Application

04774 - 2016 Roadway Modernization

05086 - CSAH 24 Safety Improvement Project

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	07/14/2016 8:55 AM

Primary Contact

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	Salutation	First Name	Middle Name	Last Name
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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 24 Safety Improvement Project

Primary County where the Project is Located Carver

Jurisdictional Agency (If Different than the Applicant): N/A

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

The proposed project includes the reconstruction and modernization of County State-Aid Highway CSAH) 24 from CSAH 10 to the east Carver County line (see Figure 1). The entire project length is 3.8 miles and the project limits are located in the City of Watertown and Watertown Township. Please note this grant request is for the A-Minor segment (2.5 miles) between the City of Watertown limits and Carver County limits (see Figure 2, shown as solid red line on Issues Map). The B-Minor segment in the City of Watertown (1.3 miles, shown as dashed red line on Issues Map) will coincide with this improvement as a separately funded Carver County project.

CSAH 24 is currently a two-lane rural roadway with 12-foot lanes and two-foot gravel shoulders. The improvements will upgrade CSAH 24 to state-aid standards, which includes new paved 12-foot travel lanes and eight-foot shoulders (six foot paved and two foot aggregate). The project will also reconstruct a deficient horizontal curve at Oxford Avenue to meet 55 mph design speed. The extra shoulder width will improve safety for all corridor users, including freight, farming implements, bicyclists and provide a safe emergency stopping area for motor vehicles.

CSAH 24 is identified in Carver County's Capital Improvement Plan to receive a full depth reclamation and shoulder widening in year 2019 (Project Number 158794). The project will preserve the roadway and improve the safety of this A Minor Connector. CSAH 24 is a crucial link to the regional transportation network from a rural perspective. CSAH 24 is relied on as a major east-west connector in order to access north-south routes: TH 25, CSAH 27, and CSAH 10. These corridors also provide direct access to other major east-west routes, such as TH 7 (Principal Arterial) and CSAH 20 (Minor Connector). These corridors will see a

significant increase in travel demand over the next ten to twenty years. The County's Travel Demand Model has forecasted CSAH 24's traffic volume to grow by 37 percent over the next 15 years (3,000 to 4,100 vehicles per day) within the city limits, and by 44 percent (2,300 to 3,300 vehicles per day) in Watertown Township. Population is expected to grow 72 percent (4,205 to 7,200) and employment is forecasted to more than double (525 to 1,200) over the next 25 years.
Based on the growth (traffic volumes, population, and employment), there is an immediate need to upgrade CSAH 24.

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) N/A

Project Length (Miles) 2.5

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 $2,103,160.00

Match Amount $525,790.00

Minimum of 20% of project total

Project Total $2,628,950.00

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)	$93,000.00
Removals (approx. 5% of total cost)	$212,250.00
Roadway (grading, borrow, etc.)	$358,100.00
Roadway (aggregates and paving)	$905,100.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$110,000.00
Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$0.00
Traffic Control	$75,000.00
Striping	$10,000.00
Signing	$70,000.00
Lighting	$0.00
Turf - Erosion & Landscaping	$148,000.00
Bridge	$0.00
Retaining Walls	$38,500.00
Noise Wall (do not include in cost effectiveness measure)	$0.00
Traffic Signals	$0.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$239,000.00
Other Roadway Elements	$370,000.00
Totals	**$2,628,950.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$0.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$0.00

Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$0.00**

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	$2,628,950.00
Construction Cost Total	$2,628,950.00
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 regions 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.

List the applicable documents and pages:

Carver County 2030 Comprehensive Plan (Figure 9) CSAH 24 will be converted from an A Minor Connector to and split into a B Minor Arterial (west of Oxford Avenue) and part A Minor Arterial (east of Oxford Avenue) with the planned connection to 30th street.

Carver County Capital Improvement Plan (2016-2021 CIP Map)
CSAH 24 is scheduled for a full depth reclamation and shoulder widening in 2019.

County Roadway Safety Plan, Carver County (pg. 151)
CSAH 24 is ranked as critical for lane departure crash risk and implementation of a paved shoulder with rumble strips is recommended.

Watertown 2030 Comprehensive Plan (pg. 6.7-6.9) - CSAH 24 intersections, east of Watertown are identified as critical for future intersection improvement measures.

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 Collector
Road System *TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET*	CSAH
Road/Route No. *i.e., 53 for CSAH 53*	24
Name of Road *Example; 1st ST., MAIN AVE*	N/A
Zip Code where Majority of Work is Being Performed	55388
(Approximate) Begin Construction Date	06/01/2019
(Approximate) End Construction Date	06/30/2020

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

From: **(Intersection or Address)**	East Watertown City Limits
To: **(Intersection or Address)**	Carver County Line

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Primary Types of Work	Grading, Agg Base, Bit Base, Traffic Control, Striping, Ped Ramps, Sidewalk

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

Expander/Augmentor/Connector/Non-Freeway Principal Arterial

Select one:	
Area	13.032
Project Length	3.772
Average Distance	3.4549
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:	897
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	48
Existing Students:	0
Upload Map	1467827969145_Regional Economy Map.pdf

Measure C: Current Heavy Commercial Traffic

Location:	CSAH 24 between CSAH 10 and east Carver County line
Current daily heavy commercial traffic volume:	450
Date heavy commercial count taken:	2016

Measure D: Freight Elements

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

Approximately 15 percent of the corridor's recorded traffic is by way of heavy commercial vehicles. CSAH 24 is a critical east-west roadway that parallels two principal arterials (US 12 and TH 7) and links TH 25 (A Minor Connector) to the City of Watertown. CSAH 24 is situated in a rural part of the county and plays a significant role in connecting rural industries with regional freight routes. For example, the county was ranked thirteenth in the state (in 2014) for milk production. CSAH 24 is a crucial route for shipping dairy products and animals by connecting agricultural industries to US 12, TH 7 and TH 25, which links to the Twins Cities. This demonstrates CSAH 24's importance to those who live and work in rural Carver County (approximately 20 farm dwellings and two industrial plants are located on this corridor).

Improvements from the proposed project will allow local freight vehicles safer and more efficient access to regional freight routes and into the City of Watertown. The extra roadway width will reduce edge stress and the potential for edge drop-offs. Widening the roadway shoulder width will also improve freight safety and mobility for over-sized agricultural equipment and freight implements. These improvements are needed to maintain the livelihood of farmers and rural industries located in the area.

Measure A: Current Daily Person Throughput

Location	CSAH 24 west of Dream Lane
Current AADT Volume	3000
Existing Transit Routes on the Project	N/A

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

Upload Transit Map	1467829500188_Transit Connections Map.pdf

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	3900.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume	Yes
If checked, METC Staff will provide Forecast (2040) ADT volume	
OR	
Identify the approved county or city travel demand model to determine forecast (2040) ADT volume	Approved Met Council County Travel Demand Model
Forecast (2040) ADT volume	4100

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:	Yes
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:	

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

The project is located in a census tract that is above the regional average for population in poverty or populations of color, or includes children, people with disabilities, or the elderly.

The City of Watertown is fortunate to have a large inventory of existing affordable housing options within the community including permanent and rental options. The city also has several options for aging adults, including retirement homes, assisted living facilities, and places for citizens with disabilities. In that respect, CSAH 24 serves as an important east-west arterial that links these populations to regional corridors (US 12, TH 7 and TH 15).

The proposed project will enable efficient connections to local and regional employment within a half-hour of the City of Watertown, including the job concentration centers located in Plymouth, Wayzata, Victoria, Chanhassen, Eden Prairie, Chaska, and Shakopee. CSAH 24 improvements will also provide safer commuter and freight travel along the project corridor, both of which will support the health and growth of the county?s local economy.

The city of Watertown will continue to develop and grow in an orderly and phased manner. Planned and orderly annexation agreements with Watertown Township are also in place, covering approximately 2,100 acres. The future land use map identifies several areas east of CSAH 10 along CSAH 24 for low density residential development (see City of Watertown 2030 Land Use Plan Map). Phased growth plans also show most of this residential development occurring on the north side of CSAH 24 by 2020, and infill development south of CSAH 24 between years 2025 and 2030.

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

Upload Map 1467830252168_Socio Economic Conditions Map.pdf

Measure B: Affordable Housing

City/Township	Segment Length in Miles (Population)
City of Watertown and Watertown Township	5093.0
	5093

Total Project Length

Total Project Length (Total Population) 2.5

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) 5093.0

Total Housing Score 0

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1956	3.8	7432.8	1956.0
	4	**7433**	**1956**

Average Construction Year

Weighted Year 1956

Total Segment Length (Miles)

Total Segment Length	3.8

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)	CSAH 24 is currently posted as a ten-ton route. The reconstruction of CSAH 24 will maintain this designation.
Improved clear zones or sight lines:	Yes
Response (Limit 700 characters; approximately 100 words)	CSAH 24 was identified in the County's Highway Safety Plan as having a critical curve radius. The proposed project will address the sightlines associated with this curve.
Improved roadway geometrics:	Yes
Response (Limit 700 characters; approximately 100 words)	CSAH 24 was identified in the County's Highway Safety Plan as having a critical curve radius at Oxford Avenue. The proposed project will address the roadway geometrics associated with this curve and upgrade geometry to a 55 mph design speed. The project will also include an eight foot shoulder (six foot paved and two foot aggregate).
Access management enhancements:	Yes
Response (Limit 700 characters; approximately 100 words)	The proposed project does not require any access modifications.
Vertical/horizontal alignments improvements:	Yes
Response (Limit 700 characters; approximately 100 words)	The project will reconstruct a deficient horizontal curve at Oxford Avenue to meet 55 mph design speeds.
Improved stormwater mitigation:	Yes
Response (Limit 700 characters; approximately 100 words)	The proposed project will apply the appropriate stormwater mitigation measures for a rural two-lane roadway.
Signals/lighting upgrades:	Yes

Response (Limit 700 characters; approximately 100 words)	The proposed project will include the appropriate lighting at county road intersections. Signals are not included as part of this project.
Other Improvements	No
Response (Limit 700 characters; approximately 100 words)	N/A

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
4.0	4.0	0	949	0	N/A	1468437033325_CSAH24_Synchro_Outputs.pdf

Total Delay

Total Peak Hour Delay Reduced	0

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):
0.72	0.72	0	949.0	0
1	**1**		**949**	**0**

Total

Total Emissions Reduced:	0
Upload Synchro Report	1467920095735_CSAH 24_Synchro_Outputs.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):
0	0		0	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

100%

Stakeholders have been identified	Yes

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	06/01/2016

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 01/01/2018

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 12/31/2018

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 07/06/2016

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

50%

Construction plans have not been started Yes

0%

Anticipated date or date of completion 01/01/2019

10)Letting

Anticipated Letting Date 03/01/2019

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

Crash Modification Factor Used: 0.86

Dual CRF for CSAH 24 from CSAH 10 to Market Rd

Improvements include reconstructing the roadway and adding a paved shoulder

CR1=Increase pavement friction

CR2=Install a paved shoulder

Rationale for Crash Modification Selected:

CR=1 - (1-CR1)*(1-CR2)

Angle Crashes (PDO): 1 - (1-.21)*(1-.42) = .54

Head On, ROR (PDO): 1 - (1-.41)*(1-.77) = .86

ROR (Injury): 1 - (1-.41)*(1-.77) = .86

Other (PDO): 1 - (1-.41)*(1-.42) = .66

Other (Injury): 1 - (1-.41)*(1-.72) = .83

See attachment for more information

(Limit 1400 Characters; approximately 200 words)

Project Benefit ($) from B/C Ratio	$3,344,182.00
Worksheet Attachment	1467834893823_Complete Crash CSAH 24.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)

CSAH 24 currently lacks safe accommodations for pedestrians and bicycles. Currently, the existing roadway has two-foot gravel shoulders, and pedestrians and cyclists trying to access these regional destinations via CSAH 24 are forced to walk or cycle on the road or in the roadway's narrow shoulder alongside commuter and freight traffic. Pavement markings are worn and faded in many areas along the corridor. Pavement conditions are poor and patched in many locations and the pavement is at the end of its useful life and needs replacement.

The improved pavement condition and widening of the shoulders (six foot paved and two foot aggregate) will safely accommodate on-road bike commuters and recreational riders who use CSAH 24, as well as those who wish to gain access to the Luce Line Trail or access any of the area lakes.

The 63-mile east-west Luce Line Trail extends north of the proposed project. At its closest location and best access point from CSAH 24 corridor (Paul Avenue), the trail is only 400 feet away. The trail, which extends from the City of Cosmos to downtown Minneapolis, has a combination of paved and crushed stone surfaces. Within the Plymouth to Winsted (30-mile stretch through the City of Watertown, the crushed stone surfaces make it ideal for running, mountain biking, hiking, horseback riding, and in the winter months, for snowmobiling and cross country skiing.

Currently, transit is not incorporated into the CSAH 24 project. The TPP's Transit Investment Plan does not show any area transitway investments planned for the City of Watertown or Watertown in the Current Revenue Scenario. In that respect, the improved shoulders will enhance the limited

multimodal transportation options located in this part of the county.

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$2,628,950.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$2,628,950.00
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
Attachment A - County Supporting Docs.pdf	Attachment A - County Supporting Docs	2.4 MB
Figure 1 Layout.pdf	Figure 1 - Layout	431 KB
Figure 2 - Issues Map.pdf	Figure 2 - Issues Map	2.1 MB
Figure 3 Street Views.pdf	Figure 3 - Street Views	1.2 MB
RADCsah24CarvRM.pdf	RADCsah24CarvRM	377 KB

Regional Economy

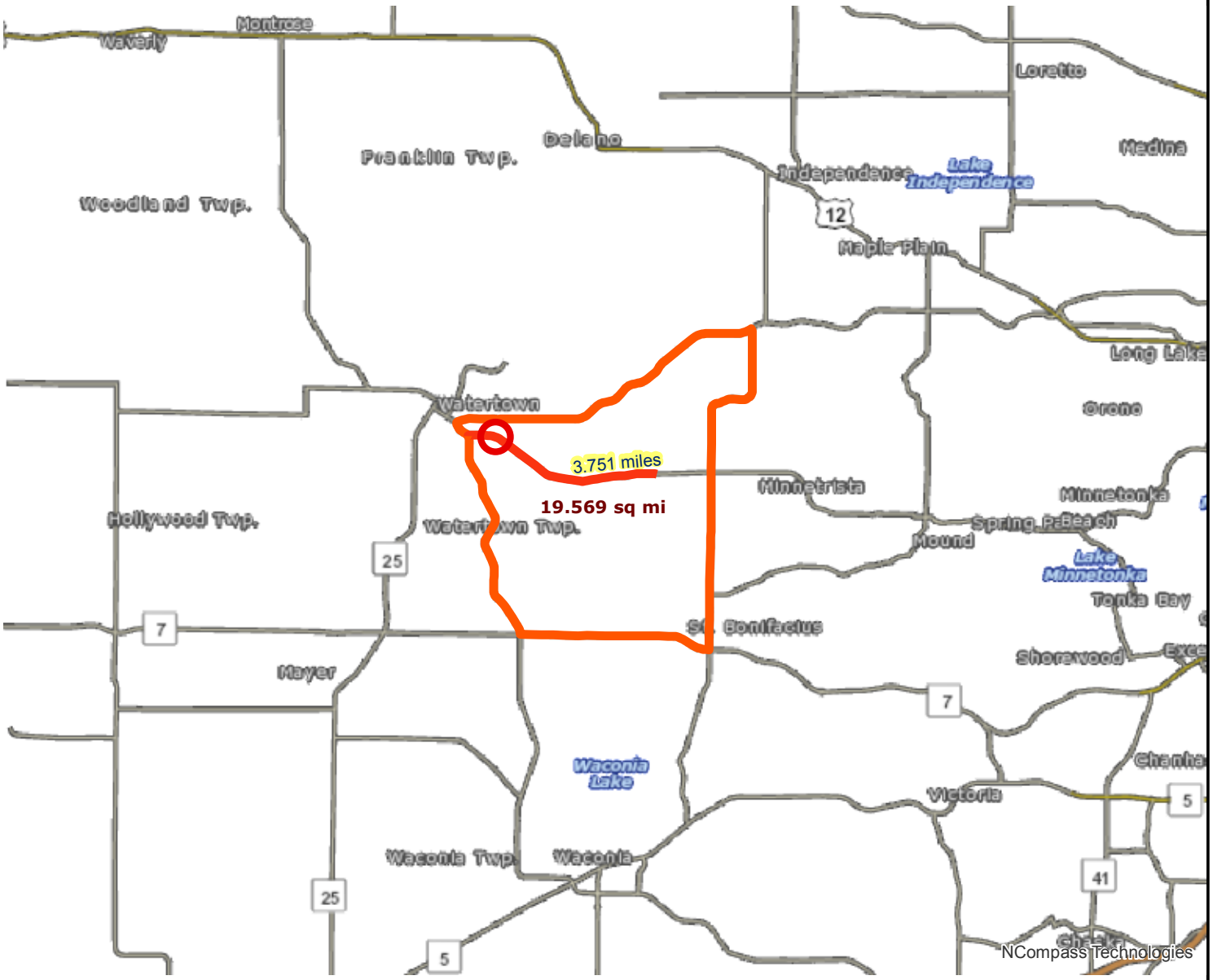
Roadway Reconstruction/Modernization Project: CSAH 24from CSAH 10 to East County Line | Map ID: 1465483639677

Results

WITHIN ONE MI of project:

Totals by City:
Watertown Twp.
Population: 5093
Employment: 897
Mfg and Dist Employment: 48

Postsecondary Students:
0



Project Points Project Area

Project

0 1.75 3.5 7 10.5 14 Miles

Created: 6/9/2016
LandscapeRSA5

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

METROPOLITAN COUNCIL

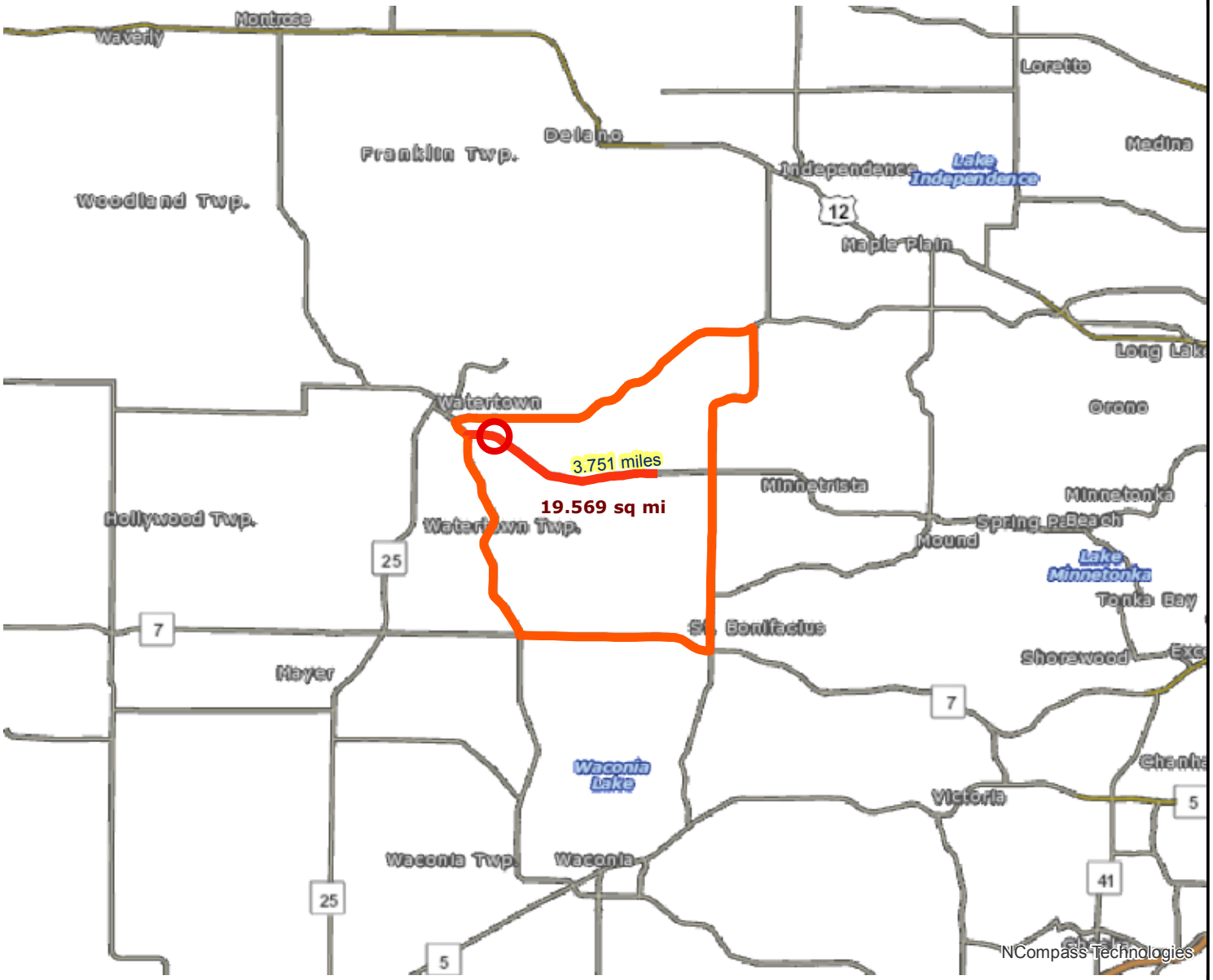
Transit Connections

Roadway Reconstruction/Modernization Project: CSAH 24from CSAH 10 to East County Line | Map ID: 1465483639677

Results

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

**indicates Planned Alignments*



Project Points
Project Area
Project

0 1.75 3.5 7 10.5 14 Miles

Created: 6/9/2016
LandscapeRSA3

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

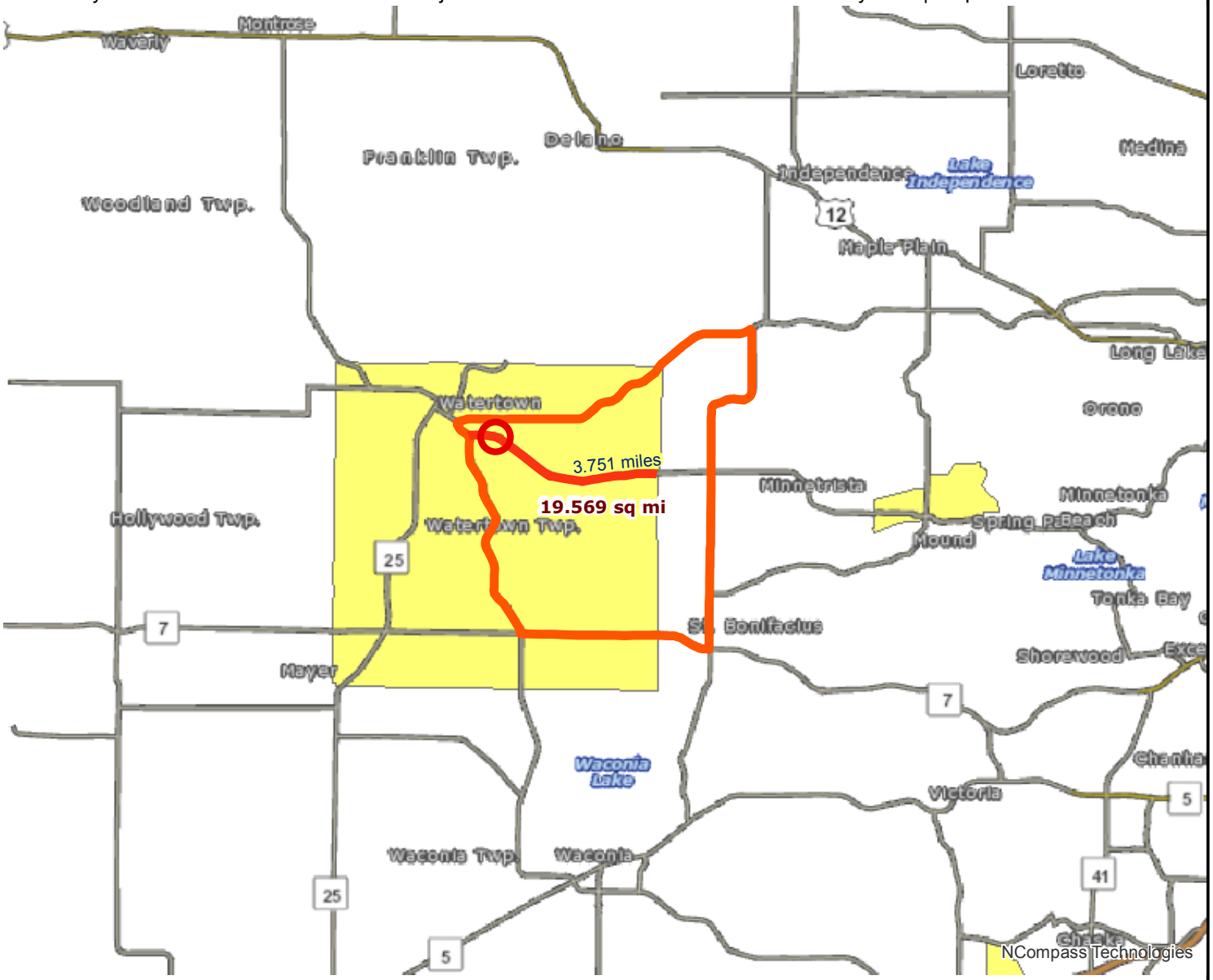
METROPOLITAN COUNCIL

Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: CSAH 24from CSAH 10 to East County Line | Map ID: 1465483639677

Results

Project census tracts are above the regional average for population in poverty or population of color:
(0 to 18 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 1.75 3.5 7 10.5 14 Miles

Created: 6/9/2016
LandscapeRSA2

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

METROPOLITAN COUNCIL

3: Cty Rd 10 & CSAH 24

Direction	All
Future Volume (vph)	709
Total Delay / Veh (s/v)	4
CO Emissions (kg)	0.42
NOx Emissions (kg)	0.08
VOC Emissions (kg)	0.10

7: Market St & CSAH 24

Direction	All
Future Volume (vph)	240
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.08
NOx Emissions (kg)	0.02
VOC Emissions (kg)	0.02

3: Cty Rd 10 & CSAH 24

Direction	All
Future Volume (vph)	709
Total Delay / Veh (s/v)	4
CO Emissions (kg)	0.42
NOx Emissions (kg)	0.08
VOC Emissions (kg)	0.10

7: Market St & CSAH 24

Direction	All
Future Volume (vph)	240
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.08
NOx Emissions (kg)	0.02
VOC Emissions (kg)	0.02

3: Cty Rd 10 & CSAH 24

Direction	All
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7: Market St & CSAH 24

Direction	All
Future Volume (vph)	240
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.08
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3: Cty Rd 10 & CSAH 24

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Future Volume (vph)	709
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VOC Emissions (kg)	0.10

7: Market St & CSAH 24

Direction	All
Future Volume (vph)	240
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.08
NOx Emissions (kg)	0.02
VOC Emissions (kg)	0.02

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 24	CSAH 10 to Market St			Carver	1/1/2013	12/31/2015

Description of Proposed Work: Reconsruct roadway and add paved shoulders

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					2				2
		C					3				3
	Property Damage	PD				1	7	1		2	11
% Change in Crashes	Fatal	F									
	PI	A									
		B					-86%				
		C					-86%				
	Property Damage	PD				-54%	-86%	-86%		-66%	
Change in Crashes = No. of crashes **x** % change in crashes	Fatal	F									
	PI	A									
		B					**-1.72**				**-1.72**
		C					**-2.58**				**-2.58**
	Property Damage	PD				**-0.54**	**-6.02**	**-0.86**		**-1.32**	**-8.74**

*Use Crash Modification Factors Clearinghouse

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

Project Cost (exclude Right of Way): **$ 2,628,950**

Right of Way Costs (optional)

Traffic Growth Factor: **3%**

Capital Recovery

1. **Discount Rate**: **4.5%**
2. **Project Service Life (n)**: **20**

Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
F			$ 1,400,000	
A			$ 570,000	
B	-1.72	-0.57	$ 170,000	$ 97,556
C	-2.58	-0.86	$ 83,000	$ 71,445
PD	-8.74	-2.92	$ 7,600	$ 22,162
Total				$ 191,163

B/C= 1.27

Using present worth values,

B= $ 3,344,182

C= $ 2,628,950

See "Calculations" sheet for amortization.

Office of Traffic, Safety and Technology **September 2014**

CSAH 24 From CSAH 10 to the county line (2013 -2015) - created on 06-21-2016 by rile1che

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
04	10000024	001+00.816	0410000024	1.816	Z		2	2	R
04	10000024	001+00.797	0410000024	1.797	Z		1	2	R
04	10000024	001+00.863	0410000024	1.863	Z		1	2	R
04	10000024	003+00.190	0410000024	3.190	Z		2	2	R
04	10000024	000+00.650	0410000024	0.650	Z		2	2	R
04	10000024	001+00.760	0410000024	1.760	Z		1	2	R
04	10000024	000+00.120	0410000024	0.120	Z		1	2	R
04	10000024	000+00.521	0410000024	0.521	Z		1	2	R
04	10000024	001+00.019	0410000024	1.019	Z		2	2	R
04	10000024	001+00.760	0410000024	1.760	E		1	2	R
04	10000024	001+00.760	0410000024	1.760	E		1	2	R
04	10000024	001+00.860	0410000024	1.860	Z		2	2	R
04	10000024	003+00.290	0410000024	3.290	Z		1	2	R
04	10000024	001+00.258	0410000024	1.258	E		2	2	R
04	10000024	002+00.010	0410000024	2.010	Z		2	2	R
04	10000024	003+00.790	0410000024	3.790	Z		1	2	R

ATP	CO	CITY	DOW	MONTH	DAY	YEAR	TIME	SEV
DRIVER OF #1 WAS EASTBOUND ON CSAH 24. DRIVER WENT OVER THE CENTERLINE, HOOKED SHOULDER AND ROLLED.	10	0000	4-Wed	10	29	2014	1134	B
THE DRIVER OF VEHICLE 1 SAID SHE WAS TRAVELLING EASTBOUND ON CO RD 24. SHE SAID AFTER SHE WENT AROU	10	0000	4-Wed	4	15	2015	1121	C
DRIVER #1 WAS WB ON CO RD 24 WHEN A DEER STEPPED INTO THE ROADWAY. DRIVER #1 STATED SHE WAS UNABLE	10	0000	2-Mon	1	26	2015	2005	N
DRIVER #1 WAS W B ON CO RD 24, WHEN SHE WAS DISTRACTED FOR A SECOND. VEH #1 WENT ONTO GRAVEL SHOUL	10	0000	1-Sun	10	6	2013	1945	B
VEH #1 WAS EB ON CO RD 24. VEH #1 WENT OFF THE ROADWAY AND DROVE IN THE DITCH. VEH #1 DROVE OVER A	10	4005	1-Sun	4	20	2014	1700	C
VEH #1 RAN OFF THE ROAD AT THE INTERSECTION OF OXFORD AVE AND CO RD 24. VEH #1 CAUSED DAMAGED TO A	10	0000	3-Tue	10	6	2015	2315	C
	10	4005	7-Sat	11	29	2014	1715	N
VEHICLE 1 WAS TRAVELLING WESTBOUND ON CO RD 24 ENTERING THE CITY OF WATERTOWN. THE VEHICLE LEFT HE	10	4005	6-Fri	6	19	2015	0638	N
UNIT 1 WAS TRAVELING WEST BOUND AND LOST CONTROL OF THE VEHICLE ON A CURVE. THE VEHICLE WENT OFF OF	10	0000	2-Mon	11	9	2015	0100	N
UNIT ONE WAS TRAVELING EAST ON CO RD 24 WHEN IT LEFT THE ROADWAY TO THE RIGHT. UNIT ONE ENTERED THE	10	0000	1-Sun	12	8	2013	0613	N
UNIT 1 WAS TRAVELING EASTBOUND ON CO RD 24 WHEN THE DRIVER STATED A LARGE TRUCK OR SEMI APPEARED TO	10	0000	3-Tue	12	1	2015	0835	N
DRIVER OF VEH. #1 STATED SHE WAS EASTBOUND ON COUNTY ROAD 24. DRIVER OF VEH. #1 STATED SHE OBSERVED	10	0000	3-Tue	4	9	2013	1159	N
VEH 1 WESTBOUND, DRIVER SAID SHE SWERVED TO MISS A DEER. DRIVER LOST CONTROL, WENT OFF ROAD, THEN	10	0000	6-Fri	10	31	2014	1903	N
UNIT 1 WAS TRAVELING EASTBOUND ON CO RD 24 AND A DEER RAN INTO THE ROADWAY FROM THE CORNFIELD AND U	10	0000	3-Tue	8	25	2015	0555	N
DRIVER HIT DEER, AIRBAGS DEPLOYED, SAID NO INJURIES. DEER STILL ALIVE IN DITCH. I DISPATCHED DEER.	10	0000	4-Wed	8	27	2014	2037	N
UNIT 1 TRAVELING EASTBOUND CO RD 24. UNIT 1 MADE U-TURN AT INTERSECTION OF CO RD 24/MARKET AVE. UNI	10	0000	7-Sat	9	27	2014	0752	N

															PERSON1		
NUM_KILLED	NUM_VEH	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT
0	1	1	55	51	4	2	98	1	2	2	1	8	8	143030018	1	3	2
0	1	1	55	25	4	4	98	1	1	0	1	6	8	151070128	3	3	6
0	1	1	55	8	5	1	98	6	2	0	2	1	8	150270007	3	7	1
0	1	1	55	51	7	2	98	6	2	0	2	1	8	132790140	1	7	1
0	1	1	5	37	7	90	98	1	1	0	1	1	8	141120035	2	3	1
0	1	2	55	51	7	2	98	7	1	1	1	6	8	152840021	1	3	1
0	1	1	55	30	7	1	98	6	2	0	5	1	8	143490100	1	7	1
0	1	1	45	30	7	4	98	1	1	0	1	5	8	151700124	31	7	1
0	1	1	55	51	7	4	98	7	99	99	99	5	8	153130123	1	7	1
0	1	1	55	35	7	4	98	2	4	7	3	6	8	133420054	1	3	1
0	1	2	55	26	7	2	98	1	1	4	4	6	8	153350158	1	3	1
0	1	1	55	28	7	1	98	1	5	3	2	2	8	130990130	1	3	1
0	1	2	55	51	7	4	4	4	1	0	1	1	8	143050010	1	7	1
0	1	1	55	8	8	1	98	2	1	1	1	1	8	152370124	3	3	1
0	1	1	55	8	90	1	98	6	1	0	1	1	8	142390214	1	7	1
0	2	2	55	1	90	1	4	1	1	0	1	1	8	142700058	1	3	7

								PERSON2											PERSON3
FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE
6	18	1	B	4	2	37	M												
13	0	1	C	4	1	33	F												
1	0	1	N	4	1	60	F												
15	0	1	B	4	3	25	F												
1	0	1	C	99	1	69	M												
3	0	1	C	99	99	23	M												
61	46	1	N	4	1	49	F												
21	0	1	N	4	1	30	M												
1	0	1	N	99	99	24	M												
61	0	1	N	4	1	29	F												
61	90	1	N	4	1	32	F												
61	46	1	N	4	1	18	F												
13	0	1	N	4	1	20	F												
1	1	1	N	4	1	41	M												
1	0	1	N	4	1	38	M												
8	10	1	N	4	1	27	F	1	3	1	1	0	1	N	4	1	48	F	


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

- 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: Install curb and gutter

▸ Countermeasure: Install paved shoulder and rumble strips

▸ Countermeasure: Pave a 3 to 4 ft sod shoulder

▸ Countermeasure: Pave narrow shoulder through curve

▸ Countermeasure: Pave shoulder

▸ Countermeasure: Paved right shoulder vs. other right shoulder type on freeway ramp

▾ Countermeasure: Upgrade narrow unpaved shoulder (< 5 ft) to wide paved shoulder (> 5 ft)

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.58	42	★★★☆☆	All	All	Rural	Zeng et al., 2013	The cross sectional model compares ... [*read more*]
☐	0.28	72	★★★☆☆	All	Fatal,Serious injury,Minor injury	Rural	Zeng et al., 2013	The cross sectional model compares ... [*read more*]
☐	0.23	77	★★★☆☆	Head on,Run off road,Sideswipe	All	Rural	Zeng et al., 2013	The cross sectional model compares ... [*read more*]

Compare Reset Compare

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

▸ Countermeasure: Upgrade unpaved or non-existent shoulders to composite shoulders

▸ Subcategory: Shoulder rumble strips (338)

Dual CRF for CSAH 24 from CSAH 10 to Market Rd

Improvements include reconstructing the roadway and adding a paved shoulder

CR1=Increase pavement friction
CR2=Install a paved shoulder

CR=1 – (1-CR1)*(1-CR2)

Angle Crashes (PDO): 1 – (1-.21)*(1-.42) = .54
Head On, ROR (PDO): 1 – (1-.41)*(1-.77) = .86
ROR (Injury): 1 – (1-.41)*(1-.77) = .86
Other (PDO): 1 – (1-.41)*(1-.42) = .66
Other (Injury): 1 – (1-.41)*(1-.72) = .83

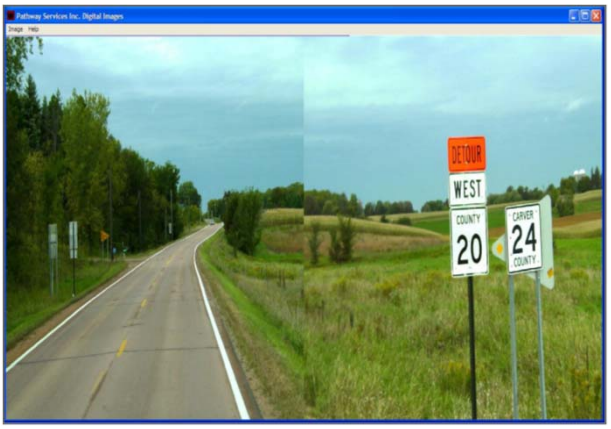
CSAH 24 from DREAM LANE to CSAH-15 Project

Agency: Carver County

Roadway Data

Type: CSAH
Number: 24

	Verbal
Start:	DREAM LANE
End:	CSAH-15
City/Rural:	Rural
County:	Carver
ATP:	Metro
ADT:	2800
Facility Type:	2-Lane
Lane Width:	12
Speed Limit:	55
Shoulder Width:	2'
Shoulder Type:	gravel
Length (miles):	2.7
Rumble Installed:	no



Crash Data

2007-2011 MnCMAT Crash Data 5 years

	Total	Lane Dept	K+A
Crashes	20	11	2
Density (per mile per year)	1.48	0.81	0.15
Rate (per MVM)	1.45	0.80	0.14

Ranking Criteria

	Value	Critical	Road Departure Risk Ranking
ADT Range	2,800	> 3,000	
Lane Departure Density	0.81	0.43	★
Access Density	13.7	11.40	★
Curve Critical Radius Density	0.74	0.42	★
Edge Risk	2	2 or 3	★
			★★★★

Short List of Strategies Considered

Description	Type	Cost per mi	Mileage	Cost
2' Shoulder Pave+RS+Safety Wedge	Proactive	$40,000	2.7	$108,000
Rumble Strip	Proactive	$3,000	0.0	$0
Rumble StripE	Proactive	$3,500	0.0	$0
6" Edge Lines	Proactive	$650	0.0	$0
Ground In Wet-Reflective Markings	Proactive	$8,500	0.0	$0
Center Line Rumble Strip	Proactive	$3,000	0.0	$0
4' Buffer w/Centerline Rumble Strips	Proactive	$150,000	0.0	$0
12' Painted Median w/Left Turn Lanes	Proactive	$500,000	0.0	$0

Notes - County preference to use 2' shoulder paving and rumble strips instead of rumble stripEs.

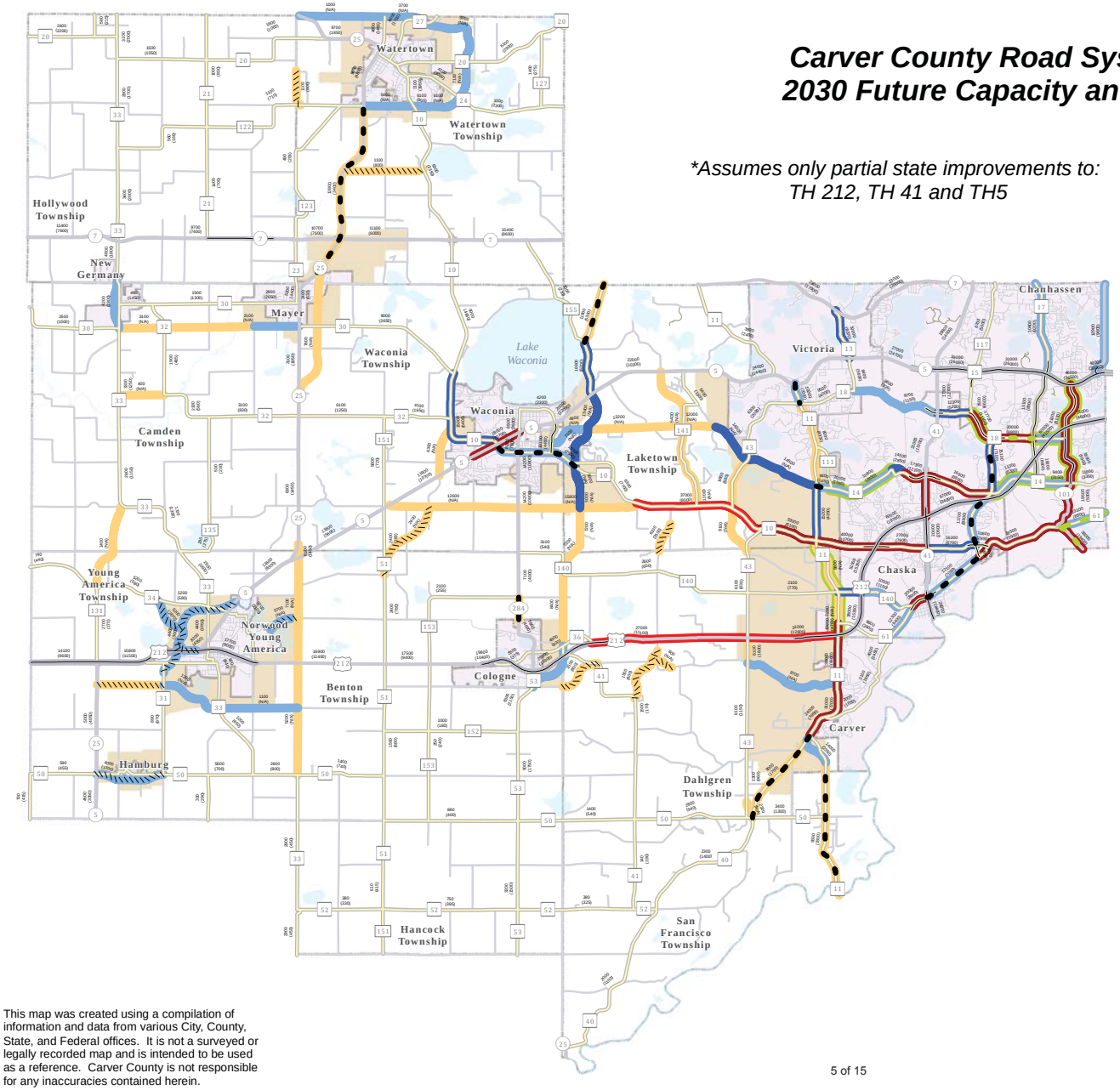
Implementation Cost

Federal Funds	$97,200
Local Match (10% of Total project cost)	$10,800
Total Project Cost	**$108,000**

Figure 1

Carver County Road System Plan - 2014 Amendment
2030 Future Capacity and Connectivity Improvements

**Assumes only partial state improvements to: TH 212, TH 41 and TH5*



Traffic Information — Traffic Volumes #,### - 2030 (#,###) - 2011

Existing Roadway Network

- 2 Lane County Road
- 4 Lane County Road
- 2 Lane Trunk Highway
- 4 Lane Trunk Highway

Recommended Roadway Network

- 2-lane rural
- 2-lane divided rural
- 2-lane urban
- 2-lane divided urban
- 4-lane rural
- 4-lane urban

Project Status

- Halo Denotes Completed
- In Progress
- Sufficient
- Post 2030 Project

City/Township Boundary

- Existing City
- City/Township Boundary
- City Growth Areas 2030

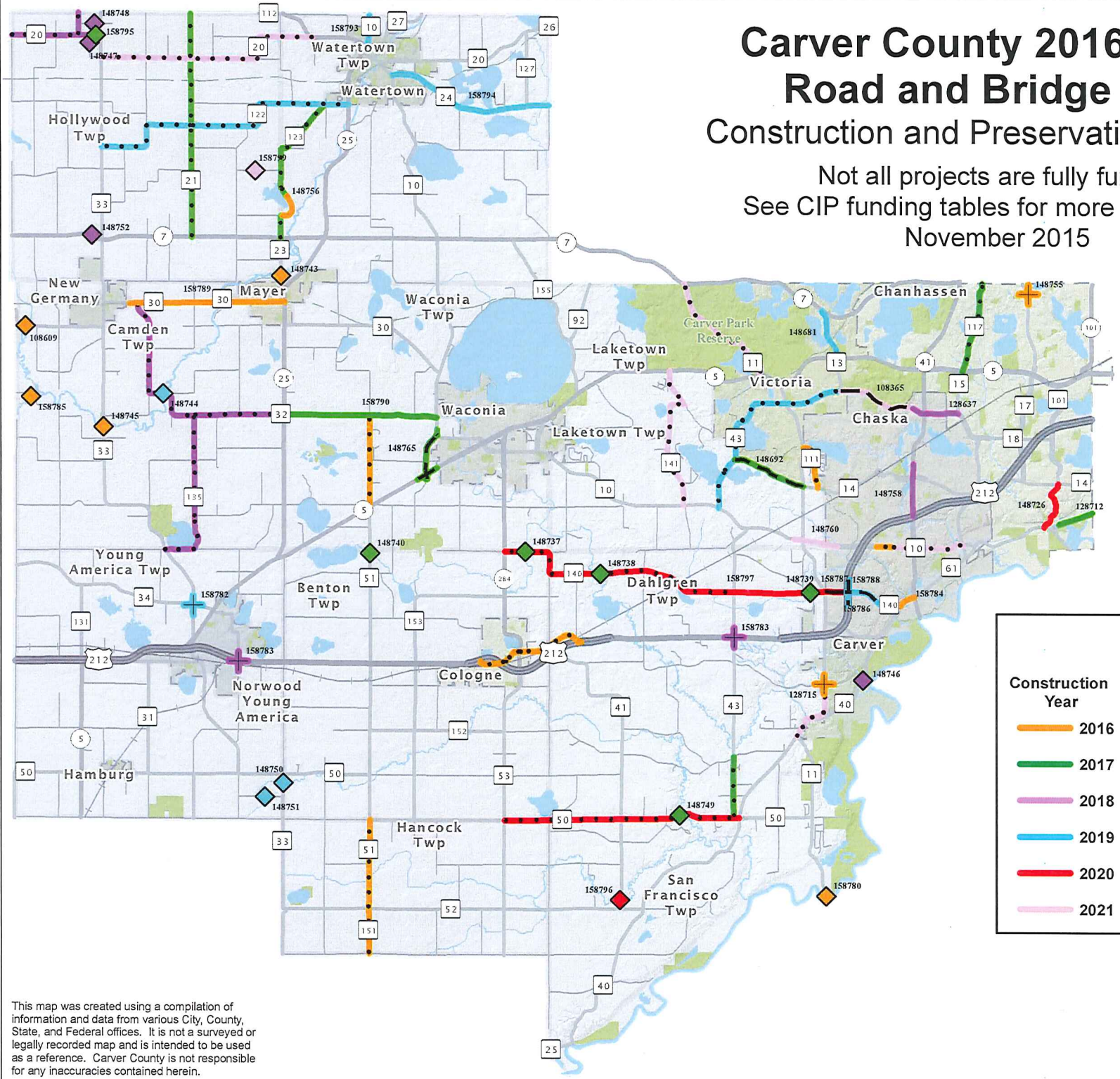
Public Works Division
11360 Hwy 212, Suite 1
Cologne, MN 55322
(952) 466-5200

Created: 7/16/2014

Carver County 2016 - 2021 Road and Bridge Plan

Construction and Preservation Projects

Not all projects are fully funded
See CIP funding tables for more information
November 2015



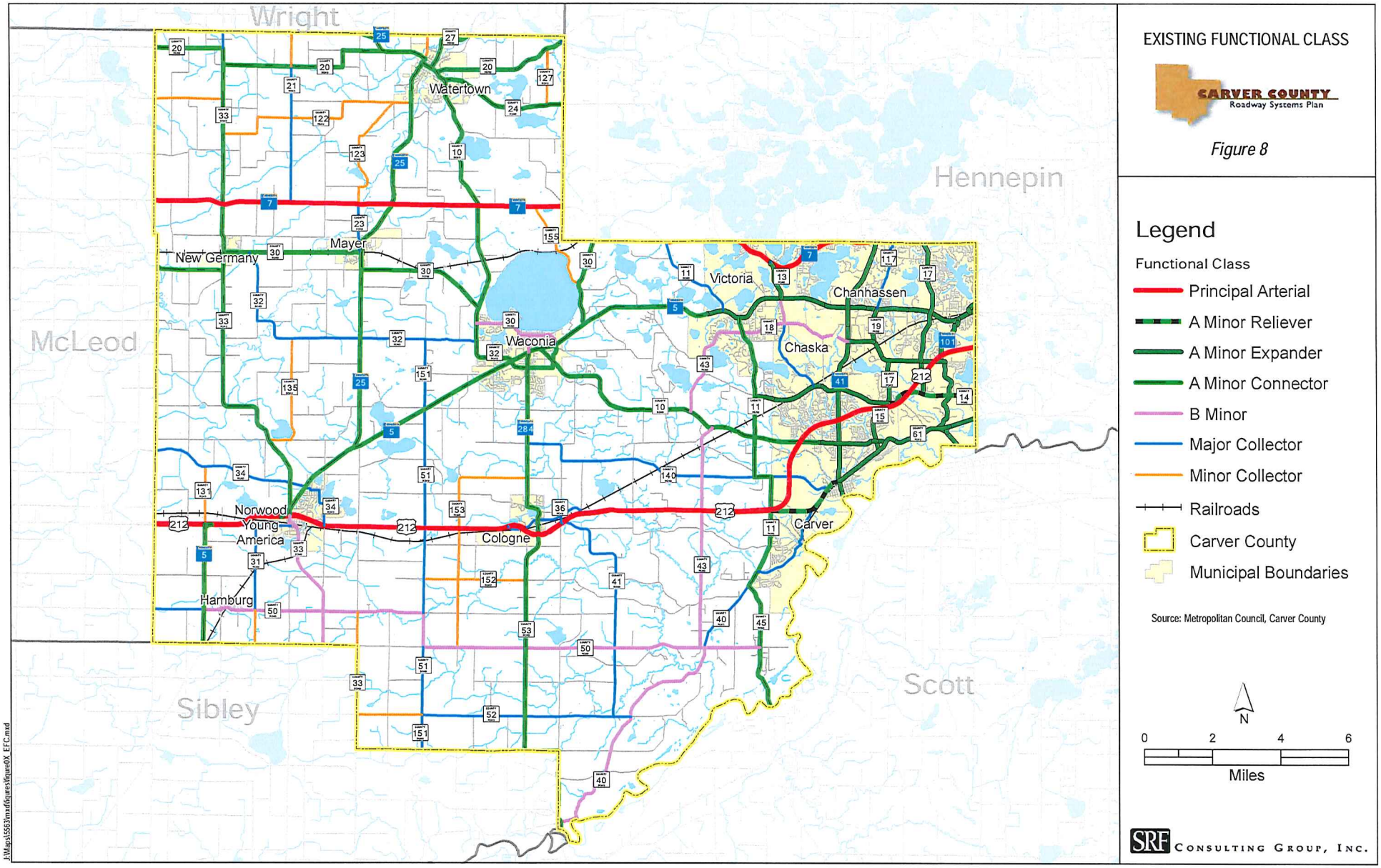
Legend

Construction Year	
2016	Bridge
2017	Intersection Imp.
2018	Corridor Construction
2019	Corridor Preservation
2020	Development Driven
2021	Label Example: 148712 - Project Number

This map was created using a compilation of information and data from various City, County, State, and Federal offices. It is not a surveyed or legally recorded map and is intended to be used as a reference. Carver County is not responsible for any inaccuracies contained herein.

CARVER COUNTY
Public Works Division
11360 Hwy 212, Suite 1
Cologne, MN 55322
(952) 466-5200

Created: 11/19/2015


Wright
Hennepin
McLeod
Sibley
Scott
Watertown
Mayer
New Germany
Waconia
Victoria
Chanhassen
Chaska
Norwood
Young
America
Cologne
Carver
Hamburg
EXISTING FUNCTIONAL CLASS
CARVER COUNTY
Roadway Systems Plan
Figure 8
Legend
Functional Class
Principal Arterial
A Minor Reliever
A Minor Expander
A Minor Connector
B Minor
Major Collector
Minor Collector
Railroads
Carver County
Municipal Boundaries
Source: Metropolitan Council, Carver County
N
0
2
4
6
Miles
SRF Consulting Group, Inc.
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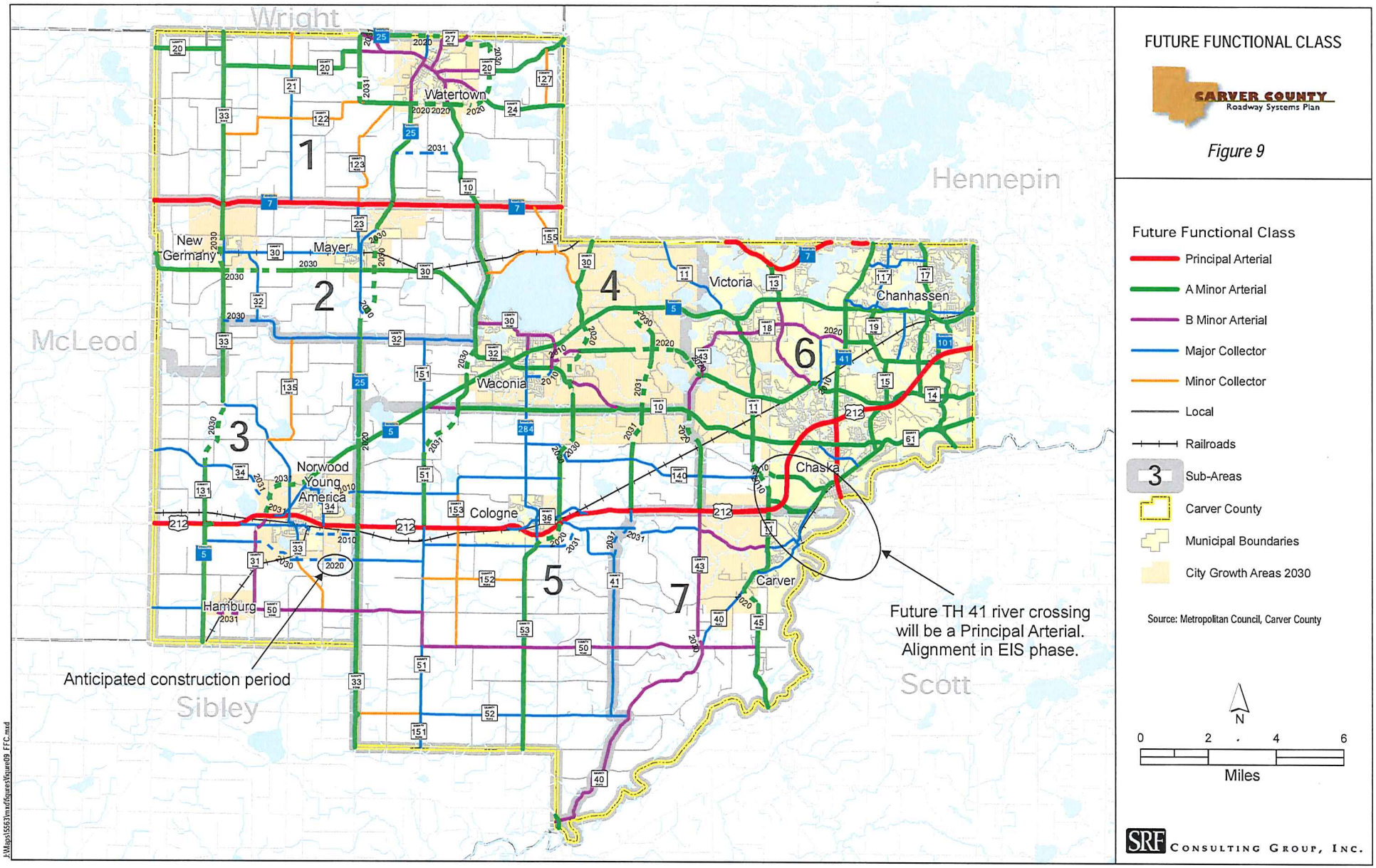
FUTURE FUNCTIONAL CLASS
CARVER COUNTY
Roadway Systems Plan
Figure 9
Future Functional Class
Principal Arterial
A Minor Arterial
B Minor Arterial
Major Collector
Minor Collector
Local
Railroads
Sub-Areas
Carver County
Municipal Boundaries
City Growth Areas 2030
Source: Metropolitan Council, Carver County
N
0 2 4 6
Miles
SRF Consulting Group, Inc.
Wright
Hennepin
McLeod
Sibley
Scott
Watertown
New Germany
Mayer
Victoria
Chanhassen
Waconia
Norwood Young America
Cologne
Chaska
Carver
Hamburg
1
2
3
4
5
6
7
Anticipated construction period
Future TH 41 river crossing will be a Principal Arterial. Alignment in EIS phase.
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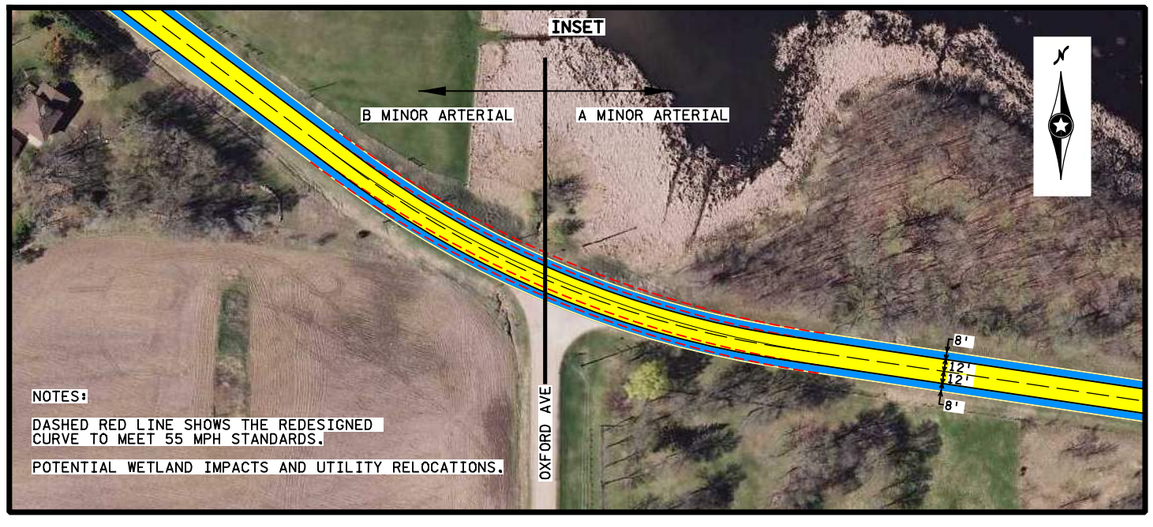

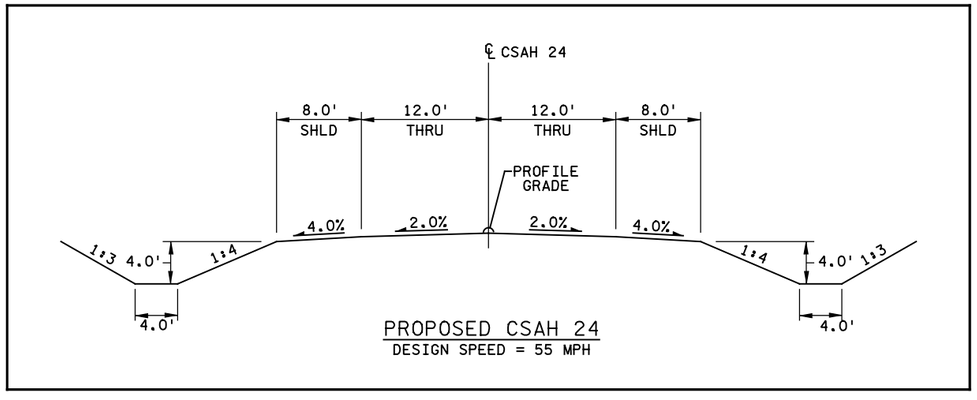

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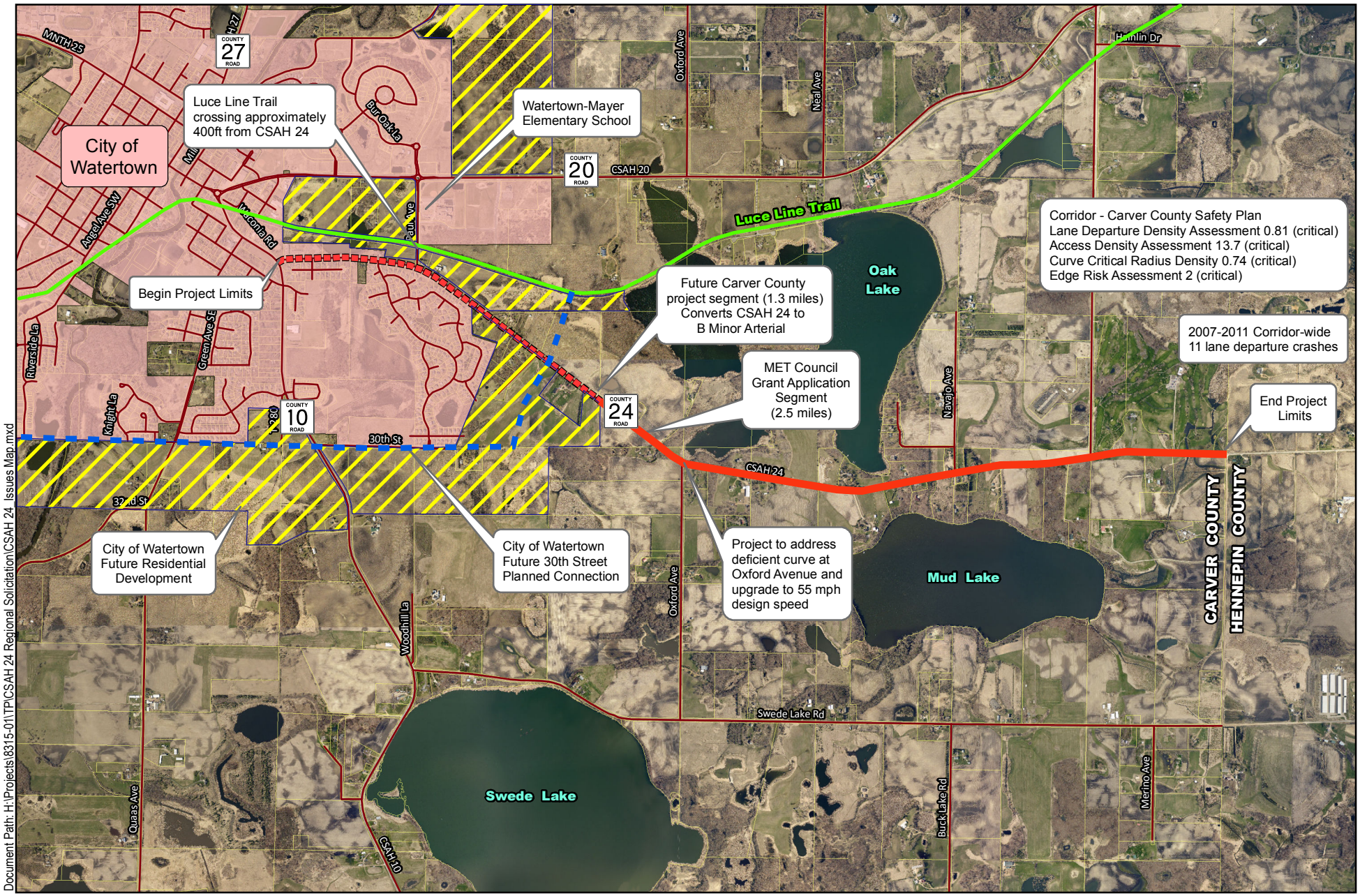
SRF Consulting Group, Inc.

Job # 9282
6/22/2016

CSAH 24

CSAH 24 from CSAH 10 to County Line
Carver County

Figure 1



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SRF Consulting Group, Inc.

Issues Map

CSAH 24 from CSAH 10 to County Line
Carver County

Figure 2

Figure 3 – Street Views

Western Project Limit, Looking east

Residential subdivision entrance and mutli-use path, Looking east

Pedestrian Crossing at Paul Ave, Looking east

Typical Section, Looking East

Intersection of CSAH 24 & Oxford Ave, Looking east

Eastern Project Limit, Looking west

Typical residential driveway along CSAH 24

Typical cross-street intersection with CSAH 24 (at Navajo Ave)


County Rd 24
Exit Street View
© 2013 Google

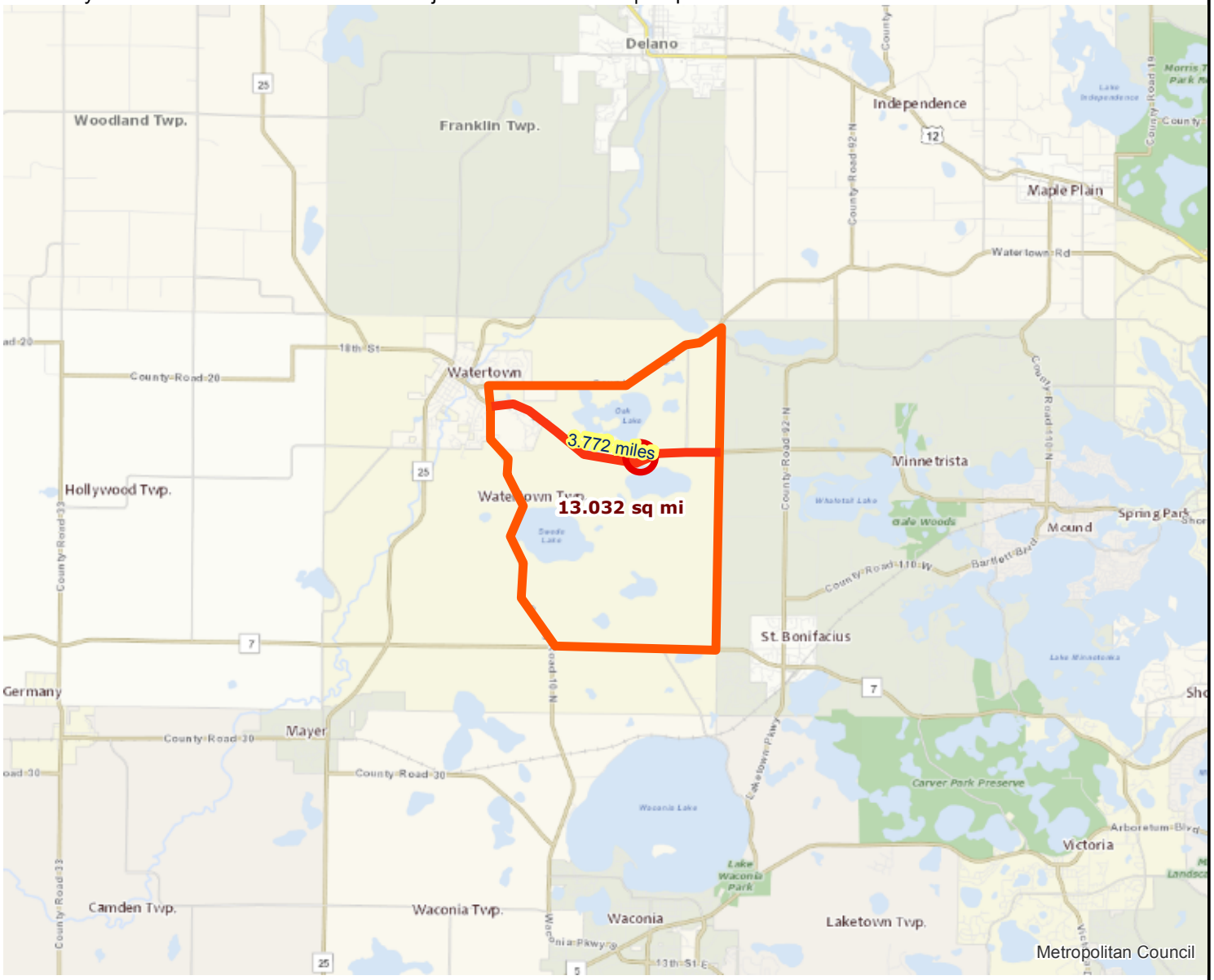
Roadway Area Definition

Roadway Reconstruction/Modernization Project: 05086 Csah 24 | Map ID: 1471967371425

Results

Project Length: 3.772 miles

Project Area: 13.032 sq mi



Project Points Project Area

Project

0 1.5 3 6 9 12 Miles

Created: 8/23/2016
LandscapeRSA1

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

METROPOLITAN COUNCIL