Application

01969 - 2014 Roadway System Management

02094 - TH 47 CMAQ

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	11/26/2014 11:12 AM

Primary Contact

Name:*		Michael	Joseph	Fairbanks
	Salutation	First Name	Middle Name	Last Name
Title:	Principal Engineer			
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What Grant Programs are you most interested in?	Regional Solicitation - Roadways Including Multimodal Elements			

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 (City) Minnesota (State/Province) 55113 (Postal Code/Zip)
County:	Ramsey
Phone:*	651-366-3452 Ext.
Fax:	
PeopleSoft Vendor Number	0000024577A36

Project Information

Project Name	TH 47 CMAQ
Primary County where the Project is Located	Anoka
Jurisdictional Agency (If Different than the Applicant):	
Brief Project Description (Limit 2,800 characters; approximately 400 words)	The Signal Re-timing and Coordination Project will execute a very timely signal coordination project for TH 47 in the cities of Columbia Heights, Fridley, Spring Lake Park, Coon Rapids, and Blaine. The proposed scope of this project is as follows: Advanced signal coordination and re-timing of 18 signal as well as cabinet upgrades; and deployment of 14 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 47 is a Non-Freeway A-Minor Augmentor and A-Minor Expander.

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

Project Length (Miles) 7.0

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.

Connection to Local Planning

2030 Transportation Policy Plan (amended 2013)

Statewide Multimodal Transportation Plan

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 $1,016,000.00

Match Amount $254,000.00

Minimum of 20% of project total

Project Total $1,270,000.00

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

MnDOT State Aid Project Information: Roadway Projects

County, City, or Lead Agency MnDOT

Functional Class of Road A-Minor Augmentor and A-Minor Expander

Road System Trunk Highway

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

Name of Road TH 47

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55432

(Approximate) Begin Construction Date 07/03/2017

(Approximate) End Construction Date 06/29/2018

LOCATION

From:
(Intersection or Address)

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

37th Ave.

To:
(Intersection or Address)

TH 10 North Ramp

Type of Work

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

Old Bridge/Culvert?

New Bridge/Culvert?

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

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$63,500.00
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	$63,500.00
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	$1,143,000.00
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
Totals	**$1,270,000.00**

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
Transit and TDM Contingencies	$0.00
Other Transit and TDM Elements	$0.00
Totals	**$0.00**

Transit Operating Costs

OPERATING COSTS	Cost
Transit Operating Costs	$0.00
Totals	**$0.00**

Totals

Total Cost	$1,270,000.00
Construction Cost Total	$1,270,000.00
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 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 projected 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

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 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.

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 sufficienty 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 Rehabilitiation Projects Only

11.The bridge must have a sufficienty 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.

Other Attachments

File Name	Description	File Size
2094 State of MN HSIP.pdf	Crash B/C	32 KB
RdwayAreaDef.pdf	Roadway Area Definition	1.1 MB
RegionalEcon.pdf	Regional Economy	1.4 MB
SocioEcon.pdf	Socio Economic	1.5 MB
TransitCon.pdf	Transit Connections	1.5 MB

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	26.179
Project Length	7.023
Average Distance	3.7276
Upload Map	TH 47 CMAQ Roadway Area.pdf

Measure B: Current Heavy Commercial Traffic

Location	TH 47 @ 53rd Ave. N
Current daily heavy commercial traffic volume	1200.0

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	Yes

Direct connection to or within a mile of a Manufacturing/Distribution Location	Yes
Direct connection to or within a mile of an Educational Institution	Yes
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 47 CMAQ Regional Economy.pdf

Measure A: Current Daily Person Throughput

Location	TH 47 @ 57th Ave. N
Current AADT Volume	39000.0
Existing Transit Routes on the Project	10, 11, 25, 801, 805, 824, 825, 831, 852, 854, 860

Response - Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	50700.0

Measure B: 2030 Forecast ADT

Use Metropolitan Council model to determine forecast (2030) ADT volume	Yes
METC Staff - Forecast (2030) ADT volume	45000.0
OR	
Approved county or city travel demand model to determine forecast (2030) ADT volume	
Forecast (2030) ADT volume	0

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.	

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

Upload Map TH 47 CMAQ Socio-Economic.pdf

Measure B: Affordable Housing

City/Township	Segment Length (Miles)
Fridley	4.1
Columbia Heights	1.5
Spring Lake Park	0.6
Blaine	0.8
	7

Total Project Length

Total Project Length 7.0

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
Blaine	0.8	7.0	79.0	0.114	9.029
Columbia Heights	1.5	7.0	67.0	0.214	14.357
Fridley	4.1	7.0	80.0	0.586	46.857
Spring Lake Park	0.6	7.0	39.0	0.086	3.343
		28	**265**	**1**	**74**

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

Total Project Length (Miles) 7.0

Total Housing Score 73.586

Measure A: Equipment Improvements and Installation Year

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

Date of Equipment Installation 04/15/1998

Measure A: Cost Effectiveness of Vehicle Delay Reduction

Total Project Cost from Cost Sheet	$1,270,000.00
Total Peak Hour Vehicle Delay Without The Project	594.0
Total Peak Hour Vehicle Delay With The Project	504.0
Total Peak Hour Vehicle Delay Reduced by Project	90.0
Cost Effectiveness	$14,111.11
Synchro or HCM Reports	TH 47.pdf

Measure B: Cost Effectiveness of Emissions Reduction

Total Project Cost from Cost Sheet	$1,270,000.00
Total Peak Hour Kilograms Reduced by Project	7.2
Cost Effectiveness	$176,388.89
Synchro or HCM Reports	TH 47 - Before.syn

Measure A: Benefit/Cost of Crash Reduction

Project Benefit/Cost Ratio	4.63
Worksheet Attachment	TH47, 37th St to TH10.xls

Measure A: Transit Connections

Existing Routes Directly Connected to the Project	10, 11, 25, 801, 805, 824, 825, 831, 852, 854, 860
Planned Transitways directly connected to the project (alignment and mode determined and identified in the 2030 TPP)	Central Avenue Arterial BRT
Upload Map	TH 47 CMAQ Transit Connections.pdf

Response

Met Council Staff Data Entry Only

Route Ridership	5532701.0
Transitway Ridership	4192000.0

Measure B: Bicycle and Pedestrian Connections

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

The Rice Creek West Regional Trail has access to the TH 47 corridor near 69th Ave. Pedestrian accommodations are provided at the following intersections (most of which are ADA compliant): 37th, 40th, 44th, 49th, 53rd, 57th, 61st, Mississippi Street, 69th, 73rd, Osborne Road, 81st, 85th, TH 10 South Ramp, and TH 10 North Ramp with TH 47. Throughout the corridor there are numerous commercial and mixed use attractions including Northtown Mall.

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 Rice Creek West Regional Trail has access to the TH 47 corridor near 69th Ave. Pedestrian accommodations are provided at the following intersections (most of which are ADA compliant): 37th, 40th, 44th, 49th, 53rd, 57th, 61st, Mississippi Street, 69th, 73rd, Osborne Road, 81st, 85th, TH 10 South Ramp, and TH 10 North Ramp with TH 47. Routes 10, 11, 25, 801, 805, 824, 825, 831, 852, 854, 860 and the Church of St. William plus the Northtown Transit Center are included in this corridor.

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

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 Yes

100%

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

100%

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

60%

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

40%

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

0%

Anticipated date or date of executed Agreement

8)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/C worksheet

Control Section	T.H. / Roadway	Location	Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
0205	47	from 37th St N to TH 10	005+00.371	020+00.665	Fridley	1/1/2011	12/31/2013

Description of Proposed Work: ATMS - 16 Signals, fiber interconnect & cameras

		Accident Diagram Codes: 1	2	3	5	4, 7	8, 9	Pedestrian	6, 90, 98, 99 Other	Total
Study Period: Number of Crashes	Fatal **F**					1			1	**2**
	Personal Injury (PI) **A**	2			1	4	1		2	**10**
	B	23	2	4	9	4	1		9	
	C	40	3	12	6	6	3		10	**80**
	Property Damage **PD**	57	12	16	16	17	5		11	**134**
% Change in Crashes *Use FHWA cmfclearinghouse for Crash Reduction Factors	Fatal **F**					-8%			-8%	
	PI **A**	-8%			-8%	-8%	-8%		-8%	
	B	-8%	-8%	-8%	-8%	-8%	-8%		-8%	
	C	-8%	-8%	-8%	-8%	-8%	-8%		-8%	
	Property Damage **PD**	-8%	-8%	-8%	-8%	-8%	-8%		-8%	
Change in Crashes = No. of crashes **x** % change in crashes	Fatal **F**					**-0.08**			**-0.08**	**-0.16**
	PI **A**	**-0.16**			**-0.08**	**-0.32**	**-0.08**		**-0.16**	**-0.80**
	B	**-1.84**	**-0.16**	**-0.32**	**-0.72**	**-0.32**	**-0.08**		**-0.72**	**-4.16**
	C	**-3.20**	**-0.24**	**-0.96**	**-0.48**	**-0.48**	**-0.24**		**-0.80**	**-6.40**
	Property Damage **PD**	**-4.56**	**-0.96**	**-1.28**	**-1.28**	**-1.36**	**-0.40**		**-0.88**	**-10.72**

Year (Safety Improvement Construction): **2018**

Project Cost (exclude Right of Way): **$ 1,270,000**

Right of Way Costs (optional):

Traffic Growth Factor: **3%**

Capital Recovery

1. **Discount Rate:** **4.5%**
2. **Project Service Life (n):** **10**

Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit
F	**-0.16**	**-0.05**	**$ 1,100,000**	**$ 58,667**
A	**-0.80**	**-0.27**	**$ 550,000**	**$ 146,667**
B	**-4.16**	**-1.39**	**$ 160,000**	**$ 221,867**
C	**-6.40**	**-2.13**	**$ 81,000**	**$ 172,800**
PD	**-10.72**	**-3.57**	**$ 7,400**	**$ 26,443**
Total				**$ 626,443**

B/C= 4.63

Using present worth values,

B= $ 5,874,893

C= $ 1,270,000

See "Calculations" sheet for amortization.

Updated 9-5-2014

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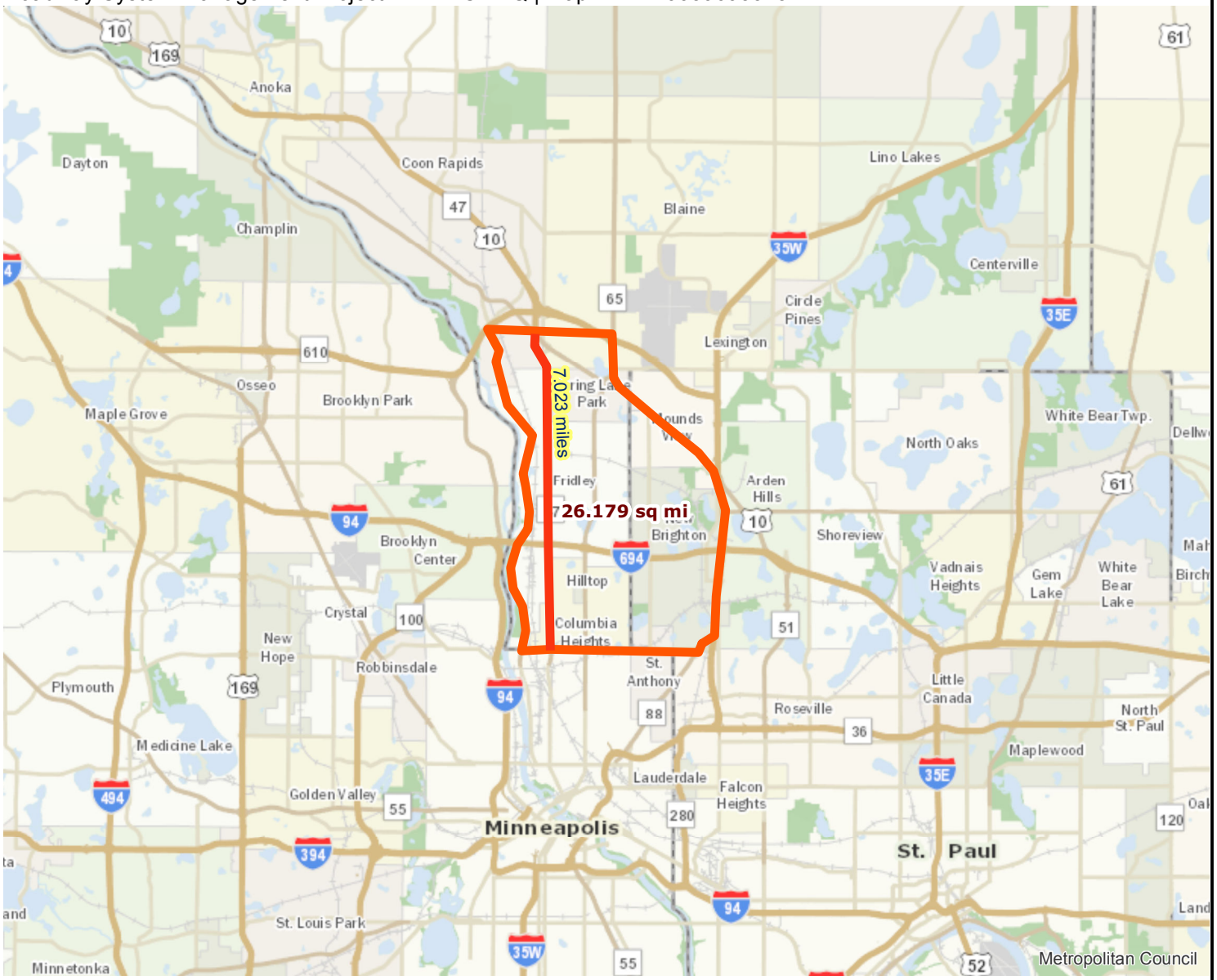
Roadway Area Definition

Roadway System Management Project: TH 47 CMAQ | Map ID: 1419959695513

Results

Project Length: 7.023 miles

Project Area: 26.179 sq mi



Project

Project Area

0 2 4 8 12 16 Miles

Created: 12/30/2014
LandscapeRSA1

METROPOLITAN COUNCIL

Regional Economy

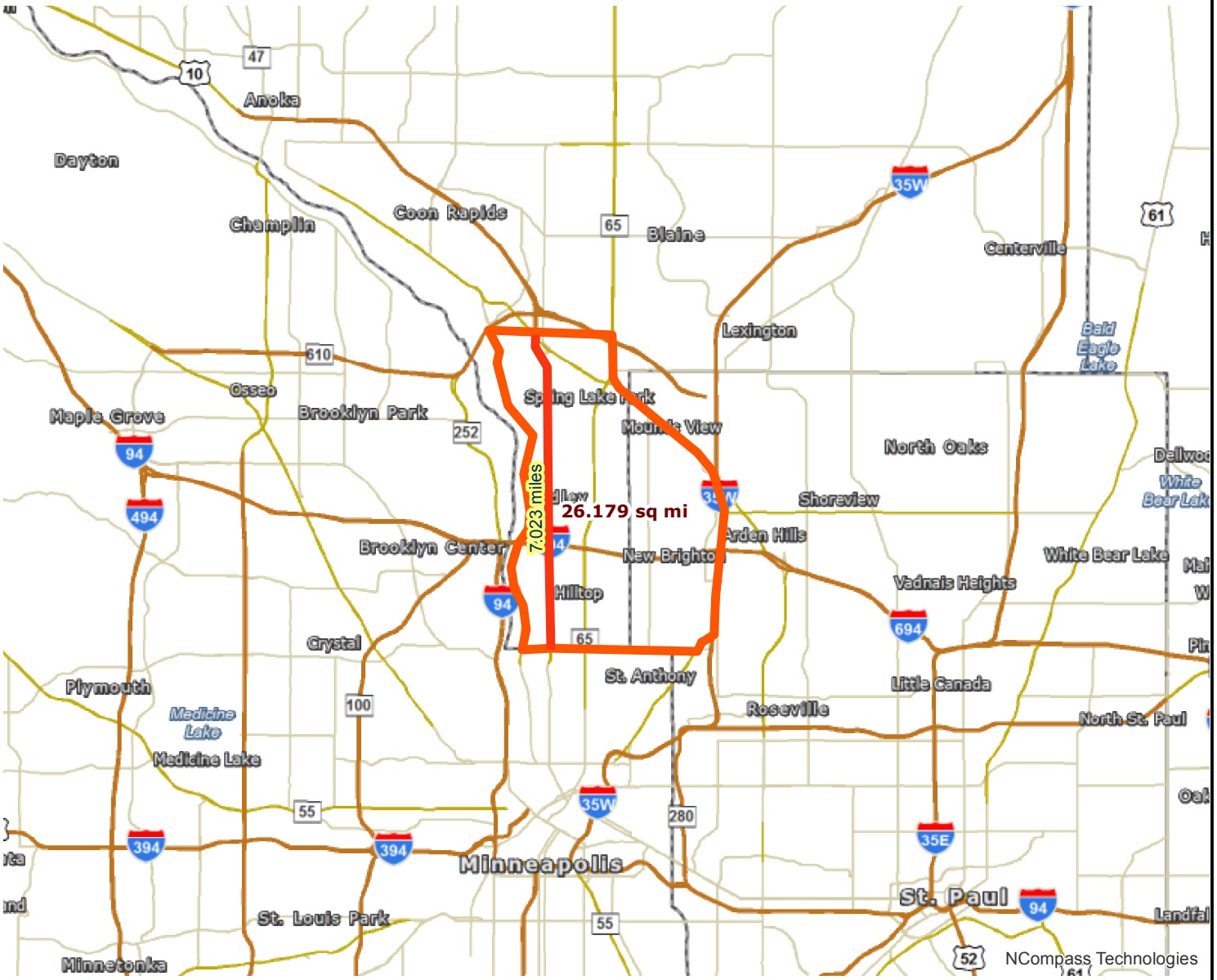
Roadway System Management Project: TH 47 CMAQ | Map ID: 1419959695513

Results

Project **IN** area of Job Concentration.

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

Project **CONNECTED** to area of Education Institutions.



Project

Project Area

0 2 4 8 12 16 Miles

Created: 12/30/2014
LandscapeRSA5

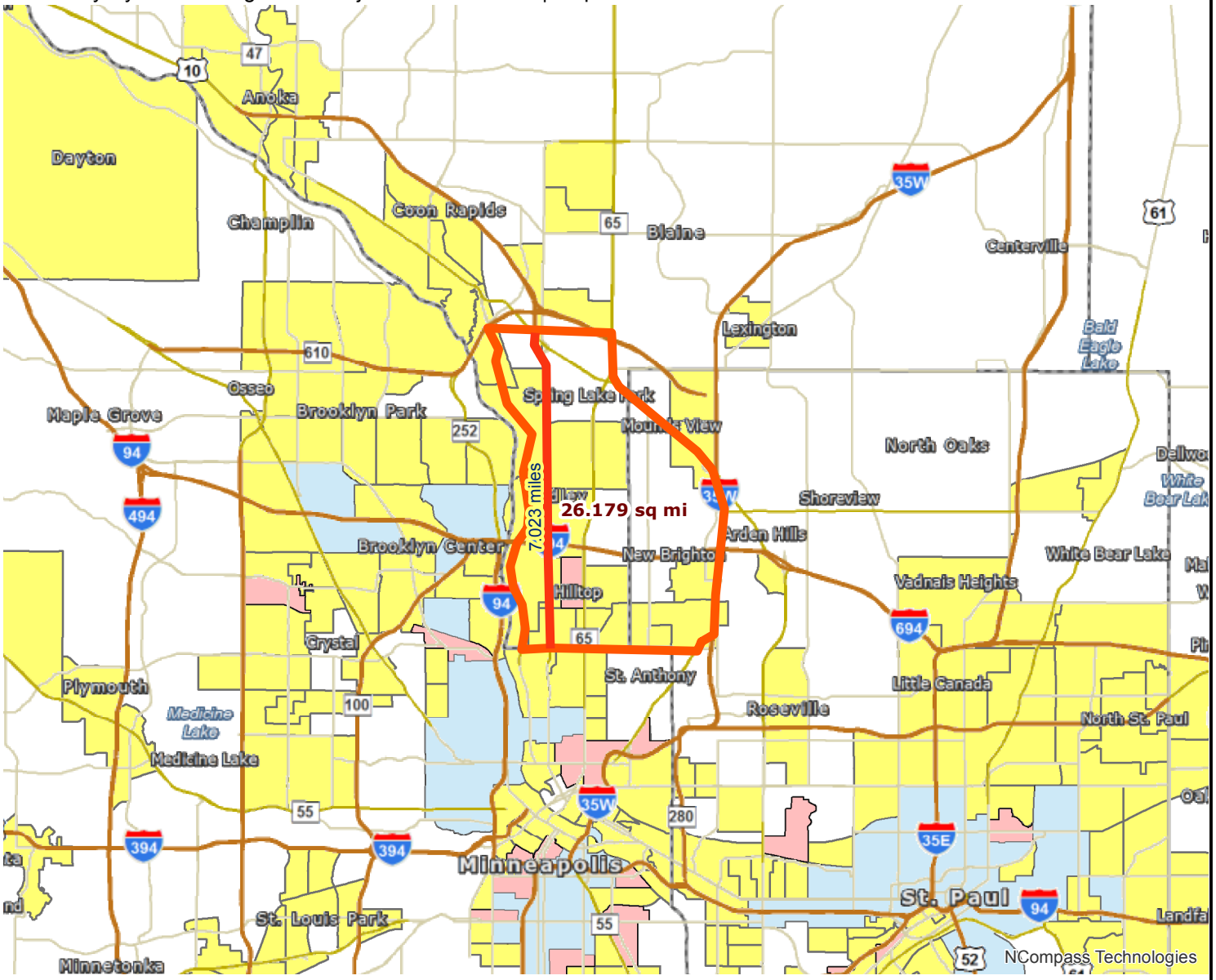
METROPOLITAN COUNCIL

Socio-Economic Conditions

Roadway System Management Project: TH 47 CMAQ | Map ID: 1419959695513

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

0 2 4 8 12 16 Miles

Created: 12/30/2014
LandscapeRSA2

METROPOLITAN COUNCIL

Transit Connections

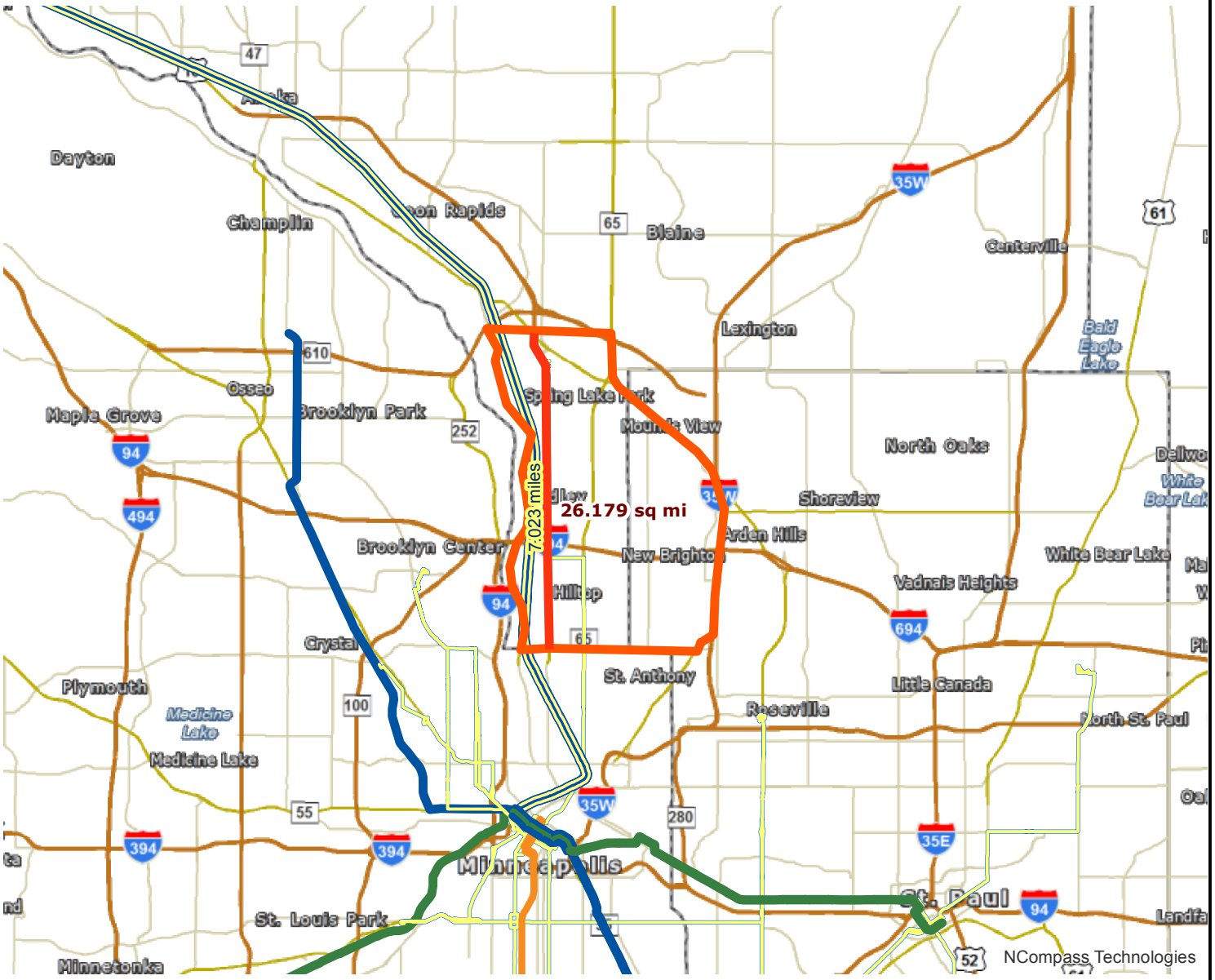
Roadway System Management Project: TH 47 CMAQ | Map ID: 1419959695513

Results

Transit with a Direct Connection to project:
10 11 25 801 805 824 825 831 852 854 860

*Central

**indicates Planned Alignments*



Project
Project Area

Transitway
Blue / Green Line
Blue Line
Green Line
Northstar Line

Planned Alignments
Arterial BRT
BRT, Orange Line
Light Rail, Blue Line Extension
Light Rail, Green Line Extension

0 2 4 8 12 16 Miles

Created: 12/30/2014
LandscapeRSA3

METROPOLITAN COUNCIL

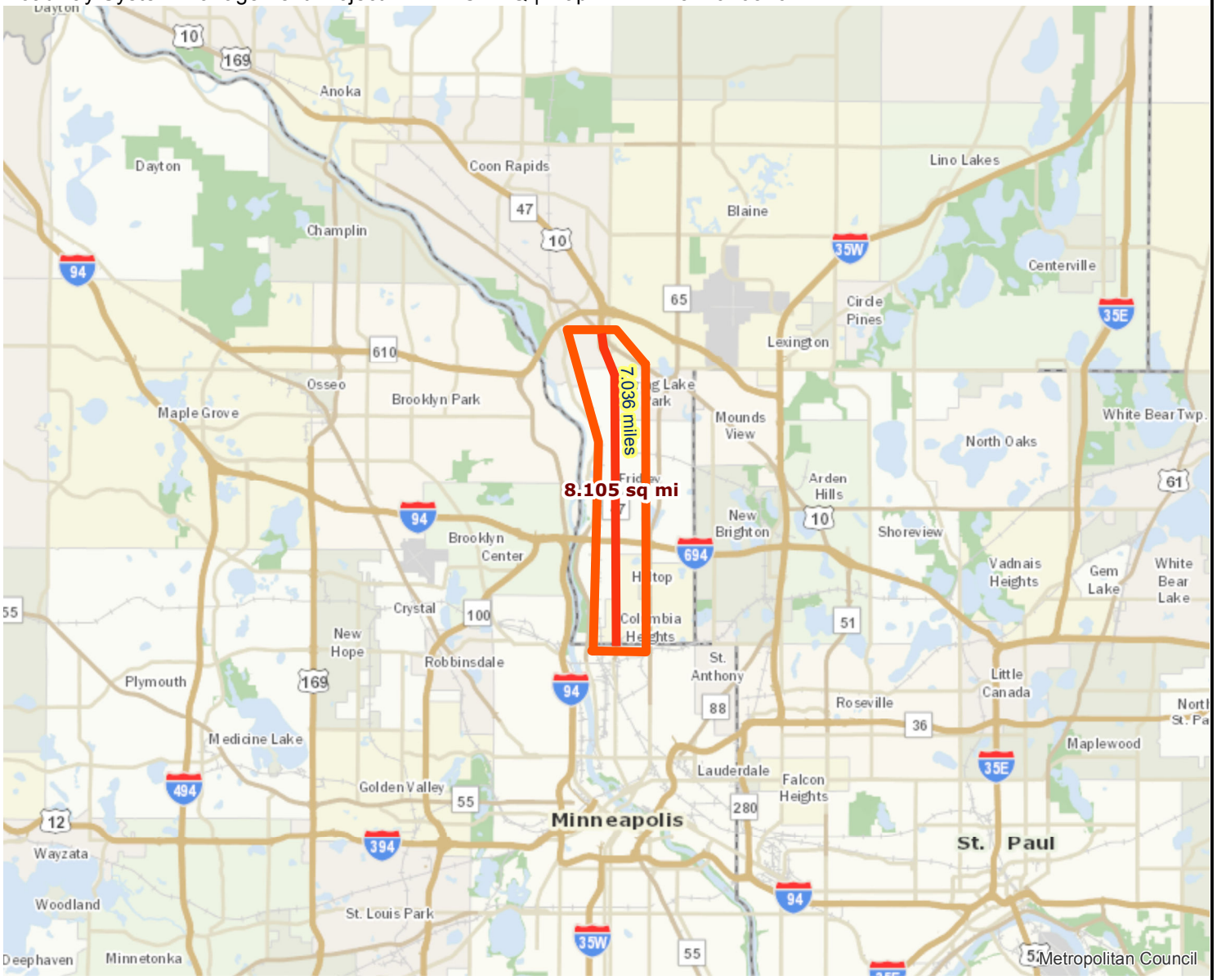
Roadway Area Definition

Roadway System Management Project: TH 47 CMAQ | Map ID: 1414522910510

Results

Project Length: 7.036 miles

Project Area: 8.105 sq mi



Project

Project Area

0 2 4 8 12 16 Miles

Created: 10/28/2014
LandscapeRSA1

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Regional Economy

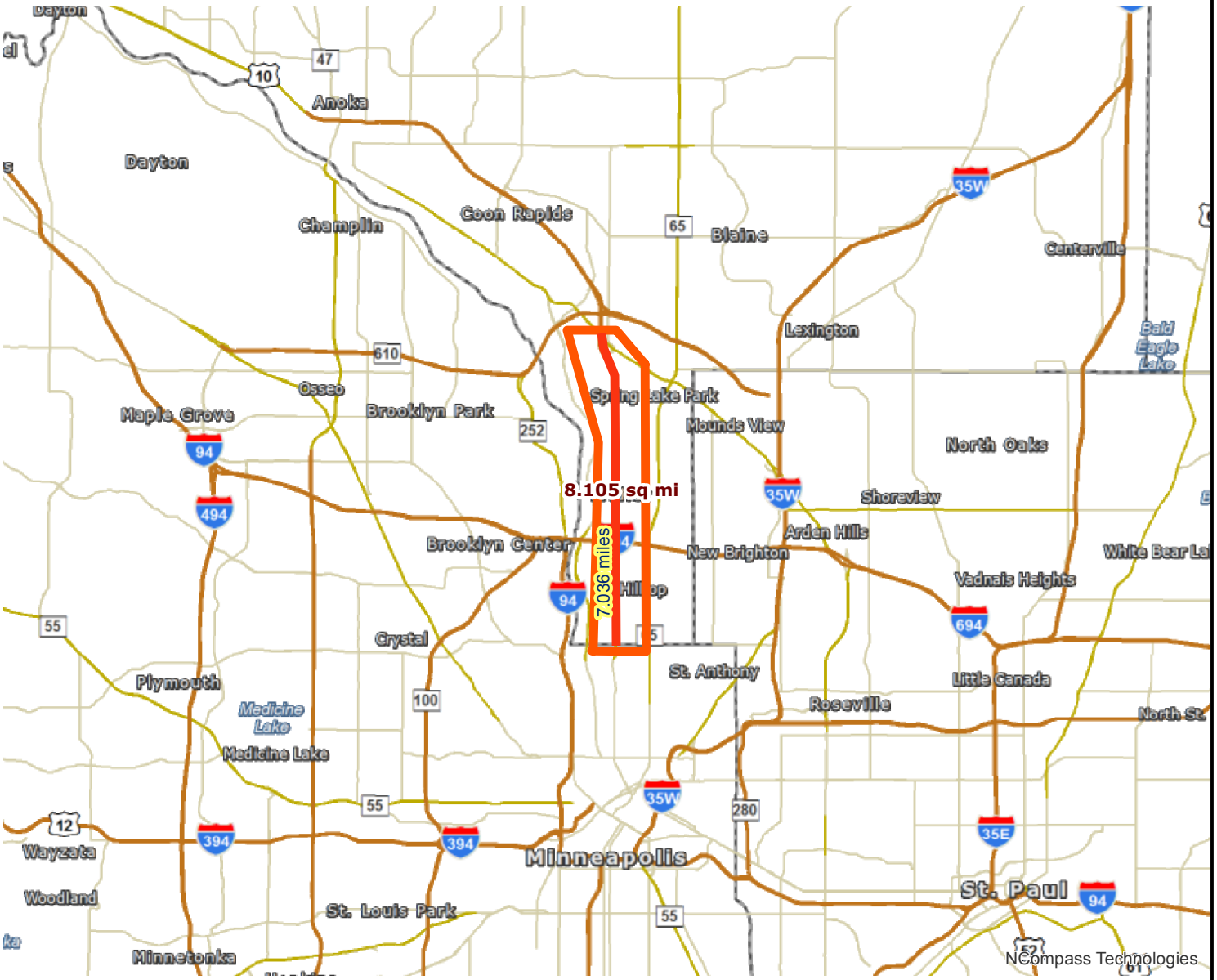
Roadway System Management Project: TH 47 CMAQ | Map ID: 1414522910510

Results

Project **IN** area of Job Concentration.

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

Project **CONNECTED** to area of Education Institutions.



Project

Project Area

0 2 4 8 12 16 Miles

Created: 10/28/2014
LandscapeRSA5

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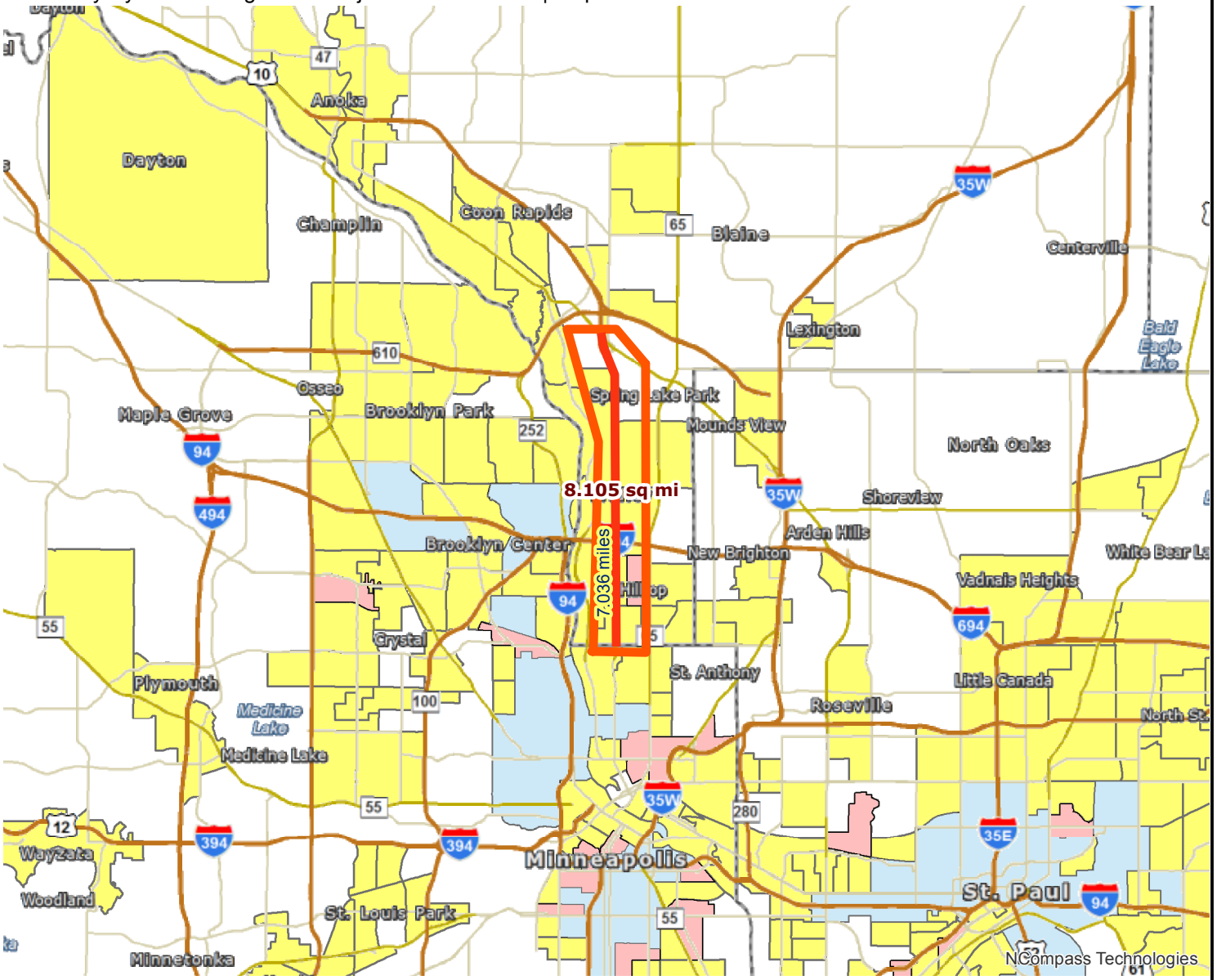
Socio-Economic Conditions

Roadway System Management Project: TH 47 CMAQ | Map ID: 1414522910510

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

0 2 4 8 12 16 Miles

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LandscapeRSA2

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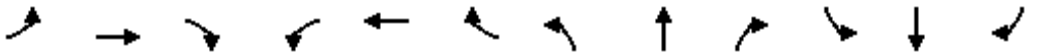


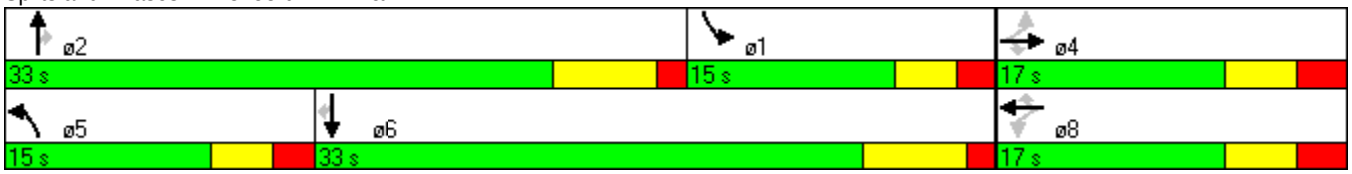
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	120	44	68	60	192	20	1340	104	188	879	120
Satd. Flow (prot)	0	1802	1568	0	1797	1568	1752	3505	1568	1694	3505	1568
Flt Permitted		0.737			0.443		0.950			0.950		
Satd. Flow (perm)	0	1360	1568	0	817	1568	1752	3505	1568	1694	3505	1568
Satd. Flow (RTOR)			51			223			121			139
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%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	51	0	149	223	23	1554	121	218	1020	139
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Total Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	15.0	33.0	33.0	15.0	33.0	33.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	4.5
Act Effct Green (s)		13.0	13.0		13.0	13.0	8.2	28.5	28.5	11.0	40.9	40.9
Actuated g/C Ratio		0.20	0.20		0.20	0.20	0.13	0.44	0.44	0.17	0.63	0.63
v/c Ratio		0.96	0.14		0.91	0.45	0.10	1.01	0.16	0.76	0.46	0.13
Control Delay		74.8	8.5		82.4	7.1	26.3	46.2	3.1	45.4	8.1	2.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		74.8	8.5		82.4	7.1	26.3	46.2	3.1	45.4	8.1	2.1
LOS		E	A		F	A	C	D	A	D	A	A
Approach Delay		63.9			37.2			42.9			13.4	
Approach LOS		E			D			D			B	
Queue Length 50th (ft)		103	0		58	0	8	~317	0	83	82	0
Queue Length 95th (ft)		#233	24		#158	50	27	#475	25	#183	205	25
Internal Link Dist (ft)		444			694			1241			1201	
Turn Bay Length (ft)			125			50	420		230	450		
Base Capacity (vph)		272	354		163	492	296	1537	755	287	2208	1039
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.96	0.14		0.91	0.45	0.08	1.01	0.16	0.76	0.46	0.13

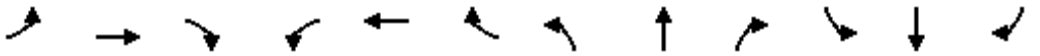
Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 91.1%	ICU Level 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.

Splits and Phases: 13: 53rd Av NE & TH 47



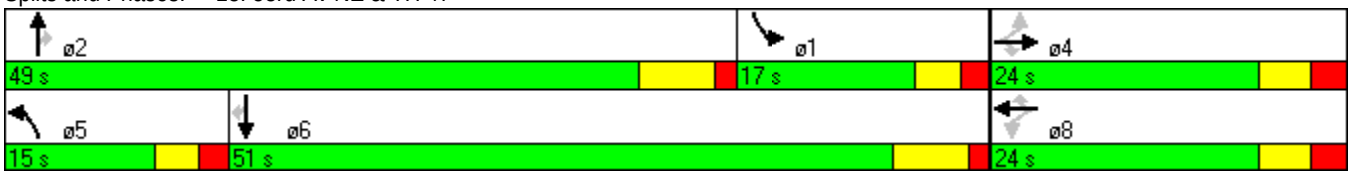


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	120	44	68	60	192	20	1340	104	188	879	120
Satd. Flow (prot)	0	1802	1568	0	1797	1568	1752	3505	1568	1694	3505	1568
Flt Permitted		0.688			0.467		0.950			0.950		
Satd. Flow (perm)	0	1269	1568	0	861	1568	1752	3505	1568	1694	3505	1568
Satd. Flow (RTOR)			51			223			119			139
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 (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
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)	0	260	51	0	149	223	23	1554	121	218	1020	139
Turn Type	Perm		Perm	Perm		Perm	Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	15.0	49.0	49.0	17.0	51.0	51.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.0	4.5	4.5
Act Effct Green (s)		20.0	20.0		20.0	20.0	8.3	44.5	44.5	13.0	56.4	56.4
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.09	0.49	0.49	0.14	0.63	0.63
v/c Ratio		0.92	0.13		0.78	0.43	0.14	0.90	0.14	0.89	0.46	0.13
Control Delay		73.5	9.5		61.9	7.1	39.4	29.2	3.0	74.8	10.8	2.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		73.5	9.5		61.9	7.1	39.4	29.2	3.0	74.8	10.8	2.2
LOS		E	A		E	A	D	C	A	E	B	A
Approach Delay		63.0			29.0			27.5			20.1	
Approach LOS		E			C			C			C	
Queue Length 50th (ft)		145	0		80	0	12	403	1	123	118	0
Queue Length 95th (ft)		#292	29		#182	56	36	#536	27	#254	244	26
Internal Link Dist (ft)		444			694			1241			1201	
Turn Bay Length (ft)			125			50	420		230	450		
Base Capacity (vph)		282	388		191	522	214	1733	835	245	2195	1034
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.92	0.13		0.78	0.43	0.11	0.90	0.14	0.89	0.46	0.13

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: 0.92	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 91.1%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 13: 53rd Av NE & TH 47



Transit Connections

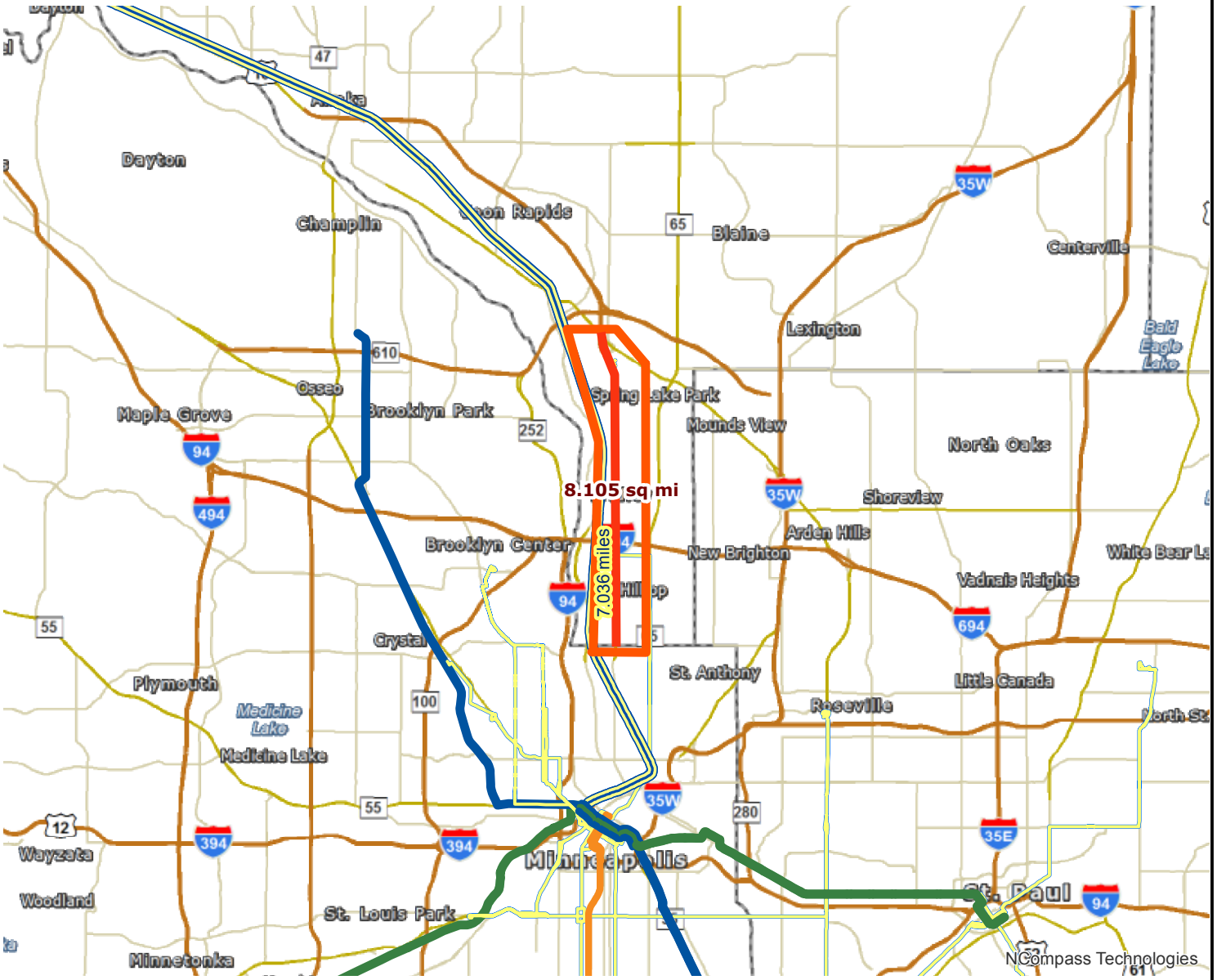
Roadway System Management Project: TH 47 CMAQ | Map ID: 1414522910510

Results

Transit with a Direct Connection to project:
10 11 25 801 805 824 825 831 852 854 860

*Central

**indicates Planned Alignments*



Project
Project Area

Transitway
Blue / Green Line
Blue Line
Green Line
Northstar Line

Planned Alignments
Arterial BRT
BRT, Orange Line
Light Rail, Blue Line Extension
Light Rail, Green Line Extension

0 2 4 8 12 16 Miles

Created: 10/28/2014
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