



Application

01969 - 2014 Roadway System Management

02108 - TH 41 CMAQ

Regional Solicitation - Roadways Including Multimodal Elements

Status: Submitted  
Submitted Date: 11/26/2014 11:21 AM

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## Primary Contact

**Name:\*** Michael Joseph Fairbanks  
Salutation First Name Middle Name Last Name

**Title:** Principal Engineer

**Department:** MnDOT Metro Traffic

**Email:** mike.fairbanks@state.mn.us

**Address:** 1500 West County B-2

**\*** Roseville Minnesota 55113  
City State/Province Postal Code/Zip

**Phone:\*** 651-234-7819  
Phone Ext.

**Fax:** 651-234-7850

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

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## Organization Information

**Name:** STATE OF MN

Jurisdictional Agency (if different):

Organization Type: State Government

Organization Website:

Address: MN DOT

MS725

1500 W COUNTY RD B2 #250

\*

ROSEVILLE

Minnesota

55113

City

State/Province

Postal Code/Zip

County: Ramsey

Phone:\* 651-366-3452

Ext.

Fax:

PeopleSoft Vendor Number 0000024577A36

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## Project Information

Project Name TH 41 CMAQ

Primary County where the Project is Located Carver

Jurisdictional Agency (If Different than the Applicant):

The Signal Re-timing and Coordination Project will execute a very timely signal coordination project for TH 41 in the cities of Chaska and Chanhassen. The proposed scope of this project is as follows:

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

Advanced signal coordination and re-timing of 15 signals as well as cabinet upgrades; and deployment of 9 Closed Circuit Television (CCTV) cameras to support real-time signal timing plan changes to be executed by the Minnesota Department of Transportation (MnDOT) Arterial Signals Group. Upgrades to the signal cabinets will provide the opportunity for future Transit Signal Priority (TSP) deployment.

TH 41 is a Non-Freeway Principal Arterial and A-Minor Expander.

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

**Project Length (Miles)** 5.5

**Connection to Local Planning:**

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 MnDOT 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.

2030 Transportation Policy Plan (amended 2013)

**Connection to Local Planning**

Statewide Multimodal Transportation Plan

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## 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** \$564,000.00

**Match Amount** \$141,000.00

*Minimum of 20% of project total*

**Project Total** \$705,000.00

**Match Percentage** 20.0%

*Minimum of 20%*

*Compute the match percentage by dividing the match amount by the project total*

**Source of Match Funds** Safety Capacity (State Funds)

**Preferred Program Year**

**Select one:** 2018

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## MnDOT State Aid Project Information: Roadway Projects

**County, City, or Lead Agency** MnDOT

**Functional Class of Road** Non-Freeway Principal Arterial and A-Minor Expander.

**Road System** Trunk Highway

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

**Name of Road** TH 41

*Example; 1st ST., MAIN AVE*

**Zip Code where Majority of Work is Being Performed** 55318

**(Approximate) Begin Construction Date** 07/03/2017

(Approximate) End Construction Date 06/29/2018

## LOCATION

From: 2nd Street  
(Intersection or Address)

*Do not include legal description;  
Include name of roadway if majority of facility  
runs adjacent to a single corridor.*

To: Lyman Blvd.  
(Intersection or Address)

Type of Work Signals

*Examples: grading, aggregate base, bituminous base, bituminous surface,  
sidewalk, signals, lighting, guardrail, bicycle path, ped ramps, bridge,  
Park & Ride, etc.)*

Old Bridge/Culvert? No

New Bridge/Culvert? No

Structure is Over/Under  
(Bridge or culvert name):

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## Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	\$35,250.00
Removals (approx. 5% of total cost)	\$0.00
Roadway (grading, borrow, etc.)	\$0.00
Roadway (aggregates and paving)	\$0.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$0.00
Ponds	\$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$0.00
Traffic Control	\$35,250.00
Striping	\$0.00
Signing	\$0.00
Lighting	\$0.00
Turf - Erosion & Landscaping	\$0.00
Bridge	\$0.00
Retaining Walls	\$0.00
Noise Wall	\$0.00
Traffic Signals	\$634,500.00
Wetland Mitigation	\$0.00

Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$0.00
Other Roadway Elements	\$0.00
<b>Totals</b>	<b>\$705,000.00</b>

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## Specific Bicycle and Pedestrian Elements

<b>CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES</b>	<b>Cost</b>
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
<b>Totals</b>	<b>\$0.00</b>

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## Specific Transit and TDM Elements

<b>CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES</b>	<b>Cost</b>
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
Transit and TDM Contingencies	\$0.00
Other Transit and TDM Elements	\$0.00
<b>Totals</b>	<b>\$0.00</b>

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## Transit Operating Costs

OPERATING COSTS	Cost
Transit Operating Costs	\$0.00
<b>Totals</b>	<b>\$0.00</b>

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### Totals

Total Cost	\$705,000.00
Construction Cost Total	\$705,000.00
Transit Operating Cost Total	\$0.00

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## 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 2030 Transportation Policy Plan (amended 2013), the 2030 Regional Parks Policy Plan (amended 2013), and the 2030 Water Resources Management Policy Plan (2005).

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

2. 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**

3. Applicants must not submit an application for the same project in more than one funding sub-category.

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

4. 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. Expansion, reconstruction/modernization, and bridges must be between \$1,000,000 and \$7,000,000. Roadway system management must be between \$250,000 and \$7,000,000.

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

5. The project must comply with the Americans with Disabilities Act.

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

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

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

7. 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**

8. 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**

9. 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**

10. The project applicant must send written notification regarding the proposed project to all affected communities and other levels and units of government prior to submitting the application.

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

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## Requirements - Roadways Including Multimodal Elements

### Expansion and Reconstruction/Modernization Projects Only

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

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

2. Federal funds are available for roadway construction and reconstruction on new alignments or within existing right-of-way, including associated construction and excavation, bridges, or installation of traffic signals, signs, utilities, bikeway or walkway components and transit components.

The project must exclude costs for right-of-way, studies, preliminary engineering, design, or construction engineering. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding unless included as part of a larger project, which is otherwise eligible.

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

### Bridge Projects Only

3. The bridge project 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.**

4. Bridges selected in previous Bridge Improvement and Replacement solicitations (1994-2011) are not eligible. A previously selected project is not eligible unless it has been withdrawn or sunset prior to the deadline for proposals in this solicitation.

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

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

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

6. 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 sub-categories. Rail-only bridges are ineligible for funding.

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

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

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

8. Project limits for bridge projects are limited from abutment to abutment.

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

9. The project must exclude costs for studies, preliminary engineering, design, construction engineering, and right-of-way.

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

### Bridge Replacement Projects Only

10. The bridge must have a sufficiency rating less than 50. Additionally, it must also be classified as structurally deficient or functionally obsolete.

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

### Bridge Rehabilitation Projects Only

11. The bridge must have a sufficiency rating less than 80. Additionally, it must also be classified as structurally deficient or functionally obsolete.

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

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## Other Attachments

File Name	Description	File Size
2108 State of MN HSIP.pdf	Crash B/C	31 KB
RdwayAreaDef.pdf	Roadway Area Definition	1.2 MB
RegionalEcon.pdf	Regional Economy	1.1 MB
SocioEcon.pdf	Socio Economic	1.1 MB
TransitCon.pdf	Transit Connections	1.1 MB

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## Measure A: Functional Classification

Address how the project fulfills its role in the regional economy as identified by its current functional classification. If the project serves a system of routes, respond using the route with the highest functional classification. This system must include a Non-Freeway Principal Arterial or an "A" Minor Arterial.

Reference the Roadway Area Definition map generated at the beginning of the application process. Report the total area and project length, as depicted on the Roadway Project Summary map, to calculate the average distance between the project route (highest functional classification) and the closest parallel A Minor Arterials or Principal Arterials on both sides of the project.

Upload the "Roadway Area Definition" map used for this measure.

Area	18.641
Project Length	5.704
Average Distance	3.2681
Upload Map	TH 41 CMAQ Roadway Area.pdf

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## Measure B: Current Heavy Commercial Traffic

Location	TH 41 @ 6th Street
Current daily heavy commercial traffic volume	1600.0

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## Measure C: Project Location Relative to Jobs, Manufacturing and Education

Select all that apply:

Direct connection to or within a mile of a Job Concentration



Direct connection to or within a mile of a Manufacturing/Distribution Location Yes

Direct connection to or within a mile of an Educational Institution

Project provides a direct connection to or within a mile of an existing local activity center identified in an adopted county or city plan

County or City Plan Reference

Response (Limit 700 characters; approximately 100 words)

Upload Map TH 41 CMAQ Regional Economy.pdf

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## Measure A: Current Daily Person Throughput

Location	TH 41 @ Engler Blvd.
Current AADT Volume	20600.0
Existing Transit Routes on the Project	684, 687, 690, 691, 694, 695, 697, 698, 699

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## Response - Daily Person Throughput

Average Annual Daily Transit Ridership	3779.0
Current Daily Person Throughput	30559.0

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## Measure B: 2030 Forecast ADT

Use Metropolitan Council model to determine forecast (2030) ADT volume Yes

METC Staff - Forecast (2030) ADT volume 27000.0

OR

Approved county or city travel demand model to determine forecast (2030) ADT volume

Forecast (2030) ADT volume 0

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## Measure A: Project Location and Impact to Disadvantaged Populations

Select one:

Project located in Racially Concentrated Area of Poverty

Project located in Concentrated Area of 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.

### Measure B: Affordable Housing

City/Township	Segment Length (Miles)
Chaska	5.0
Chanhassen	0.5
	<b>6</b>

### Total Project Length

Total Project Length 5.5

### 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
Chaska	5.0	5.5	65.0	0.909	59.091
Chanhassen	0.5	5.5	44.0	0.091	4.0
		<b>11</b>	<b>109</b>	<b>1</b>	<b>63</b>

### Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

Total Project Length (Miles) 5.5

Total Housing Score 63.091

### Measure A: Equipment Improvements and Installation Year

Equipment to be Improved Signal Cabinets, Comm Equipment, and Controllers

Date of Equipment Installation 04/15/2004

### Measure A: Cost Effectiveness of Vehicle Delay Reduction

Total Project Cost from Cost Sheet \$705,000.00

Total Peak Hour Vehicle Delay Without The Project 945.0

Total Peak Hour Vehicle Delay With The Project 870.0

Total Peak Hour Vehicle Delay Reduced by Project	75.0
Cost Effectiveness	\$9,400.00
Synchro or HCM Reports	TH 41.pdf

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### Measure B: Cost Effectiveness of Emissions Reduction

Total Project Cost from Cost Sheet	\$705,000.00
Total Peak Hour Kilograms Reduced by Project	3.75
Cost Effectiveness	\$188,000.00
Synchro or HCM Reports	TH 41 - Before.syn

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### Measure A: Benefit/Cost of Crash Reduction

Project Benefit/Cost Ratio	2.0
Worksheet Attachment	TH41, 2nd St to Lyman Blvd.xls

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### Measure A: Transit Connections

Existing Routes Directly Connected to the Project	684, 687, 690, 691, 694, 695, 697, 698, 699
Planned Transitways directly connected to the project (alignment and mode determined and identified in the 2030 TPP)	N/A
Upload Map	TH 41 CMAQ Transit Connections.pdf

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### Response

*Met Council Staff Data Entry Only*

Route Ridership	901403.0
Transitway Ridership	0

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### Measure B: Bicycle and Pedestrian Connections

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

The BikeKonnnect Trail has access to the TH 41 corridor near Engler Boulevard. Pedestrian accommodations are provided at the following intersections (most of which are ADA compliant) : 2nd, 4th, 6th, Crosstown Boulevard, Engler Boulevard, Canyon, TH 212 South Ramp, TH 212 North Ramp, Hundertmark Road, Pioneer Trail, Hazeltine Boulevard, Lyman Boulevard, 82nd, and TH 5 with TH 41. Throughout the corridor there are numerous commercial and mixed use attractions including Chaska Commons Development.

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## Measure C: Multimodal Facilities

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

There are no bicycle, pedestrian, or transit elements included as part of this project. The BikeKonnnect Trail has access to the TH 41 corridor near Engler Boulevard. Pedestrian accommodations are provided at the following intersections(most of which are ADA compliant) : 2nd, 4th, 6th, Crosstown Boulevard, Engler Boulevard, Canyon, TH 212 South Ramp, TH 212 North Ramp, Hundertmark Road, Pioneer Trail, Hazeltine Boulevard, Lyman Boulevard, 82nd, and TH 5 with TH 41. Routes 684, 687, 690, 691, 694, 695, 697, 698, 699 and the East Creek Station, Clover Fields are included in this corridor.

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## Transit Projects Not Requiring Construction

*If the applicant is completing a transit or TDM application, only Park-and-Ride and other construction projects require completion of the Risk Assessment below. Check the box below if the project does not require the Risk Assessment fields, and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.*

**Check Here if Your Transit Project Does Not Require Construction**

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## 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 (10 Percent of Points)**

**EIS**

**EA**

**PM**

**Document Status:**

**Document approved (include copy of signed cover sheet)**

100%

**Document submitted to State Aid for review**

75%

**Document in progress; environmental impacts identified**

50%

**Document not started**

Yes

0%

**Anticipated date or date of completion/approval**

## **4)Review of Section 106 Historic Resources (15 Percent of Points)**

**No known potential for archaeological resources, no historic resources known to be eligible for/listed on the National Register of Historic Places 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%

**Unknown impacts to historic/archaeological resources**

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 (15 Percent of Points)**

*(4f is publicly owned parks, recreation areas, historic sites, wildlife or waterfowl refuges; 6f is outdoor recreation lands where Land and Water Conservation Funds were used for planning, acquisition, or development of the property)*

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

100%

**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%

**Adverse effects (land conversion) to Section 4f/6f resources likely**

30%

**Unknown impacts to Section 4f/6f resources in the project area**

0%

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

**Right-of-way or easements not required** Yes

100%

**Right-of-way or easements has/have been acquired**

100%

**Right-of-way or easements required, offers made**

75%

**Right-of-way or easements required, appraisals made**

50%

**Right-of-way or easements required, parcels identified**

25%

**Right-of-way or easements required, parcels not identified**

0%

**Right-of-way or easements identification has not been completed**

0%

**Anticipated date or date of acquisition**

**7)Railroad Involvement (25 Percent of Points)**

**No railroad involvement on project**

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**

Yes

0%

**Anticipated date or date of executed Agreement**

### **8)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**

### **9)Letting**

**Anticipated Letting Date**

<b>B/C</b> worksheet		Control Section	T.H. / Roadway	Location			Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
		1008	41	from 2nd St to Lyman Blvd in Chaska			001+00.740	006+00.230	Chaska	1/1/2011	12/31/2013
		<b>Description of Proposed Work</b>									
		ATMS - 12 signals will be upgraded, 15 will be retimed, fiber interconnect & cameras									
<b>Accident Diagram Codes</b>		1		3	5	4, 7	8, 9		6, 90, 98, 99		
								Pedestrian	Other	Total	
<b>Study Period: Number of Crashes</b>	Fatal	F									
	Personal Injury (PI)	A									
		B	4			3					
		C	19	1	2	14	3	5		1	45
Property Damage	PD	62	17	6	10	10	3		9	117	
<b>% Change in Crashes</b> <small>*Use FHWA cmclearingho use for Crash Reduction Factors</small>	Fatal	F									
	PI	A									
		B	-8%			-8%					
		C	-8%	-8%	-8%	-8%	-8%	-8%		-8%	
Property Damage	PD	-8%	-8%	-8%	-8%	-8%	-8%		-8%		
<b>Change in Crashes</b> <small>= No. of crashes X % change in crashes</small>	Fatal	F									
	PI	A									
		B	-0.32			-0.24					-0.56
		C	-1.52	-0.08	-0.16	-1.12	-0.24	-0.40		-0.08	-3.60
Property Damage	PD	-4.96	-1.36	-0.48	-0.80	-0.80	-0.24		-0.72	-9.36	
<b>Year (Safety Improvement Construction)</b>		2018									
<b>Project Cost (exclude Right of Way)</b>		\$ 705,000		Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit	<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #fce4ec;"> <b>B/C= 2.00</b> </div> <i>Using present worth values,</i> <b>B= \$ 1,408,178</b> <b>C= \$ 705,000</b> <i>See "Calculations" sheet for amortization.</i>		
<b>Right of Way Costs (optional)</b>				F			\$ 1,100,000				
<b>Traffic Growth Factor</b>		3%		A			\$ 550,000				
<b>Capital Recovery</b>				B	-0.56	-0.19	\$ 160,000	\$ 29,867			
<b>1. Discount Rate</b>		4.5%		C	-3.60	-1.20	\$ 81,000	\$ 97,200			
<b>2. Project Service Life (n)</b>		10		PD	-9.36	-3.12	\$ 7,400	\$ 23,088			
				<b>Total</b>			\$ 150,155				

Updated 9-5-2014



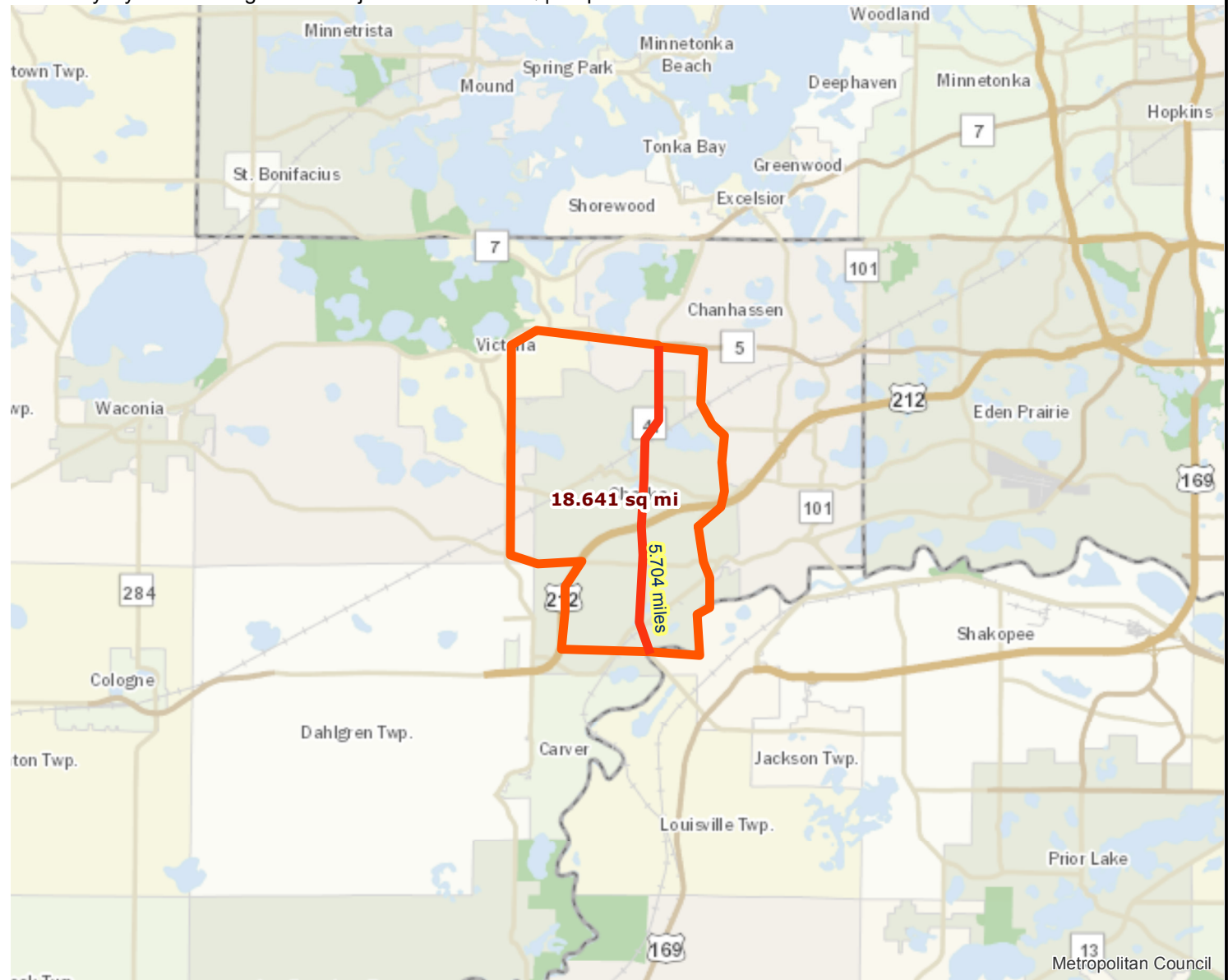
# Roadway Area Definition

Roadway System Management Project: TH 41 CMAQ | Map ID: 1419960206407

## Results

Project Length: 5.704 miles

Project Area: 18.641 sq mi



— Project

□ Project Area



Created: 12/30/2014  
LandscapeRSA1

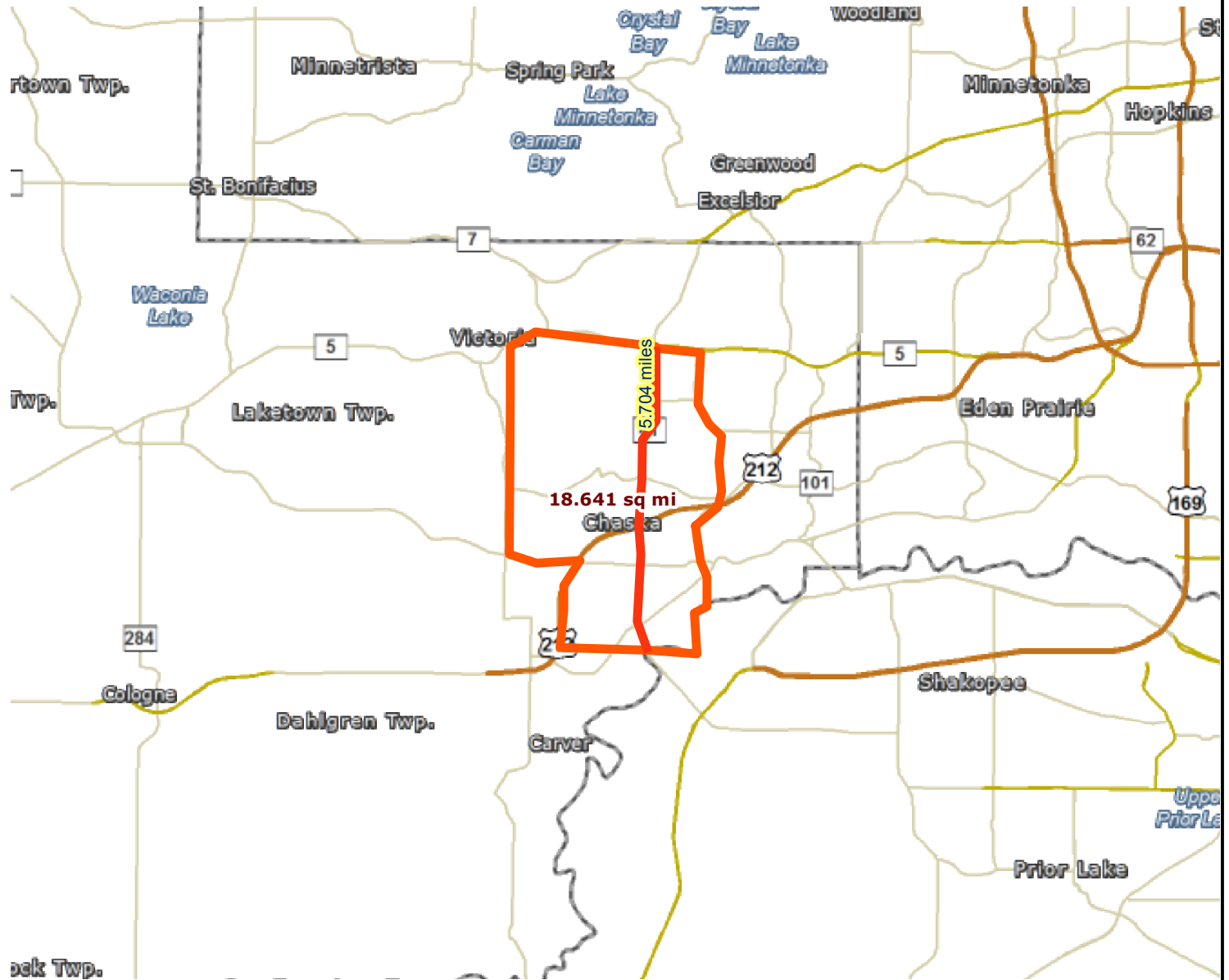


For complete disclaimer of accuracy, please visit  
<http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



# Regional Economy

Roadway System Management Project: TH 41 CMAQ | Map ID: 1419960206407





## Results

Project **NOT IN** area of Job Concentration.

Project **IN** area of Manufacturing and Distribution.

Project **NOT CONNECTED** to area of Education Institutions.

-  Project
-  Project Area



Created: 12/30/2014  
LandscapeRSA5

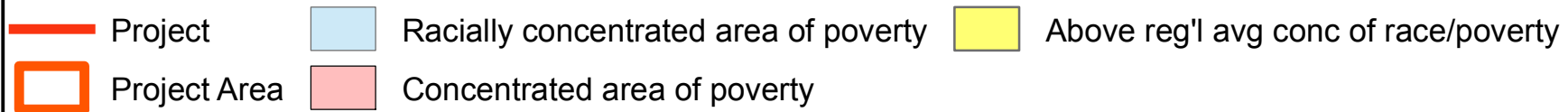
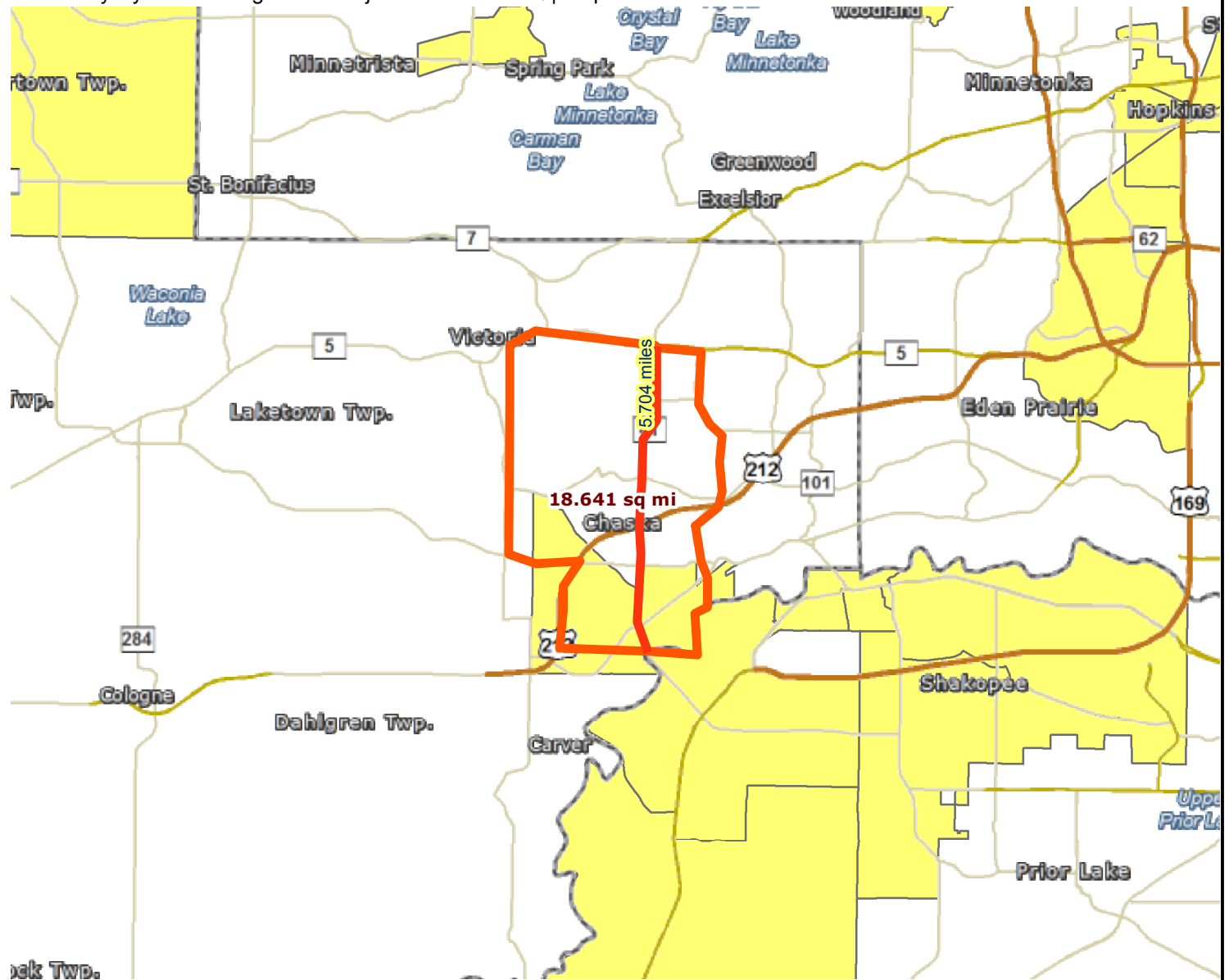


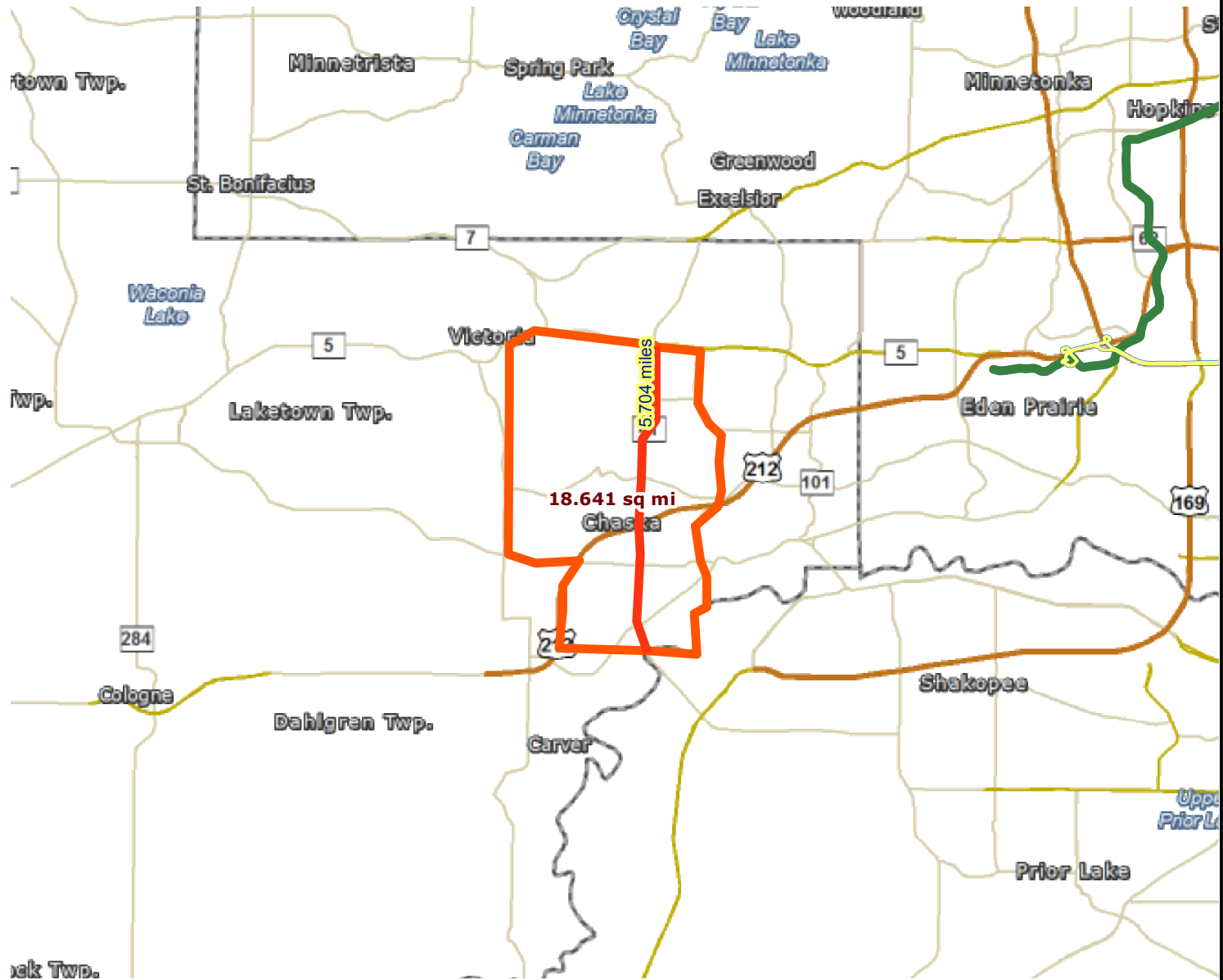
For complete disclaimer of accuracy, please visit <http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



Results

Project IN area of above average concentration of race or poverty.





Results

Transit with a Direct Connection to project:  
 684 687 690 691 694 695 697 698 699

*\*indicates Planned Alignments*

- Project
- Project Area
- Planned Alignments**
- Light Rail, Green Line Extension
- Arterial BRT



Created: 12/30/2014  
 LandscapeRSA3



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



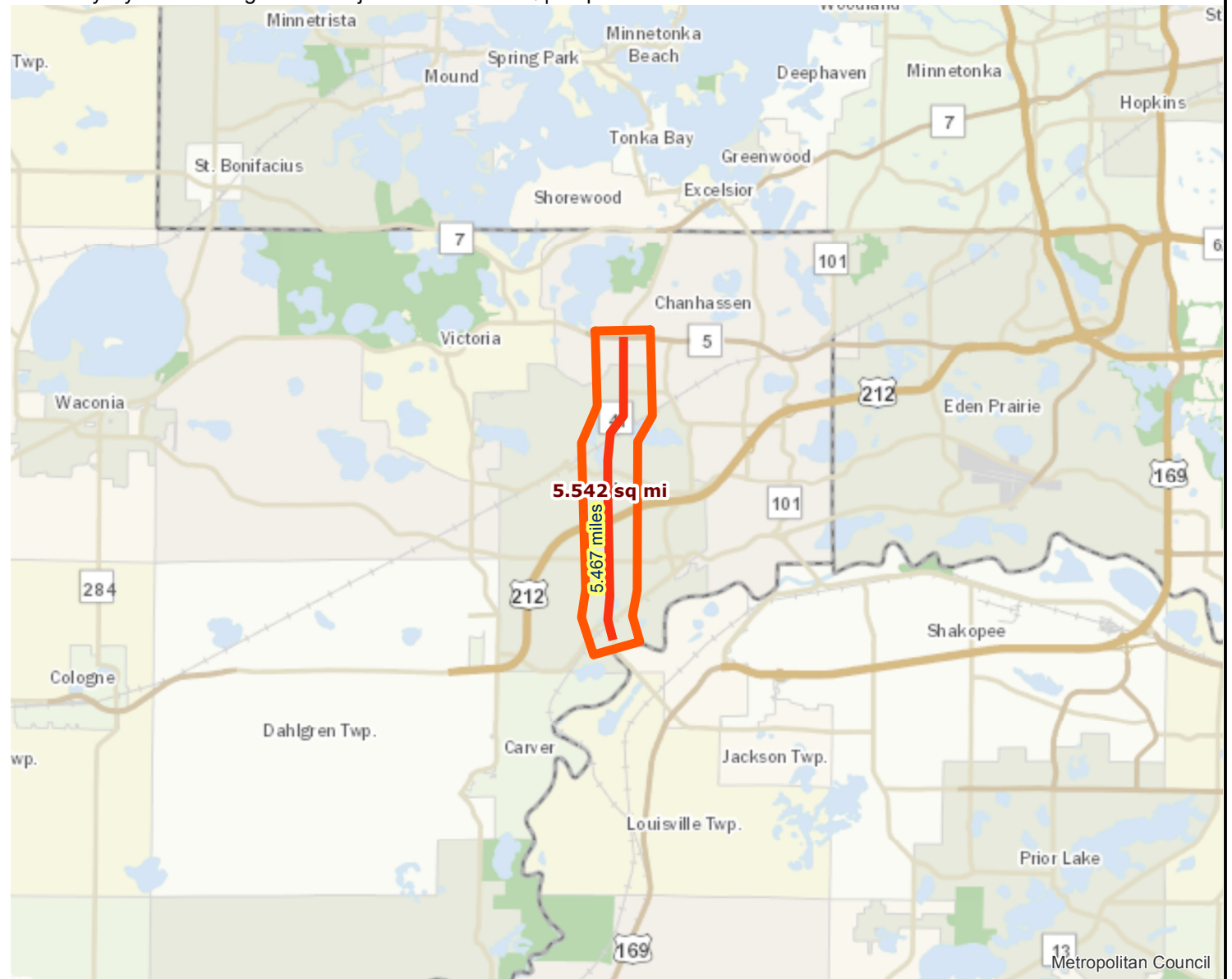
# Roadway Area Definition

Roadway System Management Project: TH 41 CMAQ | Map ID: 1414604411802

## Results

Project Length: 5.467 miles

Project Area: 5.542 sq mi



— Project

□ Project Area



Created: 10/29/2014  
LandscapeRSA1



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<http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



# Regional Economy

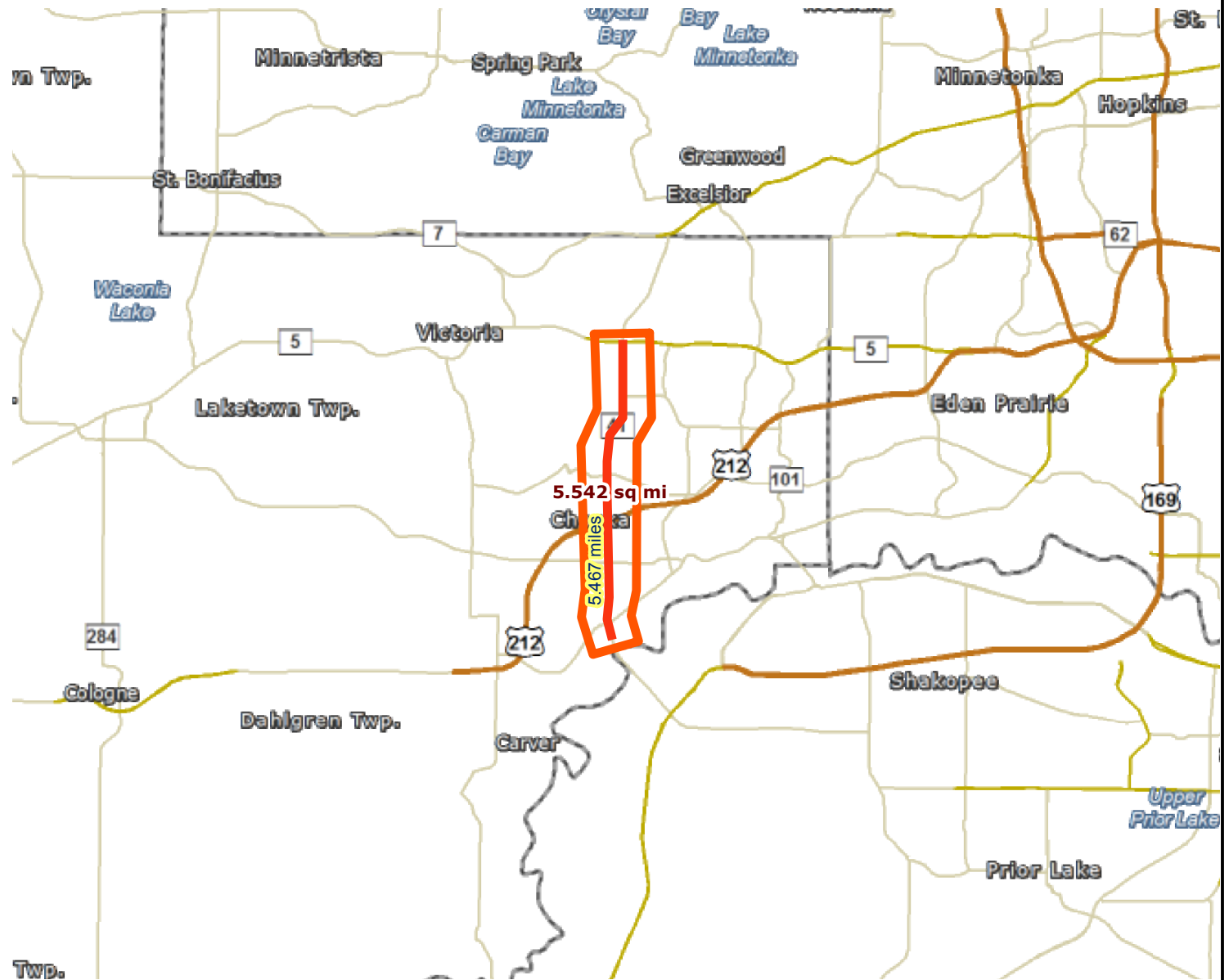
Roadway System Management Project: TH 41 CMAQ | Map ID: 1414604411802

## Results

Project **NOT IN** area of Job Concentration.

Project **IN** area of Manufacturing and Distribution.

Project **NOT CONNECTED** to area of Education Institutions.



-  Project
-  Project Area



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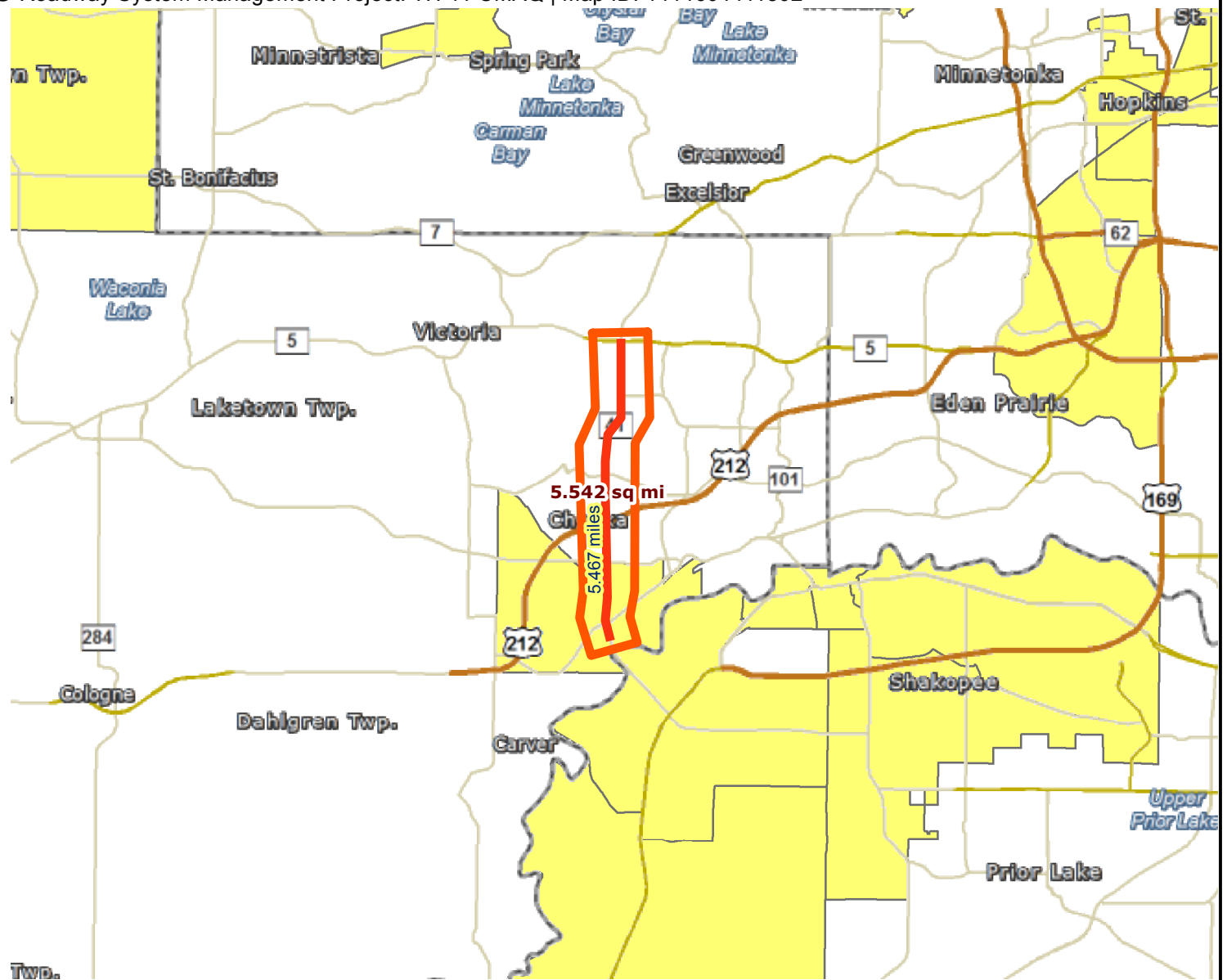


For complete disclaimer of accuracy, please visit  
<http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



Results

Project IN area of above average concentration of race or poverty.



- Project
- Project Area
- Racially concentrated area of poverty
- Concentrated area of poverty
- Above reg'l avg conc of race/poverty



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Volume

220: Hundertmark Rd & TH 41

1/5/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Volume (vph)	131	140	155	231	215	30	288	650	385	24	581	137
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)			180			35			416			152
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Growth Factor	116%	116%	116%	116%	116%	116%	116%	116%	116%	116%	116%	116%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	162	180	268	249	35	334	754	447	28	674	159
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Total Split (s)	15.0	18.0	18.0	17.0	20.0	20.0	20.0	40.0	40.0	15.0	35.0	35.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.5	6.5	5.0	6.5	6.5
Act Effect Green (s)	9.6	11.2	11.2	12.8	14.4	14.4	15.0	43.5	43.5	7.2	28.5	28.5
Actuated g/C Ratio	0.11	0.12	0.12	0.14	0.16	0.16	0.17	0.48	0.48	0.08	0.32	0.32
v/c Ratio	0.80	0.70	0.51	1.07	0.83	0.12	1.13	0.84	0.46	0.20	1.14	0.26
Control Delay	70.4	54.4	11.3	116.1	61.8	12.8	129.6	32.7	4.2	42.1	113.7	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	54.4	11.3	116.1	61.8	12.8	129.6	32.7	4.2	42.1	113.7	5.7
LOS	E	D	B	F	E	B	F	C	A	D	F	A
Approach Delay		43.6			85.0			45.5			91.4	
Approach LOS		D			F			D			F	
Queue Length 50th (ft)	85	89	0	~179	140	0	~223	312	8	15	~453	3
Queue Length 95th (ft)	#184	#168	58	#330	#271	26	#388	#678	72	41	#663	45
Internal Link Dist (ft)		783			1032			2455			1912	
Turn Bay Length (ft)	150		150	150		150	250			250		250
Base Capacity (vph)	197	248	367	251	299	283	295	901	980	197	590	605
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.65	0.49	1.07	0.83	0.12	1.13	0.84	0.46	0.14	1.14	0.26

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 63.1	Intersection LOS: E
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	



# Volume

## 220: Hundertmark Rd & TH 41

1/5/2015

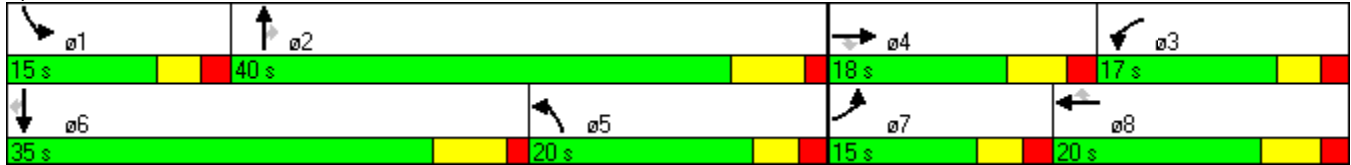
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

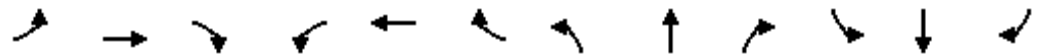
Splits and Phases: 220: Hundertmark Rd & TH 41



Volume

220: Hundertmark Rd & TH 41

1/5/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑	↗	↖	↑	↗
Volume (vph)	131	140	155	231	215	30	288	650	385	24	581	137
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Satd. Flow (RTOR)			180			35			401			140
Lane Group Flow (vph)	152	162	180	268	249	35	334	754	447	28	674	159
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Total Split (s)	15.0	18.0	18.0	19.0	22.0	22.0	23.0	48.0	48.0	15.0	40.0	40.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.5	6.5	5.0	6.5	6.5
Act Effect Green (s)	9.9	11.5	11.5	14.5	16.1	16.1	18.0	49.1	49.1	7.2	33.5	33.5
Actuated g/C Ratio	0.10	0.12	0.12	0.14	0.16	0.16	0.18	0.49	0.49	0.07	0.34	0.34
v/c Ratio	0.87	0.76	0.53	1.04	0.83	0.12	1.05	0.82	0.46	0.22	1.08	0.26
Control Delay	86.8	65.7	12.4	110.7	64.3	13.5	104.5	32.9	4.5	47.9	92.9	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.8	65.7	12.4	110.7	64.3	13.5	104.5	32.9	4.5	47.9	92.9	6.7
LOS	F	E	B	F	E	B	F	C	A	D	F	A
Approach Delay		52.8			83.6			40.2			75.5	
Approach LOS		D			F			D			E	
Queue Length 50th (ft)	97	101	0	~192	156	0	~233	435	16	17	~483	8
Queue Length 95th (ft)	#211	#196	62	#351	#288	27	#405	#693	80	45	#700	52
Internal Link Dist (ft)		783			1032			2455			1912	
Turn Bay Length (ft)	150		150	150		150	250			250		250
Base Capacity (vph)	177	224	348	257	301	285	319	914	981	177	624	623
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.72	0.52	1.04	0.83	0.12	1.05	0.82	0.46	0.16	1.08	0.26

Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 57.8      Intersection LOS: E  
 Intersection Capacity Utilization 96.1%      ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.

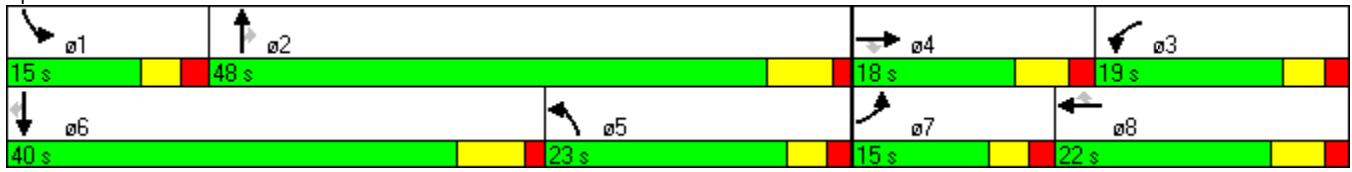
# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

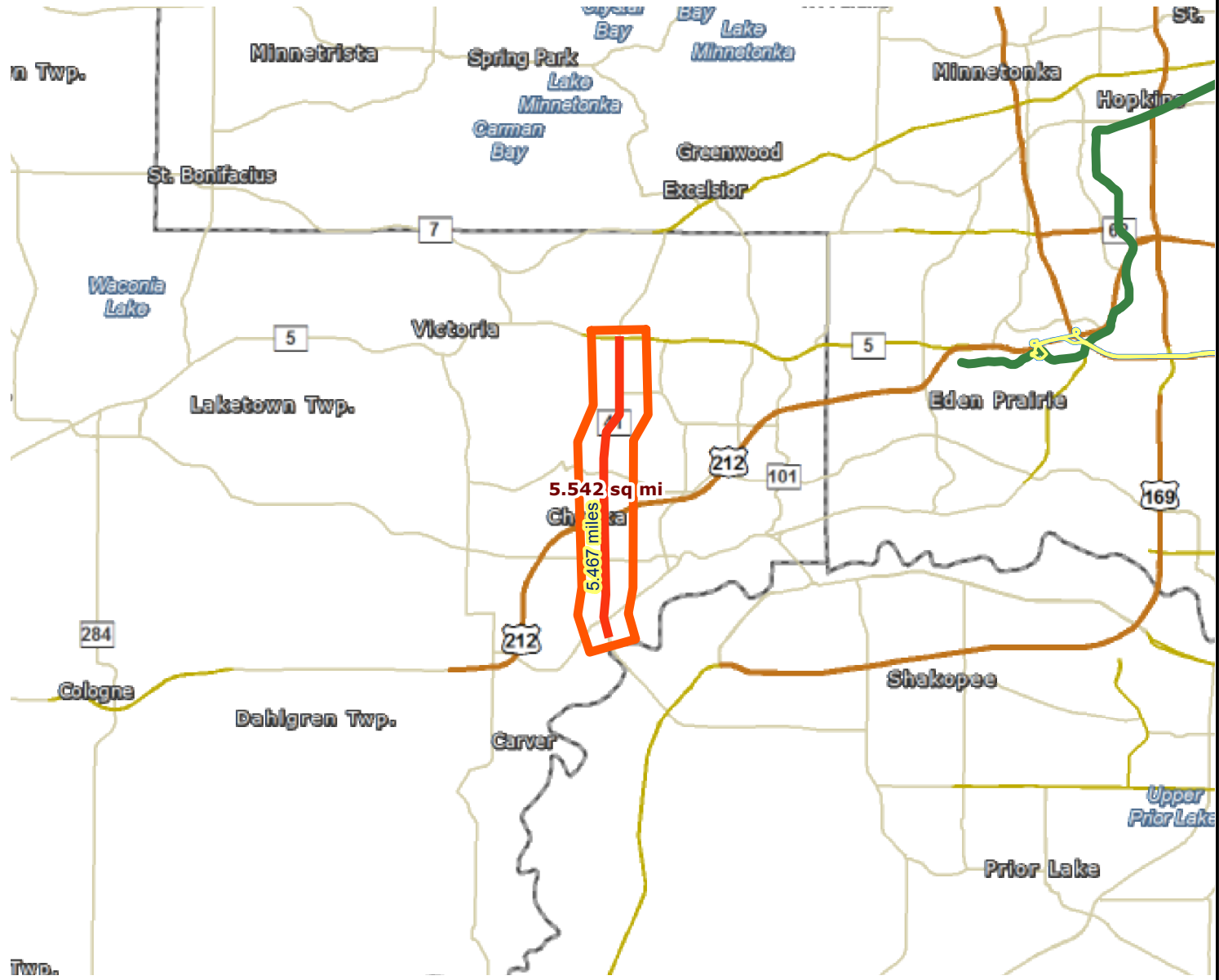
Volume

220: Hundertmark Rd & TH 41

1/5/2015

Splits and Phases: 220: Hundertmark Rd & TH 41





Results

Transit with a Direct Connection to project:  
684 687 690 691 694 695 697 698 699

*\*indicates Planned Alignments*

- Project
- Project Area
- Planned Alignments
- Light Rail, Green Line Extension
- Arterial BRT



Created: 10/29/2014  
LandscapeRSA3



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