion issues during peak periods. The proposed project will address these issues and complete the final link in the larger CSAH 18 project.

The improvements will provide improved access to over 8,110 jobs and 12,000 residents. The area's economy is highly freight dependent; of the 8,110 jobs, 63% are in manufacturing and distribution. The majority of these jobs are located immediately

north of the proposed improvement and will directly benefit from the improvements. The facility will also improve access and safety to/from Chanhassen High School.

The improvements will also provide a number of multimodal benefits. For example, the project will support existing transit service (SW Transit Express Route #685) by improving the corridor's mobility and safety. Trail improvements associated with the project will provide safer routes for pedestrians accessing the transit stops along the corridor. Transit and trail connections are vital to the project area and the vitality of local businesses.

Include location, road name/functional class, type of improvement, etc.

TIP Description Guidance (will be used in TIP if the project is selected for funding)

Reconstruction of CSAH 18 from TH 41 to CSAH 15 in Carver County, Minnesota

Project Length (Miles)

0.77

Project Funding

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

No

If yes, please identify the source(s)

Federal Amount

$5,511,600.00

Match Amount

$1,377,900.00

Minimum of 20% of project total

Project Total

$6,889,500.00

Match Percentage

20.0%

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

Source of Match Funds

Carver County

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

Preferred Program Year

Select one:

2020

For TDM projects, select 2018 or 2019. For Roadway, Transit, or Trail/Pedestrian projects, select 2020 or 2021.

Additional Program Years:

2019

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

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$287,000.00
Removals (approx. 5% of total cost)	$116,000.00
Roadway (grading, borrow, etc.)	$1,418,000.00
Roadway (aggregates and paving)	$1,798,000.00
Subgrade Correction (muck)	$204,000.00
Storm Sewer	$474,000.00
Ponds	$100,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$288,000.00
Traffic Control	$286,000.00
Striping	$23,000.00
Signing	$18,000.00
Lighting	$75,000.00
Turf - Erosion & Landscaping	$236,000.00
Bridge	$0.00
Retaining Walls	$613,000.00
Noise Wall (do not include in cost effectiveness measure)	$0.00
Traffic Signals	$160,000.00
Wetland Mitigation	$60,000.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$575,000.00
Other Roadway Elements	$31,500.00
Totals	**$6,762,500.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$115,000.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00

Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$12,000.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$127,000.00**

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

Totals

Total Cost	$6,889,500.00
Construction Cost Total	$6,889,500.00
Transit Operating Cost Total	$0.00

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, the 2040 Regional Parks Policy Plan (2015), 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 objectives and strategies that relate to the project.

List the goals, objectives, strategies, and associated pages:

Goal B: Safety and Security (2040 TPP, pg. 2.7) ? The regional transportation system is safe and secure for all users.

Objectives:
Reduce crash rates and improve safety and security for all modes of passenger travel and freight transport.

Strategies:
B1 - Regional transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, operation.

B3 - Regional transportation partners should monitor and routinely analyze safety and security data by mode and severity to identify priorities and progress.

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.

Goal D:Competitive Economy (2040 TPP, pg. 2.11) - The regional transportation system supports the economic competitiveness, vitality, and prosperity of the regions and state.

Objectives:

Support the region?s economic competitiveness through the efficient movement of freight.

Strategies:
D5 - The Council and MnDOT will work with transportation partners to identify the impacts of highway congestion on freight and identify cost-effective mitigation.

Goal F:

Leveraging Transportation Investment to Guide Land Use (2040 TPP, pg. 2.14) The region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.

Objectives:

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

Strategies:

F7 - Local governments should include bicycle and pedestrian elements in local comprehensive plans.

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.

Carver County Roadway System Plan (2014 Amendment): Page 5 - CSAH 18 recommended as an urban section.

List the applicable documents and pages:

Chaska Comprehensive Plan: Page 29 & 33 - CSAH 18 recognized as reaching its design capacity from TH 41 to East City Limits.

4.The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of bicycle/pedestrian projects, 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.

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

5.Applicants that are not 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.
***Roadway Expansion:** $1,000,000 to $7,000,000*
***Roadway Reconstruction/ Modernization:** $1,000,000 to $7,000,000*
***Roadway System Management** $250,000 to $7,000,000*
***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.

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

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

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

10.The owner/operator of the facility must operate and maintain the project for the useful life of the improvement.

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

11.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

12.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

13.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 Expansion and Reconstruction/Modernization 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 projects only:

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

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

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

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

5.The length of the bridge must equal or exceed 20 feet.

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

6. The bridge must have a sufficiency rating less than 80 for rehabilitation projects and less than 50 for replacement projects. Additionally, the bridge must also be classified as structurally deficient or functionally obsolete.

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

Requirements - Roadways Including Multimodal Elements

Project Information-Roadways

County, City, or Lead Agency	Carver County
Functional Class of Road	A Minor Expander
Road System *TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET*	CSAH
Road/Route No. *i.e., 53 for CSAH 53*	18
Name of Road *Example; 1st ST., MAIN AVE*	Lyman Boulevard
Zip Code where Majority of Work is Being Performed	55317
(Approximate) Begin Construction Date	06/01/2019
(Approximate) End Construction Date	10/01/2020

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

From: **(Intersection or Address)**	TH 41
To: **(Intersection or Address)**	CSAH 15

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Primary Types of Work	GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND UTTER, STORM SEWER, SIGNALS, LIGHTING, BIKE PATH, PED RAMPS, LANDSCAPING

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

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

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

Expander/Augmentor/Connector/Non-Freeway Principal Arterial

Select one:	Expander
Area	2.167
Project Length	0.782
Average Distance	2.7711
Upload Map	

Reliever: Relieves a Principal Arterial that is a Freeway Facility

Facility being relieved	
Number of hours per day volume exceeds capacity (based on the Congestion Report)	0

Reliever: Relieves a Principal Arterial that is a Non-Freeway Facility

Facility being relieved	
Number of hours per day volume exceeds capacity (based on the table below)	0

Non-Freeway Facility Volume/Capacity Table

Hour	NB/EB Volume	SB/WB Volume	Capacity	Volume exceeds capacity
12:00am - 1:00am			0	
1:00am - 2:00am			0	

2:00am - 3:00am	0
3:00am - 4:00am	0
4:00am - 5:00am	0
5:00am - 6:00am	0
6:00am - 7:00am	0
7:00am - 8:00am	0
8:00am - 9:00am	0
9:00am - 10:00am	0
10:00am - 11:00am	0
11:00am - 12:00pm	0
12:00pm - 1:00pm	0
1:00pm - 2:00pm	0
2:00pm - 3:00pm	0
3:00pm - 4:00pm	0
4:00pm - 5:00pm	0
5:00pm - 6:00pm	0
6:00pm - 7:00pm	0
7:00pm - 8:00pm	0
8:00pm - 9:00pm	0
9:00pm - 10:00pm	0
10:00pm - 11:00pm	0
11:00pm - 12:00am	0

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

Existing Employment within 1 Mile:	8110
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	5099
Existing Students:	0
Upload Map	1467910440515_MC_Economy.pdf

Measure C: Current Heavy Commercial Traffic

Location:	TH 41 and CSAH 18
Current daily heavy commercial traffic volume:	1102
Date heavy commercial count taken:	2016

Measure D: Freight Elements

This project will directly impact manufacturing and distribution operations in the area. The area's economy is highly freight dependent; of the 8,110 jobs, 63% are in manufacturing and distribution. The majority of these jobs are located immediately north of the proposed improvement and will directly benefit from the improvements.

Response (Limit 1,400 characters; approximately 200 words)

Over 20 percent of traffic on this segment represents heavy commercial vehicles. A large portion of these heavy commercial vehicle trips are being generated by the large number of industrial, manufacturing and distribution centers located along the corridor. The corridor is also relied on as a major east-west freight route providing direct access to TH 41. The CSAH 18 corridor also provides regional freight access to TH 212 (via TH 41) and TH 5 (via TH 41 or Powers Boulevard).

The reconstruction of CSAH 18 and the corresponding intersection improvements have been designed to handle truck volumes. For example, the roundabout has the proper truck aprons to ensure the safety for both truck and passenger movement. The facility will continue to be serve as a freight route and be designed as a ten-ton route. Other freight improvements include the widening of paved shoulders and turning lanes designed for trucks.

Measure A: Current Daily Person Throughput

Location	CSAH 18 East of TH 41
Current AADT Volume	5200
Existing Transit Routes on the Project	684

For New Roadways only, list transit routes that will be moved to the new roadway

Upload Transit Map	1467911102068_MC_Transit.pdf

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	6760.0

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	Carver County Travel Demand Model
Forecast (2040) ADT volume	11100

Measure A: Project Location and Impact to Disadvantaged Populations

Select one:

Project located in Area of Concentrated Poverty with 50% or more of residents are people of color (ACP50):	
Project located in Area of Concentrated Poverty:	
Projects census tracts are above the regional average for population in poverty or population of color:	
Project located in a census tract that is below the regional average for population in poverty or populations of color or includes children, people with disabilities, or the elderly:	Yes

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

The proposed project is unique from a social equity and housing perceptive. First, it is important to recognize the project area is comprised primarily of industrial and manufacturing land uses. Over 63 percent of the area's jobs are comprised of manufacturing and distribution related businesses. The manufacturing businesses (mechanical, technology and biomedical based) produce and develop a wide range of products. These businesses have created a diverse job center and logistics park that appeals to all skill levels, while offering well-paying jobs.

The type of jobs offered within the project area are well paying and do not typically require a post-secondary education. For example, the logistics industry is one of the last fields where someone with a high school education can still get an entry level job and work their way to the top. This project will improve the availability and connectivity to these "ladders of opportunity". Furthermore, these types of jobs are critical in supporting the economic vitality of Chaska and Chanhassen. The proposed project will also help achieve the Metropolitan Council's 2040 TPP goals. For example, the 2040 TPP recognizes that industrial land uses adjacent to A-Minor Arterials are key connections to jobs and accessibility.

The vast range of land uses support thousands of jobs that can be accessed by the proposed project. Better access to these jobs will help link regional populations that are above the regional average of race or poverty. More importantly, these populations can access the project area by transit. Transit routes from the site also provide access to downtown Minneapolis/Saint Paul, and the University of Minnesota for nearby residents. The proposed improvements will improve transit headway times and enhance the pedestrian connections between transit stops and jobs.

Overall, the CSAH 18 corridor plays a significant role from a social equity and housing perspective. This is further supported by Longitudinal Employer-Household Dynamics (LEHD) Census data. Based on this data, the project area includes the following social equity characteristics (using a one-mile buffer), which further demonstrates its importance to the region:

- 13.4 percent of the work force is non-white.

- 22.3 percent of the work force holds a high school or equivalent degree, and no college.

- 6.1 percent of the work force holds less than high school education.

- 99.4 percent of the work force lives outside the study area, and is traveling more ten miles to access their job.

The response should address the benefits, impacts, and mitigation for the populations affected by the project.

Upload Map 1467911925819_MC_Socio.pdf

Measure B: Affordable Housing

City/Township	Segment Length in Miles (Population)
Chaska	0.55
Chanhassen	0.22
	1

Total Project Length

Total Project Length (Total Population) 0.77

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

City/Township	Segment Length (Miles)	Total Length (Miles)	Score	Segment Length/Total Length	Housing Score Multiplied by Segment percent
		0	0	0	0

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

Total Project Length (Miles)	0.77
Total Housing Score	0

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1982	0.77	1526.14	1982.0
	1	**1526**	**1982**

Average Construction Year

Weighted Year	1982

Total Segment Length (Miles)

Total Segment Length	0.77

Measure B: Geometric, Structural, or Infrastructure Improvements

Improving a non-10-ton roadway to a 10-ton roadway:	Yes
Response (Limit 700 characters; approximately 100 words)	The proposed project will be a 10-ton design to better accommodate the significant heavy commercial traffic that uses this corridor to access the many industrial and manufacturing land uses. Constructing this roadway to a 10-ton design will better tie into the future improvements further east along county roads.

Improved clear zones or sight lines:	Yes
Response (Limit 700 characters; approximately 100 words)	Intersection improvements (signals and roundabouts) incorporated into the proposed project will be designed to provide adequate intersection sight distance (sight lines for all vehicle types). While the majority of corridor has adequate clear zones, the existing rural section of narrow two-lane road has some adjacent areas that will have better clear zones with the proposed roadway improvements.
Improved roadway geometrics:	Yes
Response (Limit 700 characters; approximately 100 words)	The existing two-lane roadway does not provide turn lanes at Peavey Road and Norex Drive, which creates traffic queues on CSAH 18. Heavy commercial vehicles currently use both lanes to make right/left-turn movements into their respective sites. The proposed roundabouts will provide better roadway geometrics to facilitate turning movements and improve mobility.
Access management enhancements:	Yes
Response (Limit 700 characters; approximately 100 words)	Access management enhancements will be made by the proposed roundabouts.
Vertical/horizontal alignments improvements:	Yes
Response (Limit 700 characters; approximately 100 words)	There are no significant vertical or horizontal alignment corrections associated with this project.
Improved stormwater mitigation:	Yes
Response (Limit 700 characters; approximately 100 words)	The current rural cross section will be updated to an urban section with curb and gutter to gather stormwater. The storm sewers will meet current state aid drainage standards and additional storm water mitigation will be incorporated in the design, where necessary.
Signals/lighting upgrades:	Yes
Response (Limit 700 characters; approximately 100 words)	The signal will be replaced at the TH 41 and CSAH 18 intersection with a roundabout. The appropriate lighting will be installed at all intersections throughout the corridor.

Other Improvements	Yes
Response (Limit 700 characters; approximately 100 words)	A multiuse trail will be constructed on the north side of CSAH 18.

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project	Total Peak Hour Delay Per Vehicle With The Project	Total Peak Hour Delay Per Vehicle Reduced by Project	Volume (Vehicles per hour)	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
28.0	9.1	18.9	1792	33868.8		1468436753305_CSAH 18 Synchro.pdf

Total Delay

Total Peak Hour Delay Reduced	33868.8

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

Total (CO, NOX, and VOC) Peak Hour Emissions Per Vehicle without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Per Vehicle with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced Per Vehicle by the Project (Kilograms):	Volume (Vehicles Per Hour):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
3.73	3.57	0.16	1794.0	287.04
4	**4**		**1794**	**287**

Total

Total Emissions Reduced:	287.04
Upload Synchro Report	1468418486084_CSAH 18 Synchro.pdf

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 Per Vehicle without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Per Vehicle with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced Per Vehicle by the Project (Kilograms):	Volume (Vehicles Per Hour):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
3.73	3.57	0	1792.0	0
4	**4**		**1792**	**0**

Total Parallel Roadways

Emissions Reduced on Parallel Roadways	0
Upload Synchro Report	

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)	

Transit Projects Not Requiring Construction

If the applicant is completing a transit or TDM 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

1)Project Scope (5 Percent of Points)

Meetings or contacts with stakeholders have occurred	Yes

100%

Stakeholders have been identified

40%

Stakeholders have not been identified or contacted

0%

2)Layout or Preliminary Plan (5 Percent of Points)

Layout or Preliminary Plan completed	Yes

100%

Layout or Preliminary Plan started

50%

Layout or Preliminary Plan has not been started

0%

Anticipated date or date of completion

3)Environmental Documentation (5 Percent of Points)

EIS

EA

PM	Yes

Document Status:

Document approved (include copy of signed cover sheet)

100%

Document submitted to State Aid for review

75% date submitted

Document in progress; environmental impacts identified; review request letters sent

50%

Document not started Yes

0%

Anticipated date or date of completion/approval 12/01/2018

4)Review of Section 106 Historic Resources (10 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%

Historic/archeological review under way; determination of no historic properties affected or no adverse effect anticipated

80%

Historic/archaeological review under way; determination of adverse effect anticipated

40%

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

0%

Anticipated date or date of completion of historic/archeological review:

Project is located on an identified historic bridge

5)Review of Section 4f/6f Resources (10 Percent of Points)

4(f) Does the project impacts any public parks, public wildlife refuges, public golf courses, wild & scenic rivers or public private historic properties?
6(f) Does the project impact any public parks, public wildlife refuges, public golf courses, wild & scenic rivers or historic property that was purchased or improved with federal funds?

No Section 4f/6f resources located in the project area Yes

100%

No impact to 4f property. The project is an independent bikeway/walkway project covered by the bikeway/walkway Negative Declaration statement; letter of support received

100%

Section 4f resources present within the project area, but no known adverse effects

80%

Project impacts to Section 4f/6f resources likely coordination/documentation has begun

50%

Project impacts to Section 4f/6f resources likely coordination/documentation has not begun

30%

Unsure if there are any impacts to Section 4f/6f resources in the project area

0%

6)Right-of-Way (15 Percent of Points)

Right-of-way, permanent or temporary easements not required

100%

Right-of-way, permanent or temporary easements has/have been acquired

100%

Right-of-way, permanent or temporary easements required, offers made

75%

Right-of-way, permanent or temporary easements required, appraisals made

50%

Right-of-way, permanent or temporary easements required, parcels identified Yes

25%

Right-of-way, permanent or temporary easements required, parcels not identified

0%

Right-of-way, permanent or temporary easements identification has not been completed

0%

Anticipated date or date of acquisition 12/01/2018

7)Railroad Involvement (25 Percent of Points)

No railroad involvement on project Yes

100%

Railroad Right-of-Way Agreement is executed (include signature page)

100%

Railroad Right-of-Way Agreement required; Agreement has been initiated

60%

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

40%

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

0%

Anticipated date or date of executed Agreement

8)Interchange Approval (15 Percent of Points)*

**Please contact Karen Scheffing at MnDOT (Karen.Scheffing@state.mn.us or 651-234-7784) to determine if your project needs to go through the Metropolitan Council/MnDOT Highway Interchange Request Committee.*

Project does not involve construction of a new/expanded interchange or new interchange ramps — Yes

100%

Interchange project has been approved by the Metropolitan Council/MnDOT Highway Interchange Request Committee

100%

Interchange project has not been approved by the Metropolitan Council/MnDOT Highway Interchange Request Committee

0%

9)Construction Documents/Plan (10 Percent of Points)

Construction plans completed/approved (include signed title sheet)

100%

Construction plans submitted to State Aid for review

75%

Construction plans in progress; at least 30% completion — Yes

50%

Construction plans have not been started

0%

Anticipated date or date of completion — 12/01/2018

10)Letting

Anticipated Letting Date — 03/01/2019

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

Crash Modification Factor Used: — 0.92

	TH 41 CR1 = Convert Signal to Multilane RAB CR 2 = Improve Pavement Friction Peavey Intersection
Rationale for Crash Modification Selected:	CR1 = Convert Signal to Multilane RAB CR 2 = Improve Pavement Friction The crash modifications are based on the proposed improvements and is consistent with application guidelines. See attachment for more information.
(Limit 1400 Characters; approximately 200 words)	
Project Benefit ($) from B/C Ratio	$1,699,804.00
Worksheet Attachment	1468353363747_CSAH18CompleteAnalysis.pdf

Roadway projects that include railroad grade-separation elements:

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

Measure A: Multimodal Elements and Existing Connections

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

The proposed project integrates all modes of transportation.

Freight - Over 20 percent of traffic on this segment represents heavy commercial vehicles. A large portion of these heavy commercial vehicle trips are being generated by the large number of industrial, manufacturing and distribution centers located along the corridor. The corridor is also relied on as a major east-west freight route providing direct access to TH 41. The CSAH 18 corridor also provides regional freight access to TH 212 (via TH 41) and TH 5 (via TH 41 or Powers Boulevard).

The CSAH 18 improvements and the corresponding intersections have been designed to handle truck volumes. For example, the roundabout at TH 41/CSAH 18 will have the proper truck aprons to ensure the safety for both truck and passenger movement. The facility will continue to serve as a freight route and be designed as a ten-ton route. Other freight improvements include the widening of paved shoulders and turning lanes designed for trucks.

Bike/Ped - The project is designed to improve pedestrian and bicycle access to the Chanhassen High School, employment centers, existing/planned trails along TH 41, and the regional trail network. Trails and sidewalks have been integrated as part of the past CSAH 18 reconstruction east of CSAH 15. The pedestrian/bike improvements as part of this project will complete the final gap and provide a safe route to school for those traveling to the high school. Finalizing the gap will also help provide better connections to the Tier 1 and Tier 2 Regional Bike Transportation Networks (RTBN): Cedar Lakes LRT and the Lake Minnetonka LRT Trail.

Transit - The SW Transit Express #684 travels along this alignment as it travels from TH 41 onto

CSAH 18. The route has several stops in project area, and a park and ride is located just to the south. The route provides job access to area residents and reverse commute employees of the manufacturing and distribution facilities served by this project. In particular, this route provides access to/from following communities, connections and points in-between: Chaska, Chanhassen, Eden Prairie, SouthWest Station, Edina (Southdale Transit Center), I-35W and Lake Street, Downtown Minneapolis (Marquette Avenue, 2nd Avenue), and the University of Minnesota.

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$6,889,500.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$6,889,500.00
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
CSAH 18 - Phase 2A MnDOT letter of support.pdf	MnDOT Letter of Support	105 KB
CSAH 18 Attachments.pdf	Figure 1 - Layout	8.2 MB
CSAH18ChanhassenResolution.pdf	Chanhassen Resolution of Support	39 KB
CSAH18ChaskaResolution.pdf	Chaska Resolution of Support	51 KB
Figure 2_Street Views.docx	Figure 2 - Street Views	3.5 MB
Figure 3.pdf	Figure 3 - Project Locations	1.2 MB
RADCsah18CarvRM.pdf	RADCsah18CarvRM	196 KB

Regional Economy

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957

Results

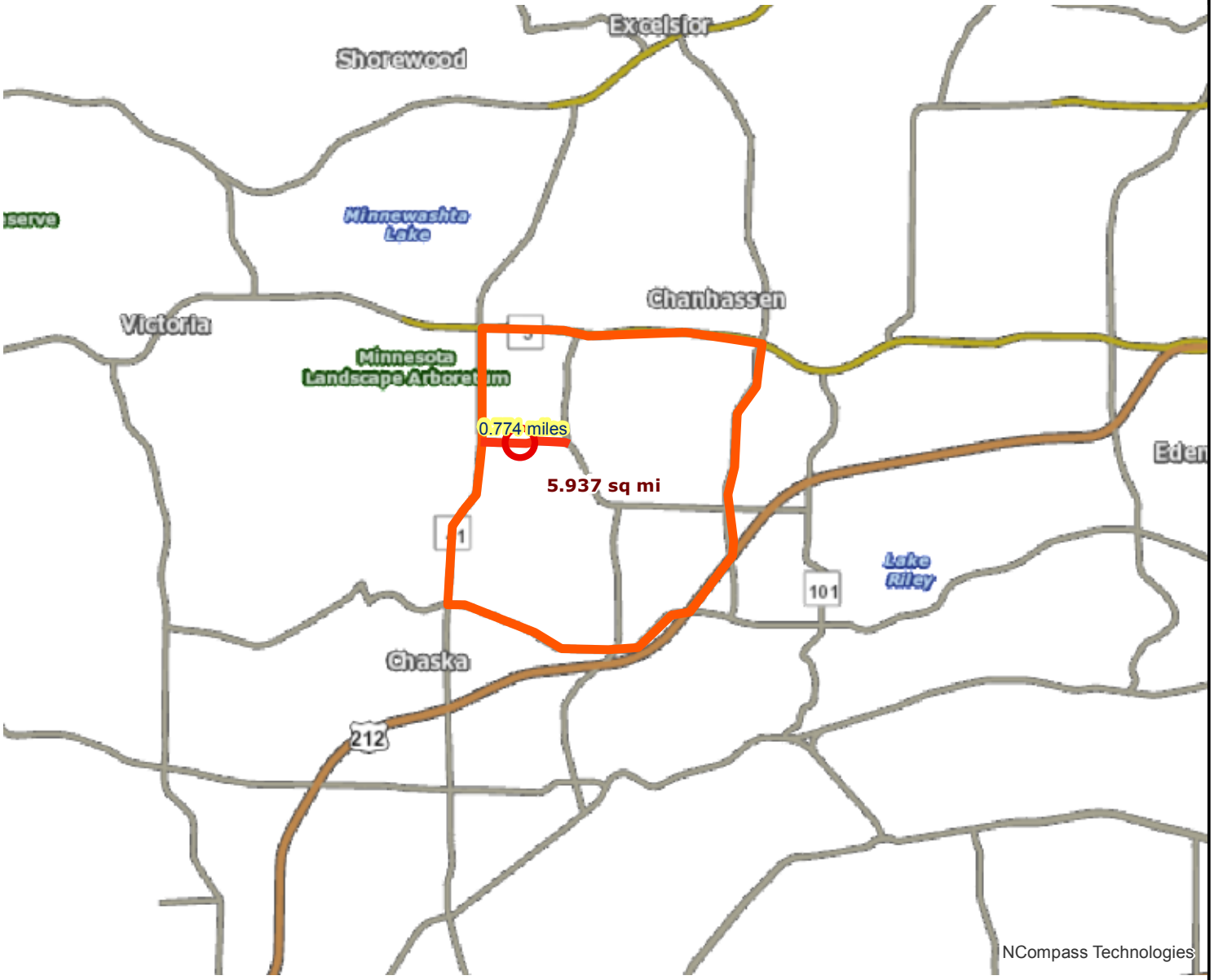
WITHIN ONE MI of project:

Totals by City:

Chanhassen
Population: 3284
Employment: 1724
Mfg and Dist Employment: 266

Chaska
Population: 2731
Employment: 6386
Mfg and Dist Employment: 4833

Postsecondary Students:
0



Project Points
Project
Project Area
PostSecondary Education Centers
Manfacturing/Distribution Centers
Job Concentration Centers

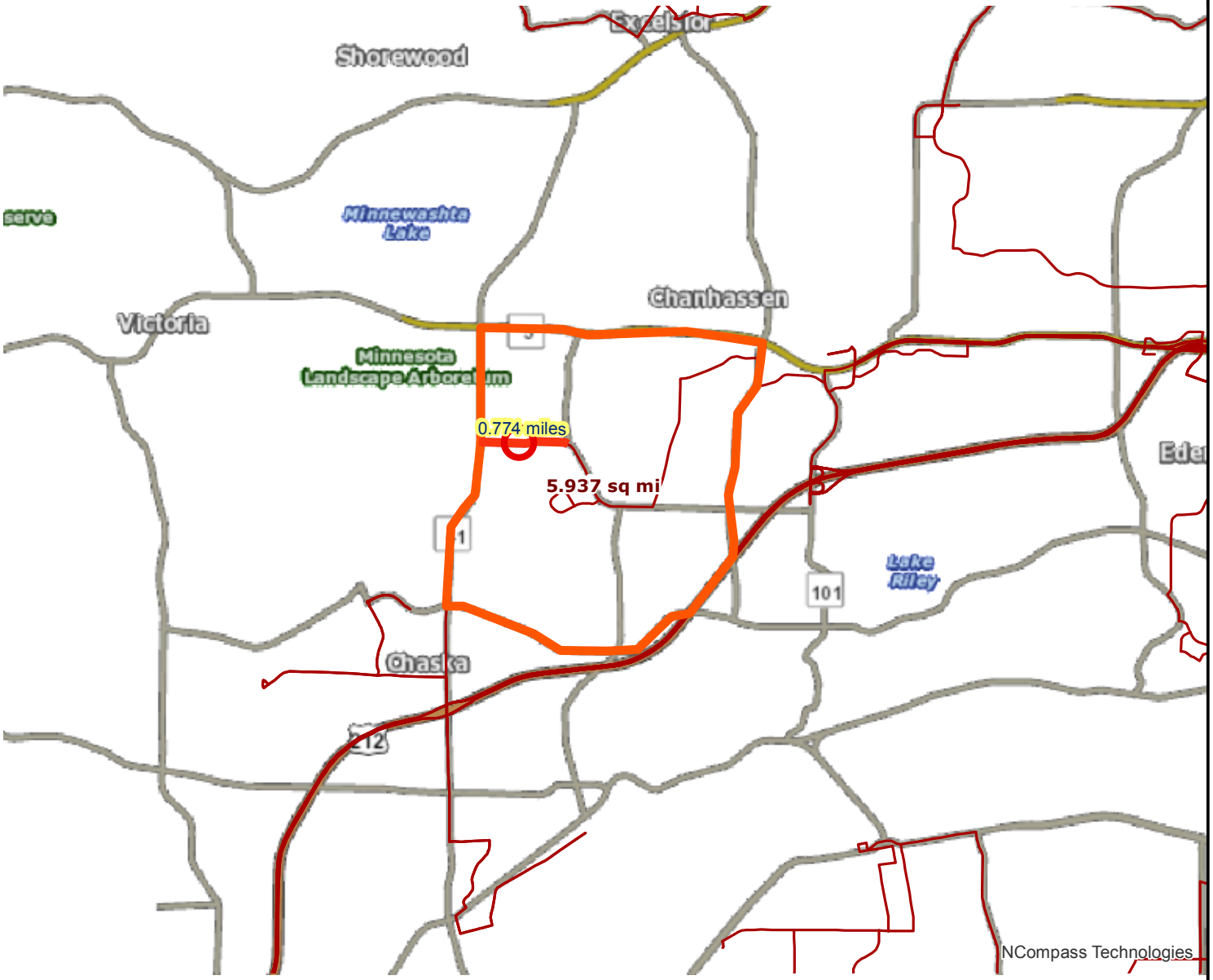
0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016
LandscapeRSA5

METROPOLITAN COUNCIL

Transit Connections

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957



Results

Transit with a Direct Connection to project: 684

**indicates Planned Alignments*

Project Points | Project Area

Project | Transit Routes

0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016

LandscapeRSA3

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

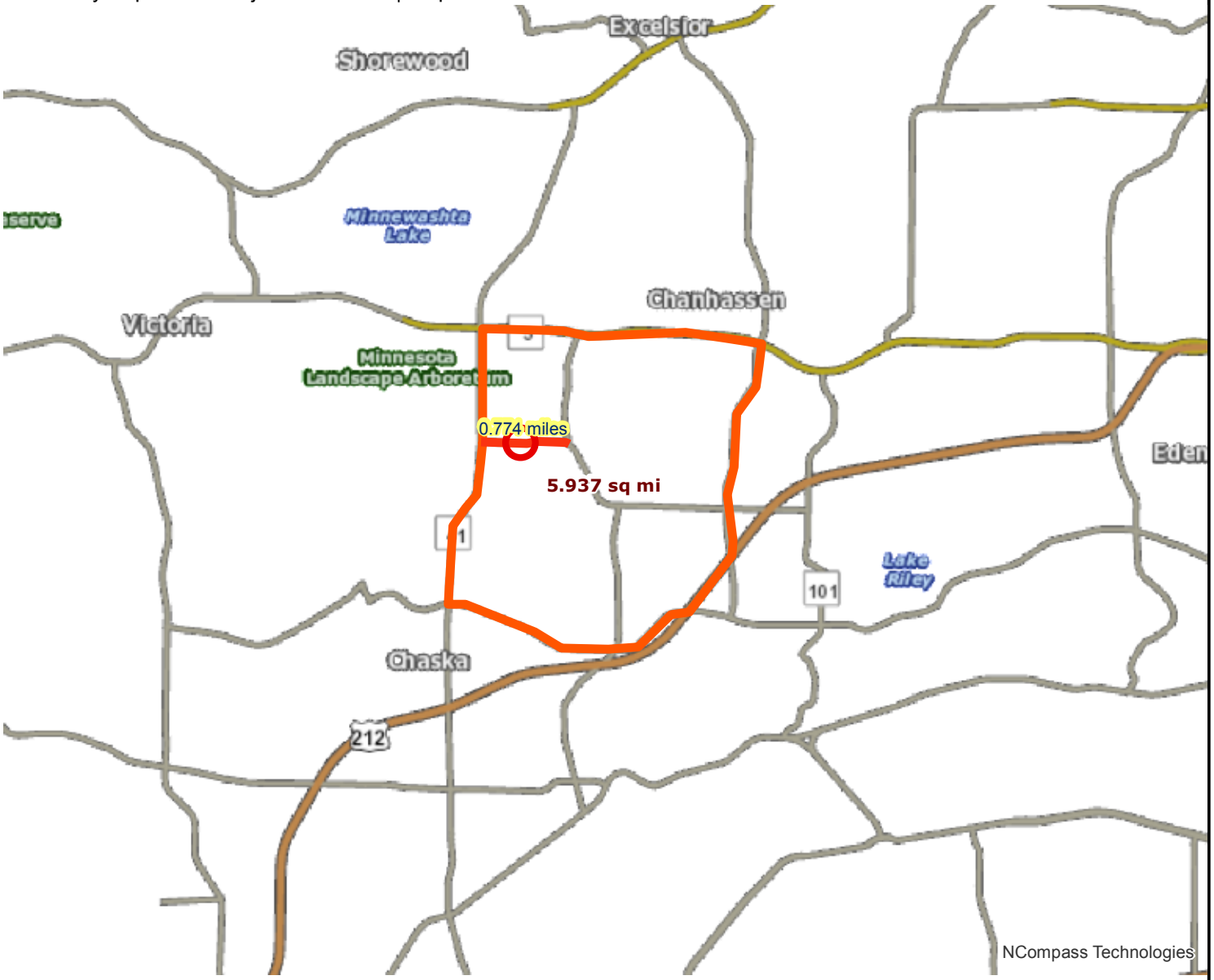
METROPOLITAN COUNCIL

Socio-Economic Conditions

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957

Results

Project located in
a census tract that is below
the regional average for
population in poverty
or populations of color,
or includes children,
people with disabilities,
or the elderly:
(0 to 12 Points)



Project Points
Project
Project Area

Area of Concentrated Povertry > 50% residents of color
Area of Concentrated Poverty
Above reg'l avg conc of race/poverty

0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016
LandscapeRSA2

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

METROPOLITAN COUNCIL

2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1792
Total Delay / Veh (s/v)	28
CO Emissions (kg)	2.61
NOx Emissions (kg)	0.51
VOC Emissions (kg)	0.61

2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1794
CO Emissions (kg)	2.50
NOx Emissions (kg)	0.49
VOC Emissions (kg)	0.58

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

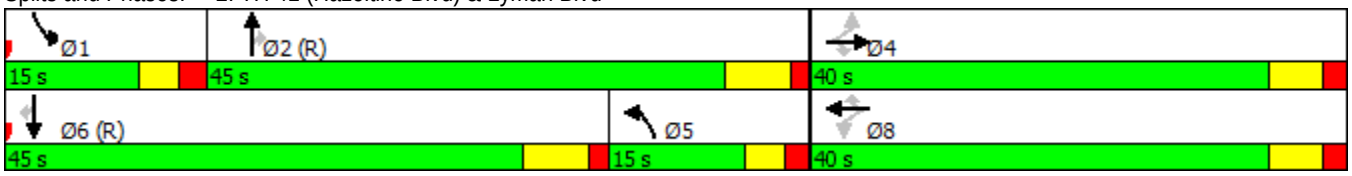
Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	175	495	708	614
Demand Flow Rate, veh/h	182	514	736	639
Vehicles Circulating, veh/h	975	682	159	358
Vehicles Exiting, veh/h	22	213	998	838
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.8	11.8	7.7	8.6
Approach LOS	A	B	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	L	TR	LT	TR	LT	TR
RT Channelized								
Lane Util	0.473	0.527	0.665	0.335	0.470	0.530	0.469	0.531
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	86	96	342	172	346	390	300	339
Cap Entry Lane, veh/h	544	571	678	701	1003	1011	864	879
Entry HV Adj Factor	0.957	0.967	0.962	0.963	0.961	0.962	0.962	0.960
Flow Entry, veh/h	82	93	329	166	333	375	289	326
Cap Entry, veh/h	520	552	652	675	964	972	831	845
V/C Ratio	0.158	0.168	0.505	0.245	0.345	0.386	0.347	0.385
Control Delay, s/veh	9.0	8.7	13.5	8.3	7.4	7.9	8.4	8.8
LOS	A	A	B	A	A	A	A	A
95th %tile Queue, veh	1	1	3	1	2	2	2	2

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	45	40	15	45	40
Maximum Split (%)	15.0%	45.0%	40.0%	15.0%	45.0%	40.0%
Minimum Split (s)	15	27.5	18	15	27.5	18
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	2	1.5	2	2	1.5	2
Minimum Initial (s)	7	20	10	7	20	10
Vehicle Extension (s)	3	5.5	3.5	3	5.5	2.5
Minimum Gap (s)	3	5.5	3.5	3	5.5	2.5
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		14	14		14	14
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	60	45	0	60
End Time (s)	15	60	0	60	45	0
Yield/Force Off (s)	10	53.5	94	55	38.5	94
Yield/Force Off 170(s)	10	39.5	80	55	24.5	80
Local Start Time (s)	0	15	60	45	0	60
Local Yield (s)	10	53.5	94	55	38.5	94
Local Yield 170(s)	10	39.5	80	55	24.5	80

Intersection Summary	
Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	

Splits and Phases: 2: TH 41 (Hazeltine Blvd) & Lyman Blvd



2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1792
Total Delay / Veh (s/v)	28
CO Emissions (kg)	2.61
NOx Emissions (kg)	0.51
VOC Emissions (kg)	0.61

2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1794
CO Emissions (kg)	2.50
NOx Emissions (kg)	0.49
VOC Emissions (kg)	0.58

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	175	495	708	614
Demand Flow Rate, veh/h	182	514	736	639
Vehicles Circulating, veh/h	975	682	159	358
Vehicles Exiting, veh/h	22	213	998	838
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.8	11.8	7.7	8.6
Approach LOS	A	B	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	L	TR	LT	TR	LT	TR
RT Channelized								
Lane Util	0.473	0.527	0.665	0.335	0.470	0.530	0.469	0.531
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	86	96	342	172	346	390	300	339
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Entry HV Adj Factor	0.957	0.967	0.962	0.963	0.961	0.962	0.962	0.960
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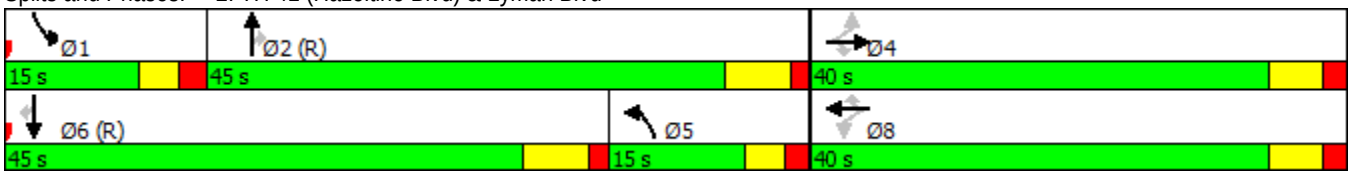
Cap Entry, veh/h	520	552	652	675	964	972	831	845
V/C Ratio	0.158	0.168	0.505	0.245	0.345	0.386	0.347	0.385
Control Delay, s/veh	9.0	8.7	13.5	8.3	7.4	7.9	8.4	8.8
LOS	A	A	B	A	A	A	A	A
95th %tile Queue, veh	1	1	3	1	2	2	2	2

Phase Number	1	2	4	5	6	8
Movement	SBL	NBT	EBTL	NBL	SBT	WBTL
Lead/Lag	Lead	Lag		Lag	Lead	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	15	45	40	15	45	40
Maximum Split (%)	15.0%	45.0%	40.0%	15.0%	45.0%	40.0%
Minimum Split (s)	15	27.5	18	15	27.5	18
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	2	1.5	2	2	1.5	2
Minimum Initial (s)	7	20	10	7	20	10
Vehicle Extension (s)	3	5.5	3.5	3	5.5	2.5
Minimum Gap (s)	3	5.5	3.5	3	5.5	2.5
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		14	14		14	14
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	60	45	0	60
End Time (s)	15	60	0	60	45	0
Yield/Force Off (s)	10	53.5	94	55	38.5	94
Yield/Force Off 170(s)	10	39.5	80	55	24.5	80
Local Start Time (s)	0	15	60	45	0	60
Local Yield (s)	10	53.5	94	55	38.5	94
Local Yield 170(s)	10	39.5	80	55	24.5	80

Intersection Summary	
Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	

Splits and Phases: 2: TH 41 (Hazeltine Blvd) & Lyman Blvd



HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 18	CSAH 18 and Peavy			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Minor Stop to RAB

Accident Diagram Codes			1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal	**F**									
	Personal Injury (PI)	**A**									
		B									
		C	1								**1**
	Property Damage	**PD**	4	1		2					**7**
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal	**F**									
	PI	**A**									
		B									
		C	-92%								
	Property Damage	**PD**	-83%	-83%		-100%					
Change in Crashes = No. of crashes **X** % change in crashes	Fatal	**F**									
	PI	**A**									
		B									
		C	**-0.92**								**-0.92**
	Property Damage	**PD**	**-3.32**	**-0.83**		**-2.00**					**-6.15**

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**			**$ 170,000**	
1. Discount Rate	**4.5%**	**C**	**-0.92**	**-0.31**	**$ 83,000**	**$ 25,477**
2. Project Service Life (n)	**20**	**PD**	**-6.15**	**-2.05**	**$ 7,600**	**$ 15,594**
		Total				**$ 41,071**

B/C= 0.10

Using present worth values,

B= $ 718,490

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 13	CSAH 18 and TH 41			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Convert signal to multilane RAB

Accident Diagram Codes		1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal **F**									
	Personal Injury (PI) **A**									
	B									
	C	1								**1**
	Property Damage **PD**	4		1						**5**
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal **F**									
	PI **A**									
	B									
	C	-87%								
	Property Damage **PD**	-69%		-69%						
Change in Crashes = No. of crashes **X** % change in crashes	Fatal **F**									
	PI **A**									
	B									
	C	**-0.87**								**-0.87**
	Property Damage **PD**	**-2.76**		**-0.69**						**-3.45**

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**			**$ 170,000**	
1. Discount Rate	**4.5%**	**C**	**-0.87**	**-0.29**	**$ 83,000**	**$ 24,092**
2. Project Service Life (n)	**20**	**PD**	**-3.45**	**-1.15**	**$ 7,600**	**$ 8,748**
		Total				**$ 32,840**

B/C= 0.08

Using present worth values,

B= $ 574,500

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 18	CSAH 18 Segment			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Reconstruct Pavement

			1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal	**F**									
	Personal Injury (PI)	**A**									
		B				1					**1**
		C									
	Property Damage	**PD**									
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal	**F**									
	PI	**A**									
		B				-41%					
		C									
	Property Damage	**PD**									
Change in Crashes = No. of crashes **x** % change in crashes	Fatal	**F**									
	PI	**A**									
		B				**-0.41**					**-0.41**
		C									
	Property Damage	**PD**									

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**	**-0.41**	**-0.14**	**$ 170,000**	**$ 23,255**
1. Discount Rate	**4.5%**	**C**			**$ 83,000**	
2. Project Service Life (n)	**20**	**PD**			**$ 7,600**	
		Total				**$ 23,255**

B/C= 0.06

Using present worth values,

B= $ 406,814

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

- Countermeasure: Improve pavement friction (increase skid resistance)

CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
0.799	20.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.667	33.3	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.819	18.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.797	20.3	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

1.271	-27.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.426	57.4	★★★★☆	Wet road	All	All	Lyon and Persaud, 2008	

-

0.372	62.8	★★★★☆	Wet road	All	All	Lyon and Persaud,	

0.575	42.5	★★★★☆	Rear end,Wet road	All		Lyon and Persaud, 2008
0.59	41	★★★☆☆	All	All	All	Lyon and Persaud, 2008
0.589	41.1	★★★☆☆	All	All	All	Lyon and Persaud, 2008
0.361	63.9	★★★☆☆	Wet road	All	All	Lyon and Persaud, 2008
0.304	69.6	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008
0.943	5.7	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008
0.504	49.6	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008

0.221	77.9	★★★☆☆	Rear end,Wet road	All	All	Lyon and Persaud, 2008
0.787	21.3	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.828	17.2	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.898	10.2	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.799	20.1	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008
0.47	53	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008
0.828	17.2	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008

▼ Countermeasure: Convert intersection with minor-road stop control to modern roundabout

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.56 [B]	44	★★★★★	All	All	All	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.18 [B]	82	★★★★★	All	Serious Injury,Minor Injury	All	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.29 [B]	71	★★★★★	All	All	Rural	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.13 [B]	87	★★★★★	All	Serious Injury,Minor Injury	Rural	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.71 [B]	29	★★★★☆	All	All	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.19 [B]	81	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.61 [B]	39	★★★★☆	All	All	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.22 [B]	78	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]

*NOTE: You can compare CMFs across countermeasures, subcategories, and categories.

▼ Countermeasure: Convert signalized intersection to modern roundabout

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.68	32	★★★★☆	All	Serious injury,Minor injury	Not specified	De Brabander and Vereeck, 2007	Countermeasure name has been slightly ... [read more]
☐	0.4 [B]	60	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.33 [B]	67	★★★★☆	All	All	Suburban	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.52 [B]	48	★★★★☆	All	All	All	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.22 [B]	78	★★★★☆	All	Serious Injury,Minor Injury	All	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.79	21	★★★★☆	All	All	Urban and suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]
☐	0.34	66	★★★★☆	All	Serious injury,Minor injury	Urban and suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]
☐	0.58	42	★★★★☆	All	All	Suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]

Dual CRF for CSAH 18 between TH 41 and Norex Dr

Improvements include a converting the signal at TH 41 and CSAH 18 to a multilane RAB and converting the intersections of Norex Dr and Peavy Ln to roundabouts

TH 41 Intersection
CR1=Convert Signal to Multilane RAB
CR2=Improve Pavement Friction

CR=1 – (1-CR1)*(1-CR2)

All = CR = 1 – (1-.48)*(1-.41)= .69
All (injury): CR = 1 – (1-.78)*(1-.41) = .87

Peavy Intersection
CR1=Convert minor street stop to RAB
CR2=Improve Pavement Friction

CR=1 – (1-CR1)*(1-CR2)

All: CR=1 – (1-.71)*(1-.41) = .83
All (injury): CR=1 – (1-.87)*(1-.41) = .92

CSAH 18 (Lyman Blvd) from TH 41 to CSAH 15 (2013 - 2015) - created on 06-17-2016 by rile1c

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

SYS	NUM	REF_POINT	GIS_ROUTE	GIS_TM	RD_DIR	ELEM	RELY	INV	R_U
10	06450094	000+00.720	1006450094	0.720	Z		1	3	U
04	10000018	003+00.347	0410000018	3.347	W		1	3	U
04	10000018	003+00.353	0410000018	3.353	Z		1	1	U
04	10000018	003+00.446	0410000018	3.446	Z		1	2	U
04	10000018	003+00.459	0410000018	3.459	E		1	1	U
04	10000018	003+00.461	0410000018	3.461	Z		1	3	U
04	10000018	003+00.461	0410000018	3.461	Z		1	3	U
04	10000018	003+00.475	0410000018	3.475	Z		1	3	U
04	10000018	003+00.517	0410000018	3.517	Z		2	3	U
~~04~~	~~10000018~~	~~003+00.908~~	~~0410000018~~	~~3.908~~	~~Z~~	—	~~3~~	~~0~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~

:he

ATP	CO	CITY	DOW	MONTH	DAY	YEAR	TIME	SEV
DRIVER OF V1 WAS STOPPED ON NB PEAVEY RD AT STOP SIGN WAITING TO MAKE A LEFT TURN ONTO LYMAN BLVD W	10	0645	6-Fri	2	8	2013	1152	N
UNIT 2 WAS TRAVELING WEST ON LYMAN BLVD. DRIVER OF UNIT 1 WAS ON PEAVEY RD AND ENTERING LYMAN BLVD	10	0645	4-Wed	6	3	2015	1905	N
THE DRIVER OF THE GMC YUKON REAR ENDED THE TOYOTA PUSHING IT INTO THE LEXUS. NO INJURIES REPORTED.	10	0645	6-Fri	12	13	2013	1722	N
UNIT 1 WAS W/B ON 82ND STREET ABOUT 75 FEET WEST OF PEAVEY ROAD WHEN IT STRUCK A PARKED ORANGE SKID	10	0645	5-Thu	6	27	2013	0313	C
V2 WAS IN LEFT THROUGH LANE EAST BOUND, V1 WAS IN RIGHT LANE. V2 STATED HE RELIZED HE NEEDED TO TUR	10	0645	3-Tue	12	22	2015	1246	N
DRIVER OF U1 STATED SHE WAS STOPPED ON LYMAN BLVD. @ PEAVEY ROAD, FACING WEST, WAITING TO MAKE A LE	10	0645	2-Mon	10	27	2014	0720	N
UNIT 1 WAS TRAVELING WB ON LYMAN BOULEVARD MAKING A SOUTHBOUND TURN ONTO PEAVEY RD. A SCHOOL BUS WA	10	0645	2-Mon	2	4	2013	0627	N
UNIT 2 WAS STOPEPD IN TRAFFIC WHILE WAITING FOR A VEHICLE TO TURN NORTH. UNIT 1 STRUCK THE REAR OF	10	0645	4-Wed	11	13	2013	1521	N
DRIVER OF U1 STATED SHE WAS TRAVELING WB ON LYMAN BLVD. WHEN EB U2 LOST CONTROL, ENTERED HER LANE C	10	0645	3-Tue	12	16	2014	0735	B
~~_____~~	~~10~~	~~0645~~	~~5-Thu~~	~~12~~	~~10~~	~~2015~~	~~0700~~	~~N~~
~~ON 10/21/2014 AT 1517 HOURS, THERE WAS A TWO VEHICLE PROPERTY DAMAGE CRASH AT THE INTERSECTION OF L~~	~~10~~	~~0640~~	~~3 Tue~~	~~10~~	~~21~~	~~2014~~	~~1517~~	~~N~~
~~VEHS WERE EB ON CO RD 18. VEH CROSSED OVER CO RD 15. DRIVER#1 STATED TRAFFIC WAS SLOWED AND SHE HAD~~	~~10~~	~~0640~~	~~3 Tue~~	~~4~~	~~7~~	~~2015~~	~~1519~~	~~N~~
~~ON 01/06/2015 AT 0800 HOURS, THERE WAS A SINGLE VEHICLE ACCIDENT ON LYMAN BLVD. AT THE INTERSECTION~~	~~10~~	~~0640~~	~~3 Tue~~	~~1~~	~~6~~	~~2015~~	~~0800~~	~~N~~

															PERSON1		
NUM_KILLED	NUM_VEH	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT
0	2	4	30	1	1	1	4	1	2	0	2	1	6	130390074	1	1	11
0	2	2	45	1	5	1	4	1	1	3	2	2	8	151540146	3	1	6
0	3	1	30	1	1	1	1	4	2	0	3	2	8	133510536	3	7	11
0	1	1	30	21	1	1	98	99	1	0	1	1	8	131790004	1	7	1
0	2	4	45	1	2	1	4	1	2	0	1	1	90	153560329	1	3	5
0	2	4	40	1	1	1	4	4	1	0	1	1	6	143000063	1	7	11
0	2	4	40	1	5	1	98	4	1	0	5	1	5	130350048	1	3	1
0	2	1	30	1	1	1	98	1	1	0	1	1	8	133170186	3	3	1
0	2	1	45	1	5	1	98	1	2	4	5	4	8	143500103	1	7	1
~~0~~	~~1~~	~~0~~	~~45~~	~~8~~	~~90~~	~~0~~	~~98~~	~~2~~	~~2~~	~~0~~	~~1~~	~~0~~	~~0~~	~~160120015~~	~~3~~	~~7~~	~~1~~
~~0~~	~~2~~	~~4~~	~~45~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~3~~	~~142940077~~	~~8~~	~~7~~	~~11~~
~~0~~	~~3~~	~~4~~	~~50~~	~~1~~	~~1~~	~~1~~	~~98~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~5~~	~~150970095~~	~~1~~	~~3~~	~~10~~
~~0~~	~~1~~	~~2~~	~~45~~	~~26~~	~~8~~	~~3~~	~~1~~	~~2~~	~~1~~	~~0~~	~~5~~	~~5~~	~~3~~	~~150060066~~	~~1~~	~~3~~	~~6~~

								PERSON2											PERSON3
FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE
1	0	1	N	4	1	65	M	1	1	1	15	0	1	N	4	1	27	M	
15	0	1	N	4	1	28	M	1	7	1	1	0	1	N	4	1	16	M	
1	0	1	N	4	1	41	F	1	7	11	1	0	1	N	4	1	20	F	3
15	0	1	C	1	1	33	F												
8	0	1	N	4	1	22	M	1	3	1	1	0	1	N	4	1	19	F	
1	0	1	N	4	1	48	F	3	7	1	15	0	1	N	4	1	61	M	
8	0	1	N	4	1	27	F	35	7	6	0	0	1	N	4	1	38	M	
15	0	1	N	4	1	20	M	1	3	11	1	0	1	N	4	1	34	M	
1	0	1	B	4	1	56	F	4	3	1	61	46	1	N	4	1	48	F	
~~0~~	~~0~~	~~1~~	~~N~~	~~4~~	~~0~~	~~54~~	~~M~~												
~~1~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~64~~	~~M~~	~~3~~	~~7~~	~~10~~	~~15~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~16~~	~~M~~	
~~4~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~17~~	~~F~~	~~1~~	~~3~~	~~10~~	~~1~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~18~~	~~M~~	~~1~~
~~3~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~17~~	~~F~~												

										PERSON4									
DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX
7																				
~~3~~																				

TH 41 From 350' North and South of CSAH 18 (2013 -2015) - created on 06-17-2016 by

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

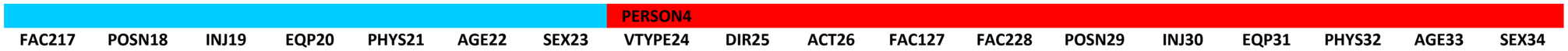
SYS	NUM	REF_POINT	GIS_ROUTE	GIS_TM	RD_DIR	ELEM	RELY	INV	R_U
03	00000041	006+00.224	0300000041	6.219	N		2	2	U
03	00000041	006+00.230	0300000041	6.225	E		1	3	U
03	00000041	006+00.230	0300000041	6.225	Z		1	1	U
03	00000041	006+00.230	0300000041	6.225	Z		1	3	U
03	00000041	006+00.230	0300000041	6.225	Z		1	3	U
03	00000041	006+00.230	0300000041	6.225	S		1	1	U

y rile1che

ATP	CO	CITY	DOW	MONTH	DAY	YEAR	TIME	SEV
I ARRIVED AT THE ACCIDENT AND SPOKE TO DRIVER OF UNIT 1. DRIVER OF UNIT 1 STATED HE WAS DRIVING NOR	10	0645	1-Sun	9	20	2015	1700	C
DRIVER OF VEHICLE #1 WAS TRAVELING EAST ON LYMAN BLVD PASSING STRAIGHT THROUGH THE INTERSECTION WIT	10	0645	6-Fri	3	15	2013	1559	N
D1 STATED SLOWING IN TRAFFIC AND HIT FROM BEHIND. D2 STATED SLID ON RAIN AND HIT V1. V2 TOWED B	10	0645	2-Mon	7	7	2014	1725	N
DRIVER OF U1 STATED HE WAS TRAVELING SB ON MNTH 41 APPROACHING LYMAN BLVD WHEN THE LIGHT TURNED RED	10	0645	3-Tue	2	3	2015	1526	N
VEHICLE 1 WAS NB ON MNTH 41 APPROACHING LYMAN BLVD. VEHICLE 2 WAS STOPPED NB 41 AT LYMAN BLVD AS TH	10	0645	6-Fri	8	21	2015	1629	N
V3 STOPPED IN TRAFFIC. V2 STOPPED DIRECTLY BEHIND. D1 STATED SHE WAS DISTRACTED AND WAS UNABLE TO	10	0645	6-Fri	12	11	2015	1729	N

															PERSON1				
NUM_KILLED	NUM_VEH	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2
0	2	1	50	1	1	1	1	1	3	2	2	2	8	152640134	1	1	10	1	0
0	2	4	40	1	3	1	1	1	2	0	2	1	3	130740171	1	3	1	1	0
0	2	1	55	1	1	1	98	1	3	0	2	1	8	141900238	2	3	10	1	0
0	2	4	50	1	1	1	1	1	4	0	3	1	5	150340220	3	5	11	1	0
0	2	4	50	1	1	1	1	1	1	1	1	1	8	152330136	2	1	1	15	15
0	3	4	50	1	1	1	1	4	1	0	1	1	8	153480317	1	5	11	1	0

						PERSON2											PERSON3			
POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE2	DIR3	ACT4	FAC15	FAC26	POSN7	INJ8	EQP9	PHYS10	AGE11	SEX12	VTYPE13	DIR14	ACT15	FAC116
1	C	4	1	61	M	2	1	10	9	0	1	N	4	1	44	M				
1	N	4	1	53	M	1	5	6	2	0	1	N	4	1	30	F				
1	N	4	1	30	M	1	3	10	4	0	1	N	4	1	26	M				
1	N	4	1	33	F	4	5	10	61	15	1	N	4	1	56	M				
1	N	4	1	35	M	1	1	11	1	1	1	N	4	1	23	F				
1	N	4	1	33	F	3	5	11	1	0	1	N	4	1	41	M	3	5		


PERSON4
FAC217
POSN18
INJ19
EQP20
PHYS21
AGE22
SEX23
VTYPE24
DIR25
ACT26
FAC127
FAC228
POSN29
INJ30
EQP31
PHYS32
AGE33
SEX34

Minnesota Department of Transportation
Metro District
1500 West County Road B-2
Roseville, MN 5511

July 8, 2016

Darin Mielke PE LSIT PMP
Assistant Public Works Director, Deputy County Engineer
Carver County Public Works
11360 Highway 212, Suite 1
Cologne, MN 55322

RE: Regional Solicitation Application for CSAH 18 Reconstruction Project - Phase 2A

Dear Mr. Mielke:

Thank you for requesting a letter of support from MnDOT for the Metropolitan Council/Transportation Advisory Board (TAB) 2016 Regional Solicitation. Your application for the CSAH 18 Reconstruction Project - Phase 2A impacts MnDOT right of way on TH 41.

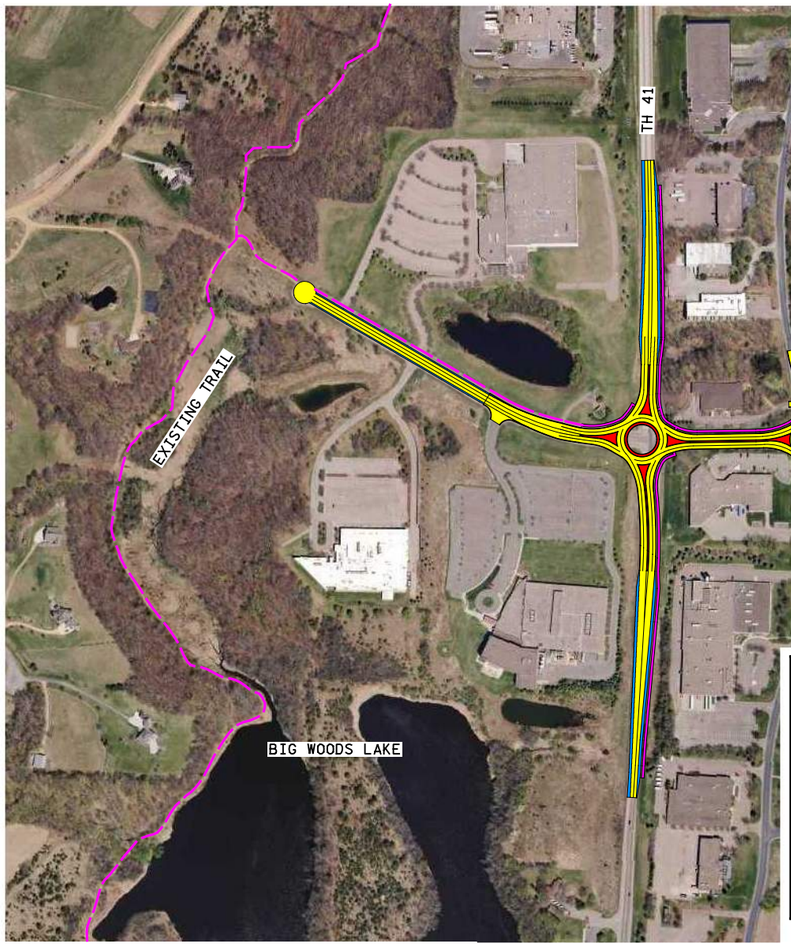
MnDOT, as the agency with jurisdiction over TH 41, would allow the improvements included in the application for CSAH 18 Reconstruction Project - Phase 2A. Details of a future maintenance agreement with the City would be determined during project development to define how the improvements will be maintained for the project's useful life.

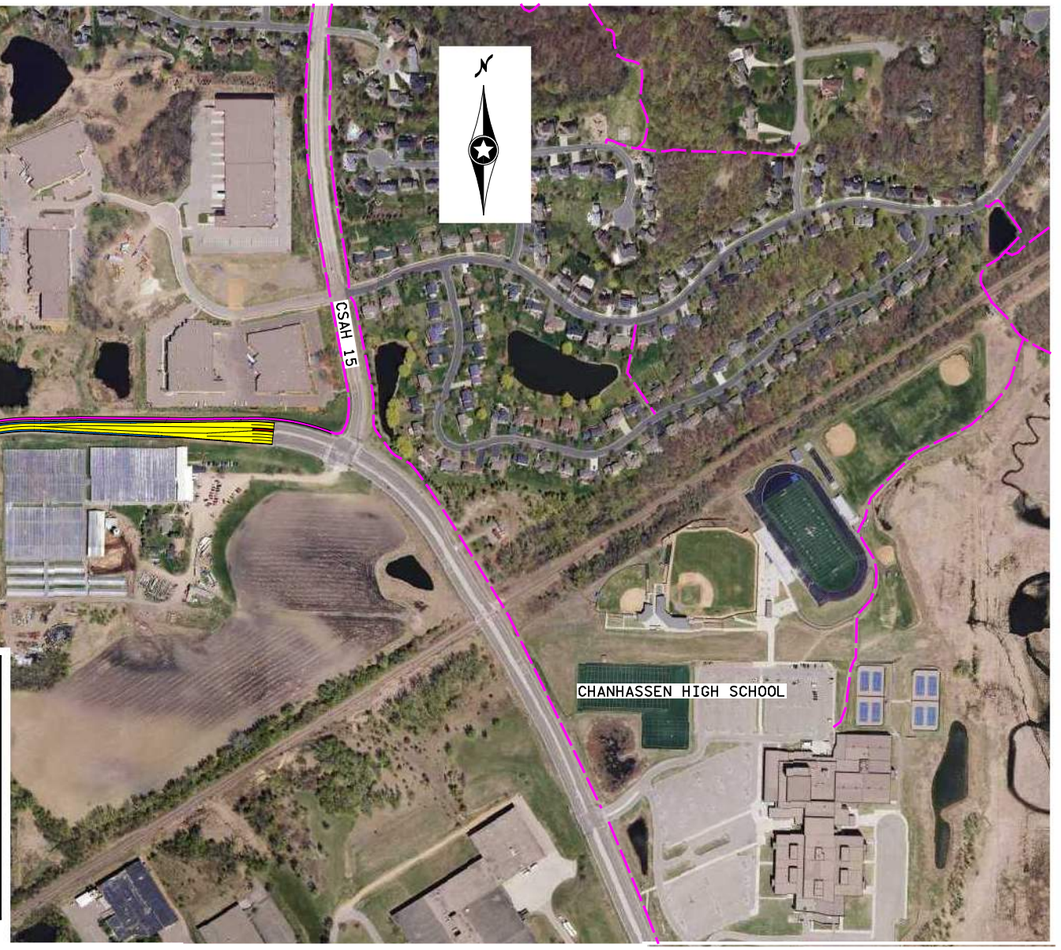
This project has no funding from MnDOT. In addition, the Metro District currently has no discretionary funding in year 2020 of the State Transportation Improvement Program (STIP) or year 2021 of the Capital Highway Investment Plan (CHIP) to assist with construction or assist with MnDOT services such as the design or construction engineering of the project. Please continue to work with MnDOT Area staff to assist in identifying additional project funding if needed.

Sincerely,

Scott McBride, P.E.
Metro District Engineer

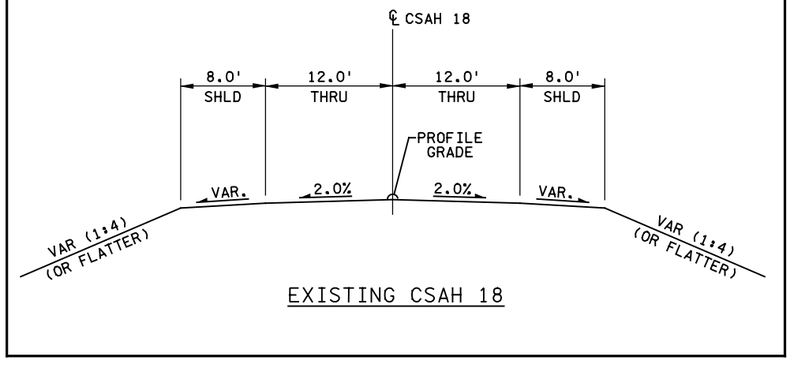
Cc: Elaine Koustsoukos, Metropolitan Council
Jon Solberg, MnDOT Metro District – South Area Manager



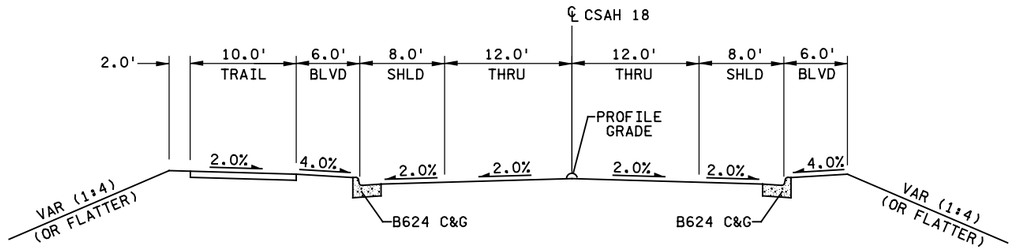


LEGEND

- PAVED ROADWAY
- RAISED MEDIANS & CURBS
- PAVED SHOULDERS
- PROPOSED TRAILS
- EXISTING TRAILS



EXISTING CSAH 18



PROPOSED CSAH 18
DESIGN SPEED = 45 MPH

H:\Projects\09000\9282\CAD_BIM\Graphics\9282_gr04.dgn

SRF Consulting Group, Inc.

Job # 9282
6/9/2016

CSAH 18

CSAH 18 from TH 41 to CSAH 15
Carver County

Figure 1

Figure 2 (Street Views)

CSAH 18 (west) at TH 41

CSAH 18 (west) at Peavey Road

CSAH 18 (east) at Norex Drive

CSAH 18 (east) at CSAH 15

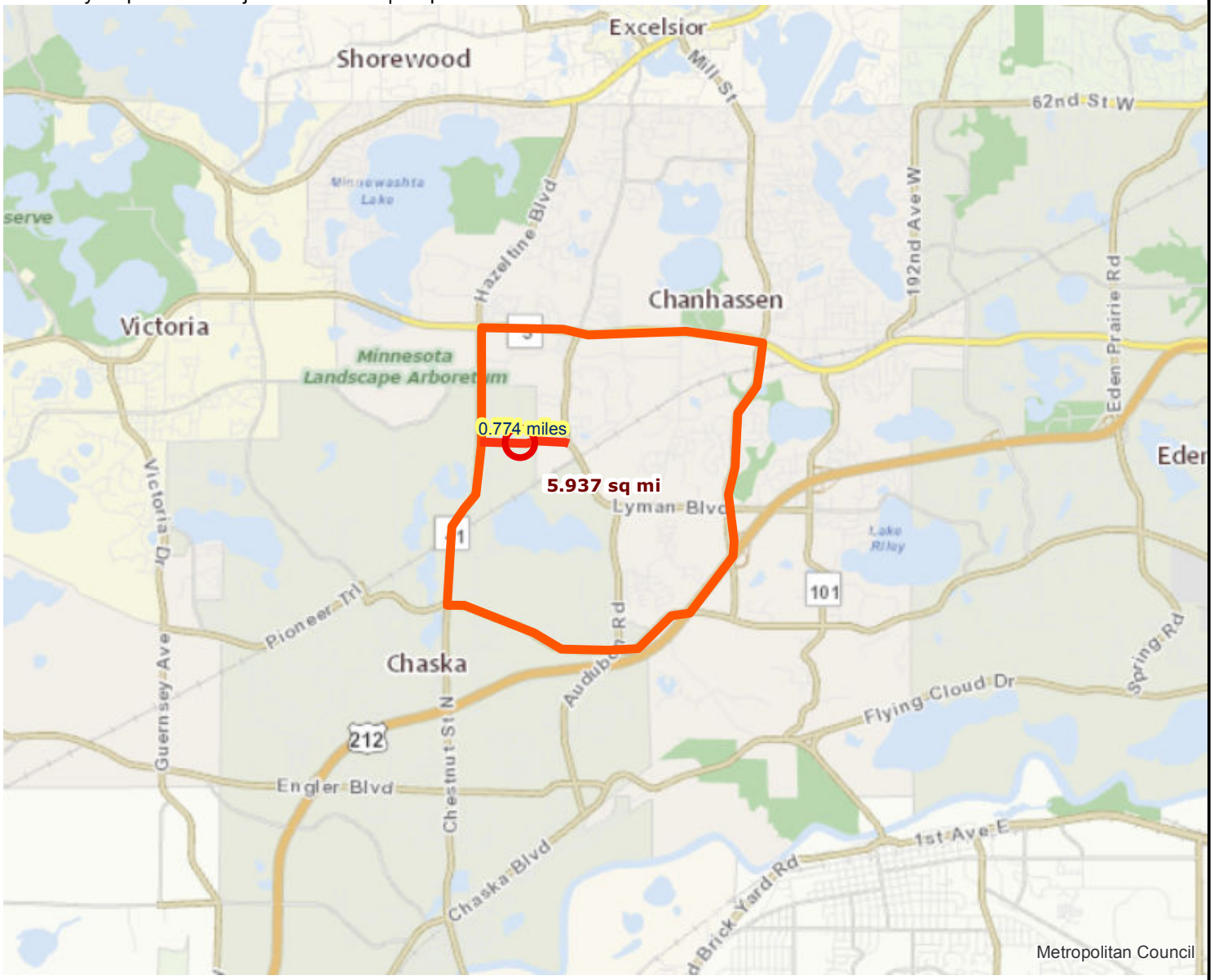
Roadway Area Definition

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957

Results

Project Length: 0.774 miles

Project Area: 5.937 sq mi



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

0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016
LandscapeRSA1

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

METROPOLITAN COUNCIL

Regional Economy

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957

Results

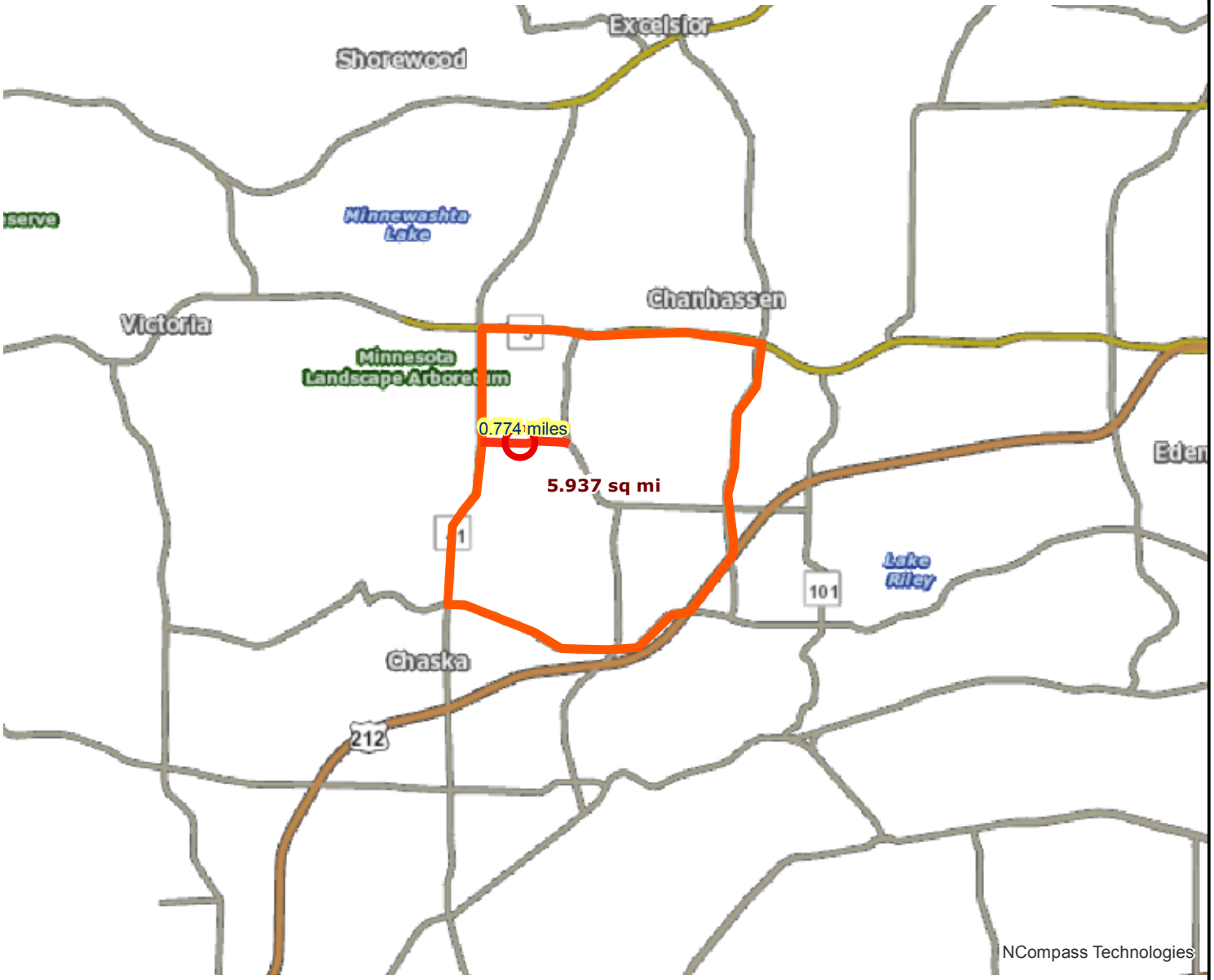
WITHIN ONE MI of project:

Totals by City:

Chanhassen
Population: 3284
Employment: 1724
Mfg and Dist Employment: 266

Chaska
Population: 2731
Employment: 6386
Mfg and Dist Employment: 4833

Postsecondary Students:
0



Project Points
Project
Project Area
PostSecondary Education Centers
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016
LandscapeRSA5

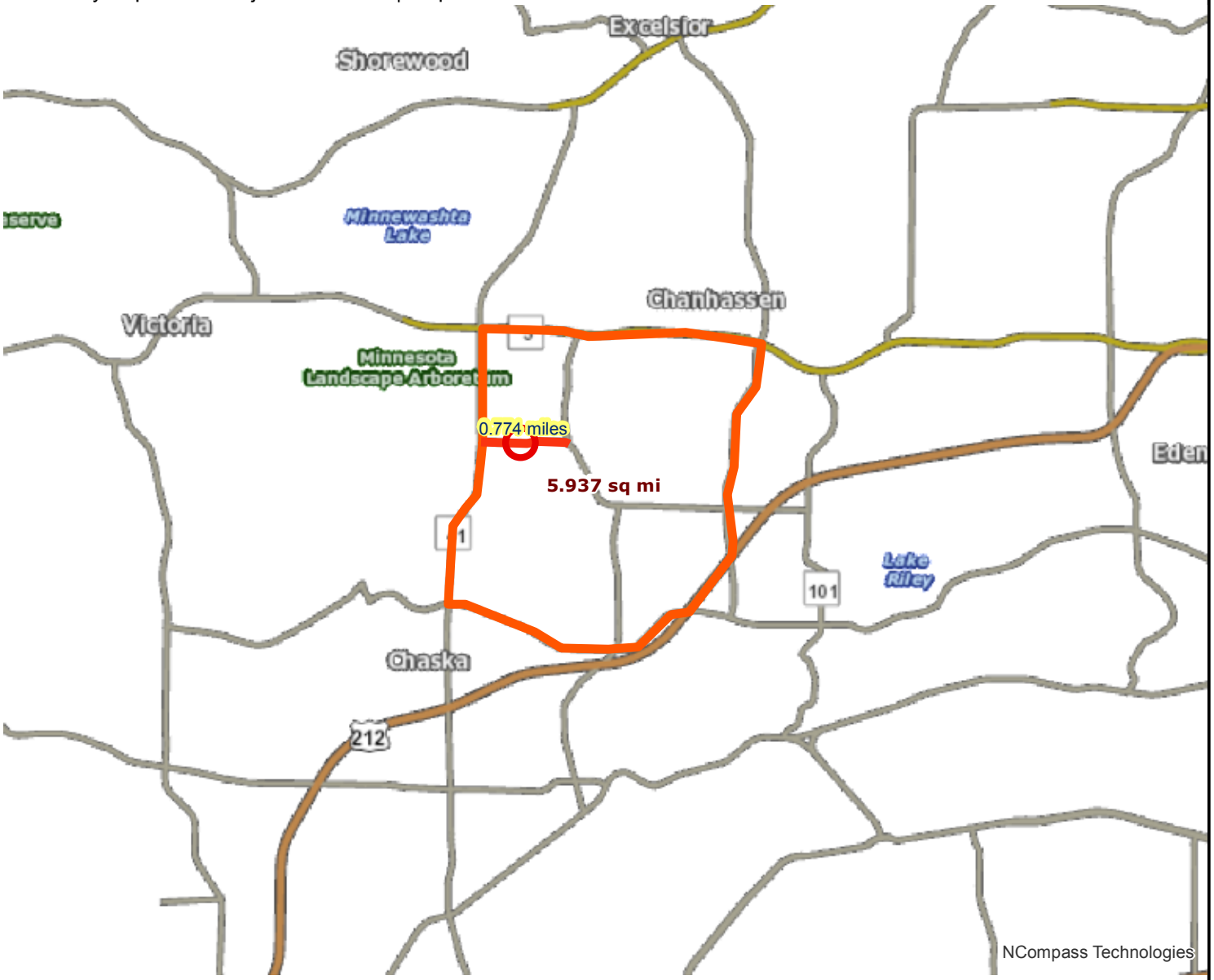
METROPOLITAN COUNCIL

Socio-Economic Conditions

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957

Results

Project located in
a census tract that is below
the regional average for
population in poverty
or populations of color,
or includes children,
people with disabilities,
or the elderly:
(0 to 12 Points)



Project Points
Project
Project Area

Area of Concentrated Povertry > 50% residents of color
Area of Concentrated Poverty
Above reg'l avg conc of race/poverty

0 0.75 1.5 3 4.5 6 Miles

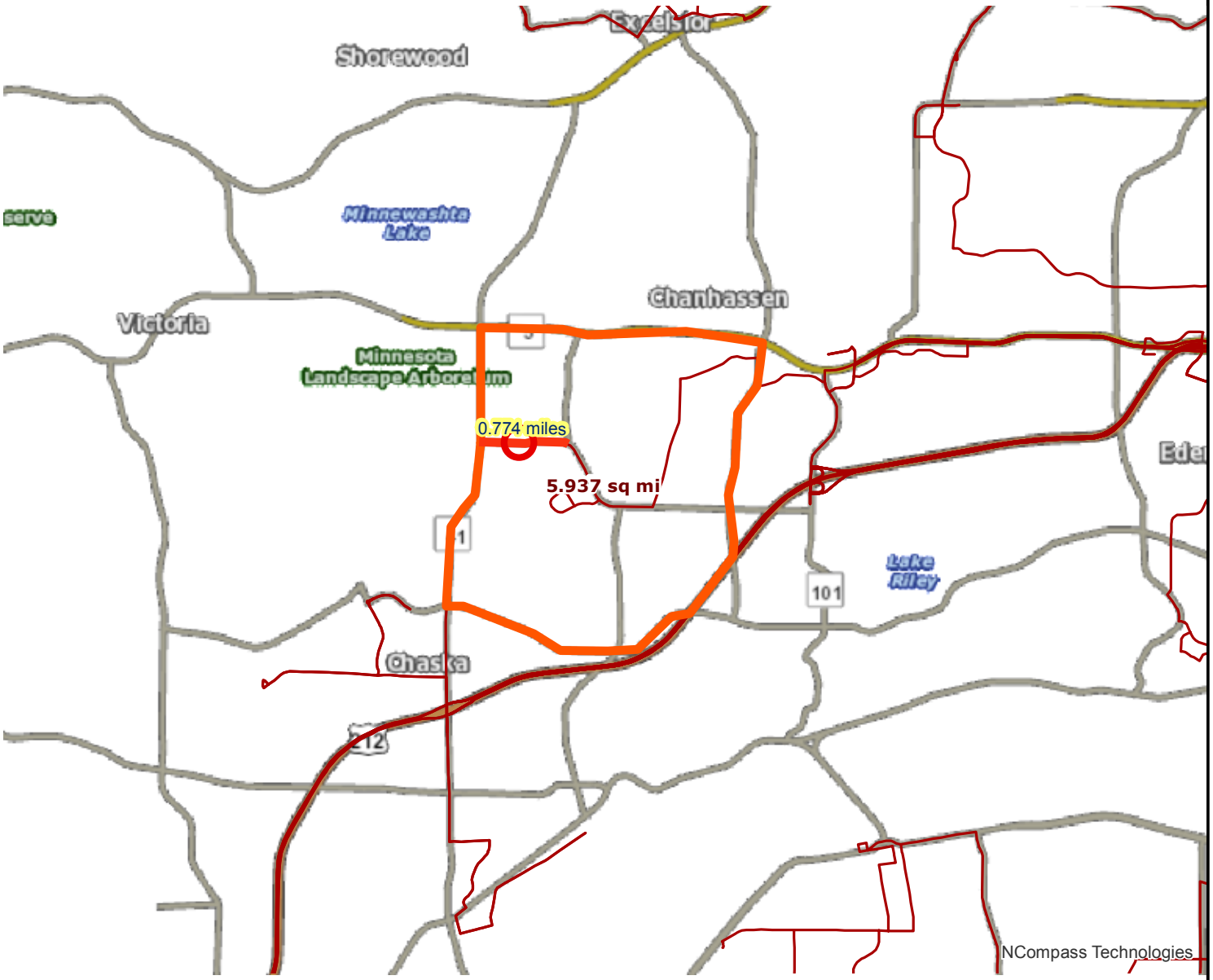
Created: 7/4/2016
LandscapeRSA2

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

METROPOLITAN COUNCIL

Transit Connections

Roadway Expansion Project: CSAH 18 | Map ID: 1467641396957



Results

Transit with a Direct Connection to project: 684

**indicates Planned Alignments*

Project Points | Project Area

Project | Transit Routes

0 0.75 1.5 3 4.5 6 Miles

Created: 7/4/2016

LandscapeRSA3

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

METROPOLITAN COUNCIL

HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 18	CSAH 18 and Peavy			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Minor Stop to RAB

Accident Diagram Codes			1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal	**F**									
	Personal Injury (PI)	**A**									
		B									
		C	1								**1**
	Property Damage	**PD**	4	1		2					**7**
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal	**F**									
	PI	**A**									
		B									
		C	-92%								
	Property Damage	**PD**	-83%	-83%		-100%					
Change in Crashes = No. of crashes **X** % change in crashes	Fatal	**F**									
	PI	**A**									
		B									
		C	**-0.92**								**-0.92**
	Property Damage	**PD**	**-3.32**	**-0.83**		**-2.00**					**-6.15**

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**			**$ 170,000**	
1. Discount Rate	**4.5%**	**C**	**-0.92**	**-0.31**	**$ 83,000**	**$ 25,477**
2. Project Service Life (n)	**20**	**PD**	**-6.15**	**-2.05**	**$ 7,600**	**$ 15,594**
		Total				**$ 41,071**

B/C= 0.10

Using present worth values,

B= $ 718,490

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 13	CSAH 18 and TH 41			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Convert signal to multilane RAB

Accident Diagram Codes		1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal **F**									
	Personal Injury (PI) **A**									
	B									
	C	1								**1**
	Property Damage **PD**	4		1						**5**
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal **F**									
	PI **A**									
	B									
	C	-87%								
	Property Damage **PD**	-69%		-69%						
Change in Crashes = No. of crashes **X** % change in crashes	Fatal **F**									
	PI **A**									
	B									
	C	**-0.87**								**-0.87**
	Property Damage **PD**	**-2.76**		**-0.69**						**-3.45**

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**			**$ 170,000**	
1. Discount Rate	**4.5%**	**C**	**-0.87**	**-0.29**	**$ 83,000**	**$ 24,092**
2. Project Service Life (n)	**20**	**PD**	**-3.45**	**-1.15**	**$ 7,600**	**$ 8,748**
		Total				**$ 32,840**

B/C= 0.08

Using present worth values,

B= $ 574,500

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

HSIP worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
	CSAH 18	CSAH 18 Segment			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Reconstruct Pavement

			1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian	6, 90, 99 Other	Total
Study Period: Number of Crashes	Fatal	**F**									
	Personal Injury (PI)	**A**									
		B				1					**1**
		C									
	Property Damage	**PD**									
% Change in Crashes *Use Crash Modification Factors Clearinghouse	Fatal	**F**									
	PI	**A**									
		B				-41%					
		C									
	Property Damage	**PD**									
Change in Crashes = No. of crashes **x** % change in crashes	Fatal	**F**									
	PI	**A**									
		B				**-0.41**					**-0.41**
		C									
	Property Damage	**PD**									

Year (Safety Improvement Construction): **2020**

		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
Project Cost (exclude Right of Way)	**$ 6,889,500**					
Right of Way Costs (optional)		**F**			**$ 1,400,000**	
Traffic Growth Factor	**3%**	**A**			**$ 570,000**	
Capital Recovery		**B**	**-0.41**	**-0.14**	**$ 170,000**	**$ 23,255**
1. Discount Rate	**4.5%**	**C**			**$ 83,000**	
2. Project Service Life (n)	**20**	**PD**			**$ 7,600**	
		Total				**$ 23,255**

B/C= 0.06

Using present worth values,

B= $ 406,814

C= $ 6,889,500

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology 2015

- Countermeasure: Improve pavement friction (increase skid resistance)

CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
0.799	20.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.667	33.3	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.819	18.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.797	20.3	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

1.271	-27.1	★★★★☆	All	All	All	Lyon and Persaud, 2008	

-

0.426	57.4	★★★★☆	Wet road	All	All	Lyon and Persaud, 2008	

-

0.372	62.8	★★★★☆	Wet road	All	All	Lyon and Persaud,	

0.575	42.5	★★★★☆	Rear end,Wet road	All		Lyon and Persaud, 2008
0.59	41	★★★☆☆	All	All	All	Lyon and Persaud, 2008
0.589	41.1	★★★☆☆	All	All	All	Lyon and Persaud, 2008
0.361	63.9	★★★☆☆	Wet road	All	All	Lyon and Persaud, 2008
0.304	69.6	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008
0.943	5.7	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008
0.504	49.6	★★★☆☆	Rear end	All	All	Lyon and Persaud, 2008

0.221	77.9	★★★☆☆	Rear end,Wet road	All	All	Lyon and Persaud, 2008
0.787	21.3	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.828	17.2	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.898	10.2	★★★☆☆	Angle	All	All	Lyon and Persaud, 2008
0.799	20.1	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008
0.47	53	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008
0.828	17.2	★★★☆☆	Angle,Wet road	All	All	Lyon and Persaud, 2008

▼ Countermeasure: Convert intersection with minor-road stop control to modern roundabout

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.56 [B]	44	★★★★★	All	All	All	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.18 [B]	82	★★★★★	All	Serious Injury,Minor Injury	All	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.29 [B]	71	★★★★★	All	All	Rural	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.13 [B]	87	★★★★★	All	Serious Injury,Minor Injury	Rural	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.71 [B]	29	★★★★☆	All	All	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.19 [B]	81	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.61 [B]	39	★★★★☆	All	All	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]
☐	0.22 [B]	78	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed from "convert ... [read more]

*NOTE: You can compare CMFs across countermeasures, subcategories, and categories.

▼ Countermeasure: Convert signalized intersection to modern roundabout

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.68	32	★★★★☆	All	Serious injury,Minor injury	Not specified	De Brabander and Vereeck, 2007	Countermeasure name has been slightly ... [read more]
☐	0.4 [B]	60	★★★★☆	All	Serious Injury,Minor Injury	Urban	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.33 [B]	67	★★★★☆	All	All	Suburban	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.52 [B]	48	★★★★☆	All	All	All	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.22 [B]	78	★★★★☆	All	Serious Injury,Minor Injury	All	Rodegerdts et al., 2007	Countermeasure name changed to match ... [read more]
☐	0.79	21	★★★★☆	All	All	Urban and suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]
☐	0.34	66	★★★★☆	All	Serious injury,Minor injury	Urban and suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]
☐	0.58	42	★★★★☆	All	All	Suburban	Gross et al., 2012	Countermeasure name has been slightly ... [read more]

Dual CRF for CSAH 18 between TH 41 and Norex Dr

Improvements include a converting the signal at TH 41 and CSAH 18 to a multilane RAB and converting the intersections of Norex Dr and Peavy Ln to roundabouts

TH 41 Intersection
CR1=Convert Signal to Multilane RAB
CR2=Improve Pavement Friction

CR=1 – (1-CR1)*(1-CR2)

All = CR = 1 – (1-.48)*(1-.41)= .69
All (injury): CR = 1 – (1-.78)*(1-.41) = .87

Peavy Intersection
CR1=Convert minor street stop to RAB
CR2=Improve Pavement Friction

CR=1 – (1-CR1)*(1-CR2)

All: CR=1 – (1-.71)*(1-.41) = .83
All (injury): CR=1 – (1-.87)*(1-.41) = .92

CSAH 18 (Lyman Blvd) from TH 41 to CSAH 15 (2013 - 2015) - created on 06-17-2016 by rile1c

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

SYS	NUM	REF_POINT	GIS_ROUTE	GIS_TM	RD_DIR	ELEM	RELY	INV	R_U
10	06450094	000+00.720	1006450094	0.720	Z		1	3	U
04	10000018	003+00.347	0410000018	3.347	W		1	3	U
04	10000018	003+00.353	0410000018	3.353	Z		1	1	U
04	10000018	003+00.446	0410000018	3.446	Z		1	2	U
04	10000018	003+00.459	0410000018	3.459	E		1	1	U
04	10000018	003+00.461	0410000018	3.461	Z		1	3	U
04	10000018	003+00.461	0410000018	3.461	Z		1	3	U
04	10000018	003+00.475	0410000018	3.475	Z		1	3	U
04	10000018	003+00.517	0410000018	3.517	Z		2	3	U
~~04~~	~~10000018~~	~~003+00.908~~	~~0410000018~~	~~3.908~~	~~Z~~	—	~~3~~	~~0~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~
~~04~~	~~10000018~~	~~004+00.111~~	~~0410000018~~	~~4.111~~	~~Z~~	—	~~1~~	~~2~~	~~U~~

:he

ATP	CO	CITY	DOW	MONTH	DAY	YEAR	TIME	SEV
DRIVER OF V1 WAS STOPPED ON NB PEAVEY RD AT STOP SIGN WAITING TO MAKE A LEFT TURN ONTO LYMAN BLVD W	10	0645	6-Fri	2	8	2013	1152	N
UNIT 2 WAS TRAVELING WEST ON LYMAN BLVD. DRIVER OF UNIT 1 WAS ON PEAVEY RD AND ENTERING LYMAN BLVD	10	0645	4-Wed	6	3	2015	1905	N
THE DRIVER OF THE GMC YUKON REAR ENDED THE TOYOTA PUSHING IT INTO THE LEXUS. NO INJURIES REPORTED.	10	0645	6-Fri	12	13	2013	1722	N
UNIT 1 WAS W/B ON 82ND STREET ABOUT 75 FEET WEST OF PEAVEY ROAD WHEN IT STRUCK A PARKED ORANGE SKID	10	0645	5-Thu	6	27	2013	0313	C
V2 WAS IN LEFT THROUGH LANE EAST BOUND, V1 WAS IN RIGHT LANE. V2 STATED HE RELIZED HE NEEDED TO TUR	10	0645	3-Tue	12	22	2015	1246	N
DRIVER OF U1 STATED SHE WAS STOPPED ON LYMAN BLVD. @ PEAVEY ROAD, FACING WEST, WAITING TO MAKE A LE	10	0645	2-Mon	10	27	2014	0720	N
UNIT 1 WAS TRAVELING WB ON LYMAN BOULEVARD MAKING A SOUTHBOUND TURN ONTO PEAVEY RD. A SCHOOL BUS WA	10	0645	2-Mon	2	4	2013	0627	N
UNIT 2 WAS STOPEPD IN TRAFFIC WHILE WAITING FOR A VEHICLE TO TURN NORTH. UNIT 1 STRUCK THE REAR OF	10	0645	4-Wed	11	13	2013	1521	N
DRIVER OF U1 STATED SHE WAS TRAVELING WB ON LYMAN BLVD. WHEN EB U2 LOST CONTROL, ENTERED HER LANE C	10	0645	3-Tue	12	16	2014	0735	B
~~_____~~	~~10~~	~~0645~~	~~5-Thu~~	~~12~~	~~10~~	~~2015~~	~~0700~~	~~N~~
~~ON 10/21/2014 AT 1517 HOURS, THERE WAS A TWO VEHICLE PROPERTY DAMAGE CRASH AT THE INTERSECTION OF L~~	~~10~~	~~0640~~	~~3 Tue~~	~~10~~	~~21~~	~~2014~~	~~1517~~	~~N~~
~~VEHS WERE EB ON CO RD 18. VEH CROSSED OVER CO RD 15. DRIVER#1 STATED TRAFFIC WAS SLOWED AND SHE HAD~~	~~10~~	~~0640~~	~~3 Tue~~	~~4~~	~~7~~	~~2015~~	~~1519~~	~~N~~
~~ON 01/06/2015 AT 0800 HOURS, THERE WAS A SINGLE VEHICLE ACCIDENT ON LYMAN BLVD. AT THE INTERSECTION~~	~~10~~	~~0640~~	~~3 Tue~~	~~1~~	~~6~~	~~2015~~	~~0800~~	~~N~~

															PERSON1		
NUM_KILLED	NUM_VEH	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT
0	2	4	30	1	1	1	4	1	2	0	2	1	6	130390074	1	1	11
0	2	2	45	1	5	1	4	1	1	3	2	2	8	151540146	3	1	6
0	3	1	30	1	1	1	1	4	2	0	3	2	8	133510536	3	7	11
0	1	1	30	21	1	1	98	99	1	0	1	1	8	131790004	1	7	1
0	2	4	45	1	2	1	4	1	2	0	1	1	90	153560329	1	3	5
0	2	4	40	1	1	1	4	4	1	0	1	1	6	143000063	1	7	11
0	2	4	40	1	5	1	98	4	1	0	5	1	5	130350048	1	3	1
0	2	1	30	1	1	1	98	1	1	0	1	1	8	133170186	3	3	1
0	2	1	45	1	5	1	98	1	2	4	5	4	8	143500103	1	7	1
~~0~~	~~1~~	~~0~~	~~45~~	~~8~~	~~90~~	~~0~~	~~98~~	~~2~~	~~2~~	~~0~~	~~1~~	~~0~~	~~0~~	~~160120015~~	~~3~~	~~7~~	~~1~~
~~0~~	~~2~~	~~4~~	~~45~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~3~~	~~142940077~~	~~8~~	~~7~~	~~11~~
~~0~~	~~3~~	~~4~~	~~50~~	~~1~~	~~1~~	~~1~~	~~98~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~5~~	~~150970095~~	~~1~~	~~3~~	~~10~~
~~0~~	~~1~~	~~2~~	~~45~~	~~26~~	~~8~~	~~3~~	~~1~~	~~2~~	~~1~~	~~0~~	~~5~~	~~5~~	~~3~~	~~150060066~~	~~1~~	~~3~~	~~6~~

								PERSON2											PERSON3
FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE
1	0	1	N	4	1	65	M	1	1	1	15	0	1	N	4	1	27	M	
15	0	1	N	4	1	28	M	1	7	1	1	0	1	N	4	1	16	M	
1	0	1	N	4	1	41	F	1	7	11	1	0	1	N	4	1	20	F	3
15	0	1	C	1	1	33	F												
8	0	1	N	4	1	22	M	1	3	1	1	0	1	N	4	1	19	F	
1	0	1	N	4	1	48	F	3	7	1	15	0	1	N	4	1	61	M	
8	0	1	N	4	1	27	F	35	7	6	0	0	1	N	4	1	38	M	
15	0	1	N	4	1	20	M	1	3	11	1	0	1	N	4	1	34	M	
1	0	1	B	4	1	56	F	4	3	1	61	46	1	N	4	1	48	F	
~~0~~	~~0~~	~~1~~	~~N~~	~~4~~	~~0~~	~~54~~	~~M~~												
~~1~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~64~~	~~M~~	~~3~~	~~7~~	~~10~~	~~15~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~16~~	~~M~~	
~~4~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~17~~	~~F~~	~~1~~	~~3~~	~~10~~	~~1~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~18~~	~~M~~	~~1~~
~~3~~	~~0~~	~~1~~	~~N~~	~~4~~	~~1~~	~~17~~	~~F~~												

										PERSON4									
DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX
7																				
~~3~~																				

TH 41 From 350' North and South of CSAH 18 (2013 -2015) - created on 06-17-2016 by

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

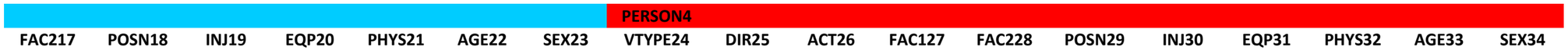
SYS	NUM	REF_POINT	GIS_ROUTE	GIS_TM	RD_DIR	ELEM	RELY	INV	R_U
03	00000041	006+00.224	0300000041	6.219	N		2	2	U
03	00000041	006+00.230	0300000041	6.225	E		1	3	U
03	00000041	006+00.230	0300000041	6.225	Z		1	1	U
03	00000041	006+00.230	0300000041	6.225	Z		1	3	U
03	00000041	006+00.230	0300000041	6.225	Z		1	3	U
03	00000041	006+00.230	0300000041	6.225	S		1	1	U

y rile1che

ATP	CO	CITY	DOW	MONTH	DAY	YEAR	TIME	SEV
I ARRIVED AT THE ACCIDENT AND SPOKE TO DRIVER OF UNIT 1. DRIVER OF UNIT 1 STATED HE WAS DRIVING NOR	10	0645	1-Sun	9	20	2015	1700	C
DRIVER OF VEHICLE #1 WAS TRAVELING EAST ON LYMAN BLVD PASSING STRAIGHT THROUGH THE INTERSECTION WIT	10	0645	6-Fri	3	15	2013	1559	N
D1 STATED SLOWING IN TRAFFIC AND HIT FROM BEHIND. D2 STATED SLID ON RAIN AND HIT V1. V2 TOWED B	10	0645	2-Mon	7	7	2014	1725	N
DRIVER OF U1 STATED HE WAS TRAVELING SB ON MNTH 41 APPROACHING LYMAN BLVD WHEN THE LIGHT TURNED RED	10	0645	3-Tue	2	3	2015	1526	N
VEHICLE 1 WAS NB ON MNTH 41 APPROACHING LYMAN BLVD. VEHICLE 2 WAS STOPPED NB 41 AT LYMAN BLVD AS TH	10	0645	6-Fri	8	21	2015	1629	N
V3 STOPPED IN TRAFFIC. V2 STOPPED DIRECTLY BEHIND. D1 STATED SHE WAS DISTRACTED AND WAS UNABLE TO	10	0645	6-Fri	12	11	2015	1729	N

															PERSON1				
NUM_KILLED	NUM_VEH	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2
0	2	1	50	1	1	1	1	1	3	2	2	2	8	152640134	1	1	10	1	0
0	2	4	40	1	3	1	1	1	2	0	2	1	3	130740171	1	3	1	1	0
0	2	1	55	1	1	1	98	1	3	0	2	1	8	141900238	2	3	10	1	0
0	2	4	50	1	1	1	1	1	4	0	3	1	5	150340220	3	5	11	1	0
0	2	4	50	1	1	1	1	1	1	1	1	1	8	152330136	2	1	1	15	15
0	3	4	50	1	1	1	1	4	1	0	1	1	8	153480317	1	5	11	1	0

						PERSON2											PERSON3			
POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE2	DIR3	ACT4	FAC15	FAC26	POSN7	INJ8	EQP9	PHYS10	AGE11	SEX12	VTYPE13	DIR14	ACT15	FAC116
1	C	4	1	61	M	2	1	10	9	0	1	N	4	1	44	M				
1	N	4	1	53	M	1	5	6	2	0	1	N	4	1	30	F				
1	N	4	1	30	M	1	3	10	4	0	1	N	4	1	26	M				
1	N	4	1	33	F	4	5	10	61	15	1	N	4	1	56	M				
1	N	4	1	35	M	1	1	11	1	1	1	N	4	1	23	F				
1	N	4	1	33	F	3	5	11	1	0	1	N	4	1	41	M	3	5		


PERSON4
FAC217
POSN18
INJ19
EQP20
PHYS21
AGE22
SEX23
VTYPE24
DIR25
ACT26
FAC127
FAC228
POSN29
INJ30
EQP31
PHYS32
AGE33
SEX34

2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1792
Total Delay / Veh (s/v)	28
CO Emissions (kg)	2.61
NOx Emissions (kg)	0.51
VOC Emissions (kg)	0.61

2: TH 41 (Hazeltine Blvd) & Lyman Blvd

Direction	All
Future Volume (vph)	1794
CO Emissions (kg)	2.50
NOx Emissions (kg)	0.49
VOC Emissions (kg)	0.58

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	175	495	708	614
Demand Flow Rate, veh/h	182	514	736	639
Vehicles Circulating, veh/h	975	682	159	358
Vehicles Exiting, veh/h	22	213	998	838
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.8	11.8	7.7	8.6
Approach LOS	A	B	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR
Assumed Moves	LT	TR	L	TR	LT	TR	LT	TR
RT Channelized								
Lane Util	0.473	0.527	0.665	0.335	0.470	0.530	0.469	0.531
Critical Headway, s	4.293	4.113	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	86	96	342	172	346	390	300	339
Cap Entry Lane, veh/h	544	571	678	701	1003	1011	864	879
Entry HV Adj Factor	0.957	0.967	0.962	0.963	0.961	0.962	0.962	0.960
Flow Entry, veh/h	82	93	329	166	333	375	289	326
Cap Entry, veh/h	520	552	652	675	964	972	831	845
V/C Ratio	0.158	0.168	0.505	0.245	0.345	0.386	0.347	0.385
Control Delay, s/veh	9.0	8.7	13.5	8.3	7.4	7.9	8.4	8.8
LOS	A	A	B	A	A	A	A	A
95th %tile Queue, veh	1	1	3	1	2	2	2	2

CITY OF CHANHASSEN
CARVER AND HENNEPIN COUNTIES, MINNESOTA

DATE: June 27, 2016 **RESOLUTION NO:** 2016-45

MOTION BY: Tjornhom **SECONDED BY:** McDonald

APPROVE APPLICATION FOR FEDERAL FUNDING FOR CSAH 18 (LYMAN BLVD.) FROM TH 41 (HAZELTINE BLVD.) TO CSAH 15 (GALPIN BLVD.)

WHEREAS, County State Aid Highway (CSAH) 18 is an A Minor Expander from TH 41 in the City of Chaska to CSAH 15 in the City of Chanhassen; and

WHEREAS, the 2030 Carver County Road System Plan recognizes the need to improve transportation connections and operations in order to provide a safe and efficient transportation system that meets the anticipated future needs and demands; and

WHEREAS, said transportation plan demonstrates the need to improve and modernize CSAH 18; and,

WHEREAS, the City of Chanhassen, City of Chaska, Carver County and the Minnesota Department of Transportation are working cooperatively to meet the future needs to CSAH 18 and adjacent highways and city streets; and

WHEREAS, the improvement and modernization of CSAH 18 will create a highly accessible facility that will help reduce traffic congestion, improve reliability to highway users, improve safety and enhance the economic vitality of the community.

NOW THEREFORE, BE IT RESOLVED by the Chanhassen City Council:

1. That the City of Chanhassen endorses Carver County's regional solicitation application submittal to the Metropolitan Council for federal funding for the improvement and modernization of CSAH 18 from approximately TH 41 (Hazeltine Blvd.) and CSAH 15 (Galpin Blvd.).

2. That the City of Chanhassen agrees to financially participate with the City of Chaska, the County of Carver and the Minnesota Department of Transportation in providing the matching funding at such time that the project is awarded federal funding subject to agreement on the project details.

Passed and adopted by the Chanhassen City Council this 27th day of June, 2016.

ATTEST:

Todd Gerhardt, City Manager

Denny Laufenburger, Mayor

YES	NO	ABSENT
Laufenburger	None	None
Campion		
McDonald		
Ryan		
Tjornhom		

CITY OF CHASKA
CARVER COUNTY, MINNESOTA

RESOLUTION

DATE JUNE 20, 2016 RESOLUTION NO. 16-39

MOTION BY COUNCILMEMBER BOE SECOND BY COUNCILMEMBER SCHULZ

A RESOLUTION ENDORSING CARVER COUNTY'S APPLICATION FOR FEDERAL FUNDING FOR CSAH 18 (LYMAN BOULEVARD) EXPANSION FROM TH 41 (HAZELTINE BOULEVARD) TO CSAH 15 (GALPIN BOULEVARD)

WHEREAS, County State Aid Highway (CSAH) 18 is an A Minor Expander from TH 41 in the City of Chaska to CSAH 15 in the City of Chanhassen;

WHEREAS, the 2030 Carver County Road System Plan recognizes the need to improve transportation connections and operations in order to provide a safe and efficient transportation system that meets the anticipated future needs and demands;

WHEREAS, said transportation plan demonstrates the need to improve and modernize CSAH 18;

WHEREAS, the City of Chanhassen, City of Chaska, Carver County and the Minnesota Department of Transportation are working cooperatively to meet the future needs to CSAH 18 and adjacent highways and city streets, and

WHEREAS, the improvement and modernization of CSAH 18 will create a highly accessible facility that will help reduce traffic congestion, improve reliability to the highway users, improve safety and enhance the economic vitality of the community;

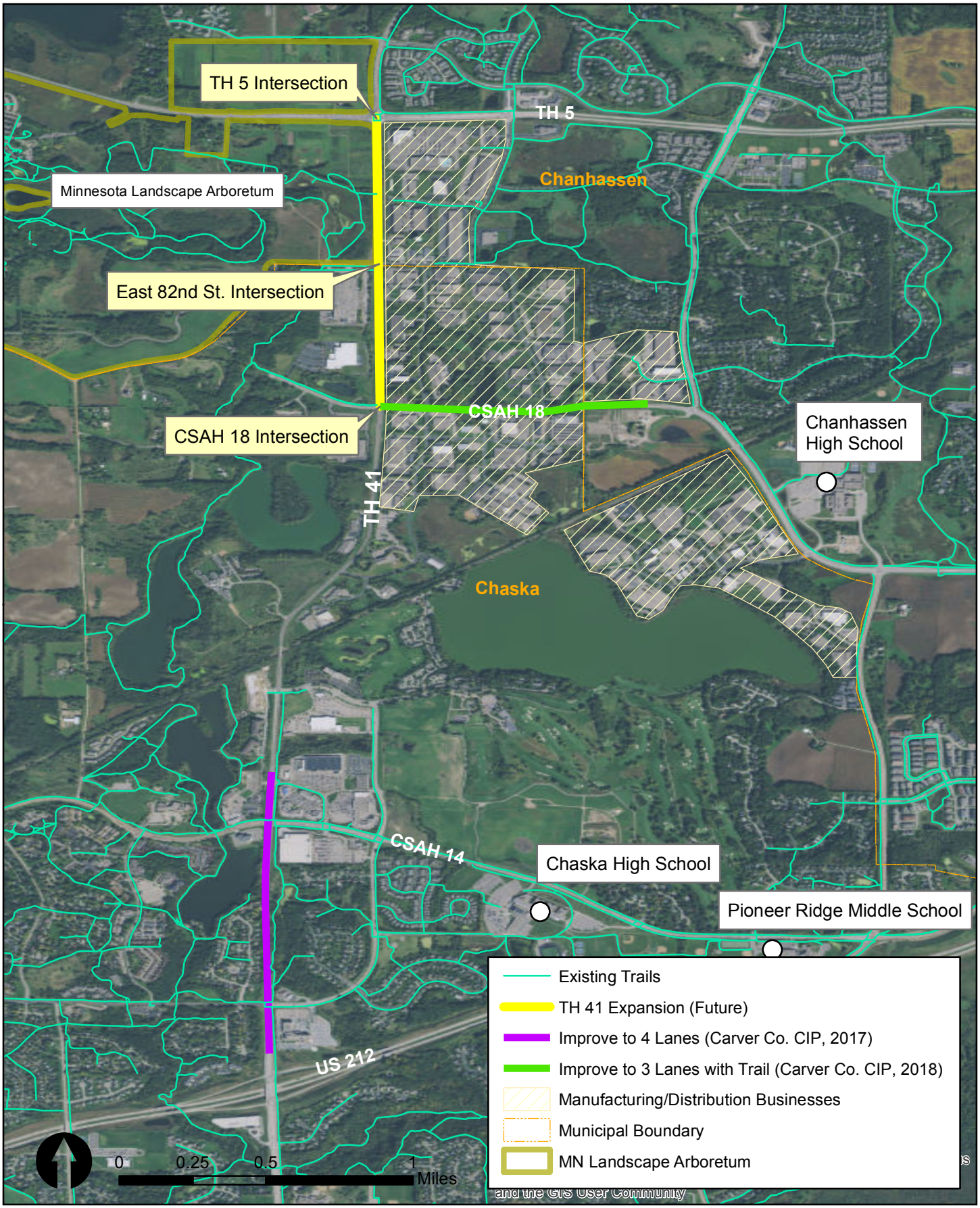
NOW, THEREFORE, BE IT RESOLVED that the City of Chaska endorses Carver County's regional solicitation application submittal to the Metropolitan Council for federal funding for the improvement and modernization of CSAH 18 (Lyman Boulevard) from approximately TH 41 (Hazeltine Boulevard) and CSAH 15 (Galpin Boulevard); and,

BE IT FURTHER RESOLVED, that the City of Chaska agrees to financially participate with the City of Chanhassen, the County of Carver and the Minnesota Department of Transportation in providing the matching funding at such time that the project is awarded federal funds subject to agreement on the project details.

Passed and adopted by the City Council of the City of Chaska, Minnesota, this 20th day of June, 2016.

Mark Windschitl, Mayor

Attest: _____
Chaska Deputy Clerk



Project Location

CSAH 18 from TH 41 to CSAH 15

Carver County

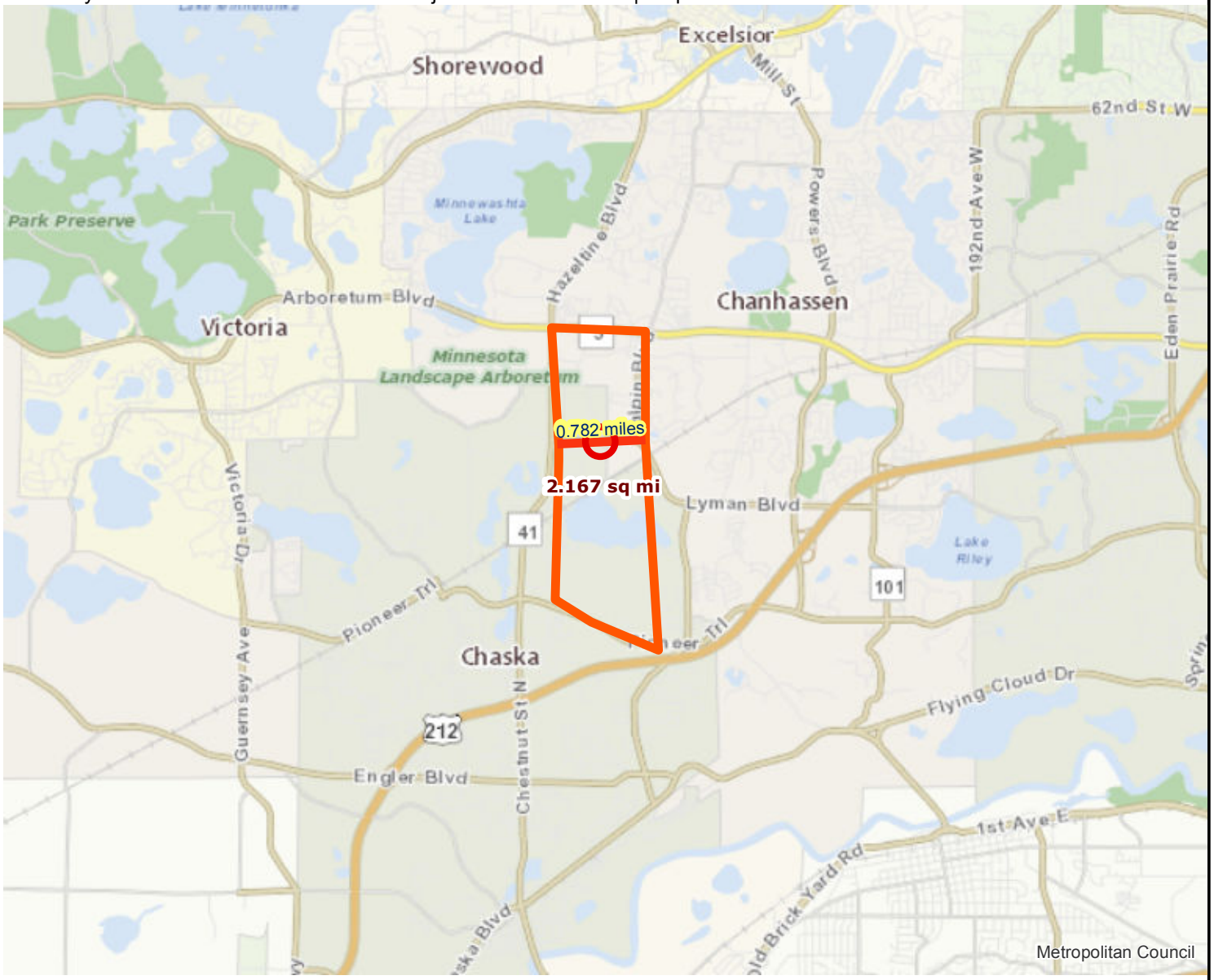
Roadway Area Definition

Roadway Reconstruction/Modernization Project: 05085 Csah 18 | Map ID: 1471966234040

Results

Project Length: 0.782 miles

Project Area: 2.167 sq mi



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

0 0.75 1.5 3 4.5 6 Miles

Created: 8/23/2016
LandscapeRSA1

For complete disclaimer of accuracy, please visit
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METROPOLITAN COUNCIL