

ACTION TRANSMITTAL No. 2018-07

DATE: December 21, 2017
TO: Technical Advisory Committee
FROM: TAC Funding and Programming Committee
PREPARED BY: Joe Barbeau, Senior Planner (651-602-1705)
SUBJECT: Scope Change Request for MnDOT's TH 41 ATMS Installation and Signal Optimization Project
REQUESTED ACTION: MnDOT requests a scope change to its TH 41 ATMS Installation and Signal Optimization Project (SP # 1008-91) to eliminate signal cabinets and fiber optic interconnect with a federal funding reduction from \$597,840 to \$381,600.
RECOMMENDED MOTION: That TAC recommend to the Transportation Advisory Board approval of a scope change request to MnDOT's TH 41 ATMS Installation and Signal Optimization Project (SP # 1008-91) to eliminate signal cabinets and fiber optic interconnect with a federal funding reduction from \$597,840 to \$381,600.

BACKGROUND AND PURPOSE OF ACTION: MnDOT was awarded \$564,000 (\$597,840, after inflation adjustment) in Congestion Management and Air Quality (CMAQ) Program funds in the 2014 Regional Solicitation to install an advanced traffic management system (ATMS) and optimize signals along Trunk Highway 41 from Second Street to Trunk Highway 5 in Carver County. The project is programmed for fiscal year 2018.

Three additional projects, the TH 41 intersection improvement project in Chaska and two future projects in Downtown Chaska and on Lyman Boulevard, respectively, lead the project to need fewer elements. Specifically, the following elements were retained and removed, respectively, from the project:

Retained:

- 15 signal re-timings
- 16,520 feet of fiber
- Camera: Engler (County 10)
- Camera: Canyon / Park & Ride
- Camera: Hundertmark
- Camera: Pioneer Trail
- Camera: Hazeltine
- Cabinet: Crosstown/Victoria
- Cabinet: Engler (County 10)
- Cabinet: 212 South ramp
- Cabinet: 212 North ramp
- Cabinet: Hazeltine

Removed:

- 7,155 feet of fiber
- Camera: Second Street
- Camera: Fourth Street
- Camera: Chaska Blvd (County 61)
- Cabinet: Walnut
- Cabinet: Chaska Blvd (County 61)
- Cabinet: Pioneer Trail

Because the signal timing elements remain intact in the proposal, the project termini would not change.

RELATIONSHIP TO REGIONAL POLICY: Projects that receive funding through the Regional Solicitation process are subject to the regional scope change policy. The purpose of this policy is to ensure that the project is designed and constructed according to the plans and intent described in the original application. Additionally, federal rules require that any federally-funded project scope change must go through a formal review and TIP amendment process if the project description or total project cost changes substantially. The scope change policy and process allow project sponsors to adjust their projects as needed while still providing substantially the same benefits described in their original project applications.

A TIP amendment request is not included with this request, as the proposed change would not alter the project description and the proposed cost change would not warrant a TIP amendment.

STAFF ANALYSIS: This project was funded through the Roadway System Management (RSM) category in the 2014 Regional Solicitation. Because every RSM project was funded in that Solicitation, staff did not work with scorers to determine an overall scoring change, as a determination that an unfunded project would have scored above it is not feasible.

The amount of federal funding to be removed from the project should be considered based on the proposed changes. The project was originally funded at a cost of \$747,300, with an 80% federal contribution of \$597,840. The applicant's revised cost estimate shows a total of \$477,000 with an 80% federal contribution of \$381,600. The original and revised estimates shown on the final page of the attached scope change request show the cost of each element and staff believes that the requested funding amount would be appropriate, should TAB approve this request. This would lead to a return of \$216,240 to the region for fiscal year 2018.

COMMITTEE COMMENTS AND ACTION: At its December 21, 2017, meeting, the Funding & Programming Committee voted unanimously to recommend that TAB approve the scope change as requested.

ROUTING

TO	ACTION REQUESTED	COMPLETION DATE
TAC Funding & Programming Committee	Review & Recommend	12/21/2017
Technical Advisory Committee	Review & Recommend	
Transportation Advisory Board	Review & Approve	

Date: November 15, 2017

Mr. Timothy Mayasich
Chair, TAC Funding and Programming Committee
Metropolitan Council
390 Robert Street North
St. Paul, MN 55101

RE: Scope Change Request
S.P. 1008-91 (TH 41)
ATMS Installation and Signal Optimization

Greeting,

The state of Minnesota respectfully requests that the Metropolitan Council TAC Funding and Programming Committee consider the attached Scope Change request for the above referenced project.

Due to a recent project along the TH 41 corridor (SP 1008-85) and future projects in Downtown Chaska (SP 1008-87) and Lyman Boulevard (SP 1008-94), the scope of SP 1008-91 has changed. In particular, the signal cabinets on CSAH 61 @ Walnut, TH 41 @ 6th Street (Chaska BLVD), and TH 41 @ Pioneer Trail will no longer be needed in SP 1008-91. The fiber optic interconnect on TH 41 from 2nd Street to 6th Street (Chaska BLVD) and TH 41 from Hazeltine Boulevard to Lyman BLVD will also not be required. In addition to these changes, MnDOT has also removed the need for three surveillance cameras on TH 41 @ 2nd Street, TH 41 @ 4th Street, and TH 41 @ 6th Street (Chaska BLVD) which will be part of SP 1008-87. These physical infrastructure changes will not affect the need for retiming on TH 41 from 2nd Street to TH 5 so I request that the project limits do not change on the project.

These projects were not known at the time of the original solicitation. SP 1008-85 was solicited by Carver County the same year as SP 1008-91. SP 1008-87 was scoped and signed on 6/22/2015. SP 1008-94 is a recent Cooperative Agreement project selected on November 3, 2017.

Sincerely,



Michael Fairbanks
MnDOT Metro Traffic Signal Operations Engineer

CC: Colleen Brown – MnDOT Metro State Aid
Cathy Huebsch – MnDOT Metro State Aid
Elaine Koutsoukas – Met Council
Joe Barbeau – Met Council

Scope Change Request

ATMS Installation and Signal Optimization SP 1008-91 (TH 41)

Location Map

A map showing the location of the project within the area and region is attached as Exhibit A. It also explains the project purpose and need statement.

Revised Project Description

Over the past 3 years several projects have surfaced which reduced the scope of SP 1008-91. These projects are detailed below and the corresponding work associated with them is shown. As each of these projects came through separate means of funding (Regional Solicitation, Cooperative Agreement Solicitation, and State Road Construction/Preservation) it is important to remember the timelines for each as they were not known at the time of the original solicitation for CMAQ funds.

SP 1008-87

STIP Description: MN41, 0.1 MI S OF MN RIVER TO CARVER-CSAH 61 IN CHASKA - BITUMINOUS MILL AND OVERLAY, MEDIAN INSTALLATION, TURN LANES, SIGNAL MODIFICATIONS, ADA, REHAB BRIDGE #10012, DRAINAGE

This project would provide modifications to the signal systems on TH 41 @ 2nd Street, 4th Street, and a replacement of the signal system @ 6th Street (Chaska BLVD). It reduces the need to provide a signal cabinet at the intersection of Old US 212 & Walnut because that signal was turned back to Carver County as part of agreement #93384. It also reduces the need to provide a signal cabinet on TH 41 @ 6th Street (Chaska BLVD). The corresponding fiber optic interconnect (approximately 1,665 feet), cameras, and splice vault/pigtails for the intersections will be eliminated. The total reduction in cost of these physical elements would be approximately \$137,500 - see Exhibit B for a more detailed reduction is cost spreadsheet.

SP 1008-85

STIP Description: MN41, FROM US212 TO 0.3 MI N CSAH 14 IN CHASKA- ROADWAY RECONSTRUCTION AND EXPANSION, INTERSECTION IMPROVEMENTS, SIGNALS AND ADA (TIED TO 010-596-011 AND 1008-85E)

This project will replace the signals on TH 41 @ Hudertmark Road and TH 41 @ Pioneer Trail. It reduces the need to provide a signal cabinet on TH 41 @ Pioneer Trail. The total reduction in cost of this would be approximately \$39,000 - see Exhibit B for a more detailed reduction is cost spreadsheet.

SP 1008-94 (FY 2019 COOPERATIVE AGREEMENT PROJECT)

Description: TH 41 AT CSAH 18 (LYMAN BLVD) – INTERSECTION RECONSTRUCTION

This project will replace the existing span wire signal system with a roundabout. It reduces the need to provide fiber optic interconnect and splice vault/pigtail from TH 41 @ Hazeltine BLVD to TH 41 @ Lyman BLVD. The total reduction in cost of this would be approximately \$51,500 - see Exhibit B for a more detailed reduction is cost spreadsheet.

Project Layout

A layout showing the original elements of the project (Cabinets, Cameras, and Fiber) is attached as Exhibit C. A layout showing the revised elements of the project (cabinets, cameras, and fiber) is attached as Exhibit D.

Work to be completed

The signal plan for this project is currently being designed. The project is currently programmed for a March 23, 2018 letting.

Revised cost estimate

Attached in Exhibit E is the original cost estimate for the project of \$705,000 (\$747,000 after inflation) and the revised cost estimate for the project of \$477,000.



Location Map



FISCAL YEAR: 2018
 STATE PROJECT: 1008-91
 METRO SCOPING ID: 1592

DESCRIPTION: CMAQ - Install ATMS system and signal optimization - (includes Fiber, cameras, cabinet upgrades, signal retiming)

LOCATION: On TH 41 from 2nd Street to TH 5

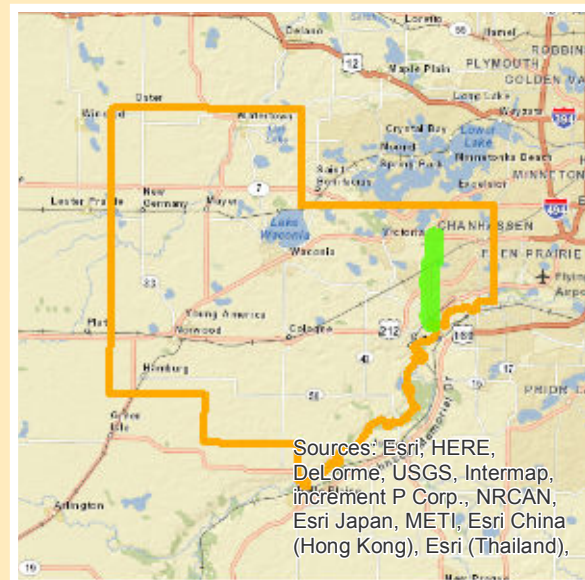
COUNTY: Carver CITY: Chanhassen, Chaska

PROJECT MANAGER: Gerbensky, Michael FUNCTIONAL AREA: Traffic Engineering

PURPOSE STATEMENT: The purpose is to improve traffic flow and reduce delays to the traveling public through an Advanced Traffic Management System (ATMS) along the signalized arterial. The traffic signals will be retimed to optimize traffic flow, reducing delays and improving the air quality. Fiber optic interconnection, upgraded traffic signal controllers will enable the traffic signals to be optimized, and the traffic surveillance cameras will be used to continuously ... (more info*)

NEED STATEMENT: The need is to install an Advanced Traffic Management System (ATMS) along the signalized arterial to optimize traffic flow, reduce delays, improve the air quality, and provide traffic surveillance of the arterial. This includes upgrading the traffic signal controllers, retiming the traffic signals, the installation of Ethernet fiber optic communications between the intersections with communications back to the RTMC (Regional Traffic Management Center), and traffic surveillance cameras.

* See project documentation for more information.



Legend

- █ Project Area
- Signal Systems (Known)
- Bridges
- MnDOT Right of Way*
- Reference Posts
- Interstate
- US
- MN
- County Routes
- Street Names
- Railroad
- Ramp
- Counties
- Civil Townships
- Cities

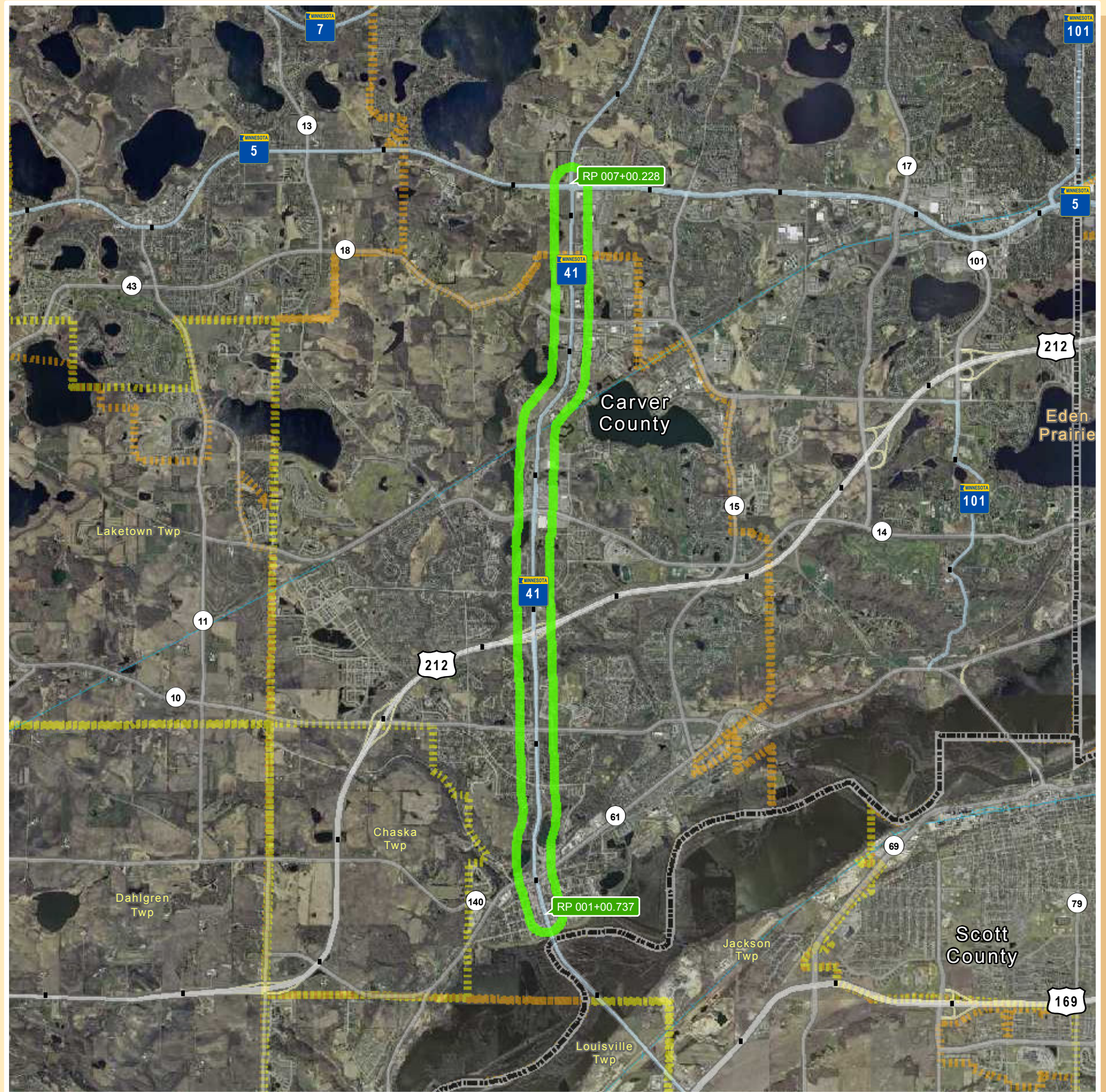


EXHIBIT B

REDUCTION IN COST FOR TH 41 METRO CMAQ PROJECT		Ref Pnt	Controller and Cabinet	Signal Timing	Timing Cost \$ 3,000.00	Fiber Interconnect			Number	Splice Vault & Pigtails Total \$5K \$5,000	VMS	Number	Cameras Cost 10,000.00	Mobilization & Testing \$ 11,500.00	Sub Total	Cover 10%+1000	Total
ref #	As Of 11/15/2017					Miles	Feet	Total @ \$7.00/ft \$ 7.00									
	TH 41 in Chaska																
1	TH 41 & 2nd St.	1.752	\$0.00			0.0	\$ -	1	\$5,000		1	\$10,000					
2	TH 41 & 4th St.	1.895	\$0.00			765.0	\$ 5,355.00	1	\$5,000		1	\$10,000					
3	TH (Old US 212) & Walnut (Carver Co Sig)	2.036	\$30,000.00			150.0	\$ 1,050.00	1	\$5,000		0	\$0					
4	TH 41 & Chaska Blvd (61) (Old US 212)	1.92	\$30,000.00			750.0	\$ 5,250.00	1	\$5,000		1	\$10,000					
10	TH 41 & Hundertmark	4.142	\$0.00														
11	TH 41 & Pioneer Tr.	4.761	\$30,000.00														
13	TH 41 & Lyman	6.225				5490.0	\$ 38,430.00	1	\$5,000								

Totals	\$90,000.00	0	\$ -	0.00	7155.0	\$ 50,085.00	5	\$ 25,000.00	\$ -	3	\$ 30,000.00	\$ 11,500.00	\$ 206,585.00	\$ 21,658.50	\$ 228,243.50	\$228,000
Fed (80%)	\$ 72,000.00		\$ -			\$ 40,068.00		\$ 20,000.00	\$ -		\$ 24,000.00	\$ 9,200.00	\$ 165,268.00	\$ 17,326.80	\$ 182,594.80	\$182,400
SC (20%)	\$ 18,000.00		\$ -			\$ 10,017.00		\$ 5,000.00	\$ -		\$ 6,000.00	\$ 2,300.00	\$ 41,317.00	\$ 4,331.70	\$ 45,648.70	\$45,600

SP 1008-87
 SP 1008-85
 SP 1008-94



Original Project Layout

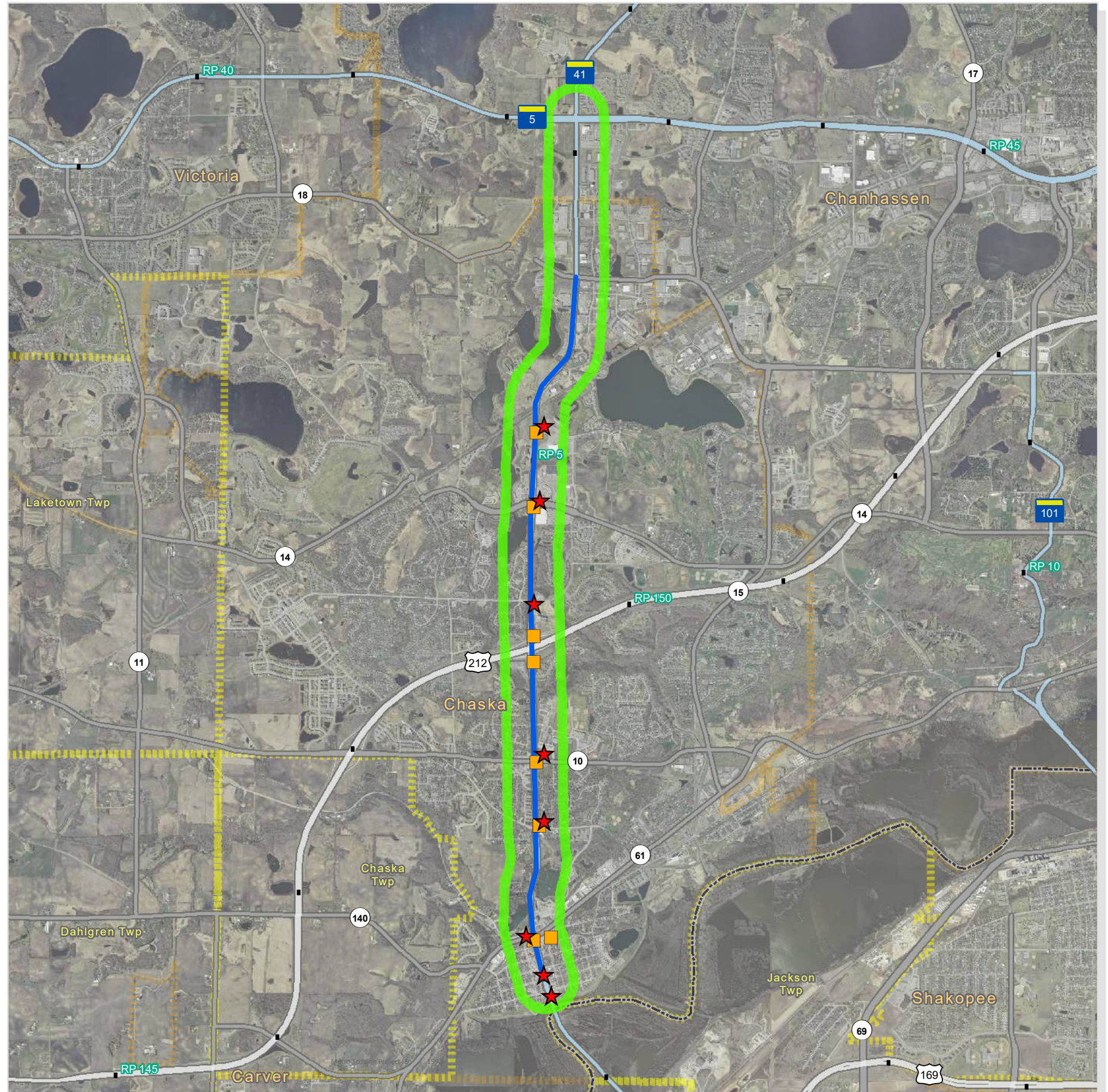


FISCAL YEAR:	2018	DESCRIPTION: CMAQ - Install ATMS system and signal optimization - (includes Fiber, cameras, cabinet upgrades, signal retiming)
STATE PROJECT:	1008-91	
METRO SCOPING ID:	1592	

LOCATION: On TH 41 from 2nd Street to TH 5

Signal Systems

- Cabinet
- ★ Camera
- Fiber





Revised Project Layout






FISCAL YEAR: 2018
 STATE PROJECT: 1008-91
 METRO SCOPING ID: 1592

DESCRIPTION: CMAQ - Install ATMS system and signal optimization - (includes Fiber, cameras, cabinet upgrades, signal retiming)

LOCATION: On TH 41 from 2nd Street to TH 5

Signal Systems

-  Cabinet
-  Camera
-  Fiber

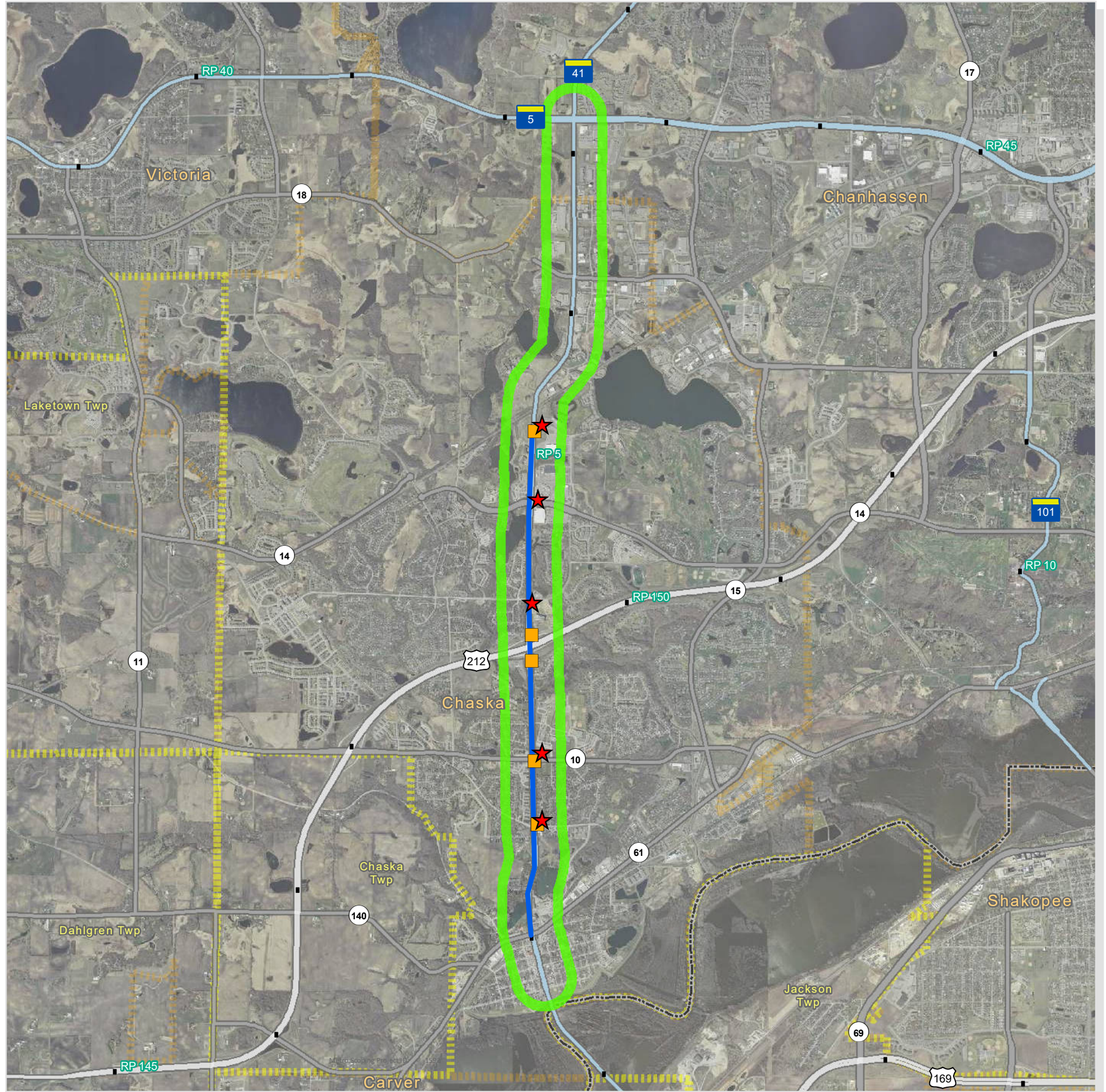


EXHIBIT E

ORIGINAL METRO CMAQ PROJECT		Ref Pnt	Controller and Cabinet	Signal Timing	Timing Cost \$ 3,000.00	Fiber Interconnect			Number	Splice Vault & Pigtailes Total \$5K \$5,000	VMS	Number	Cameras Cost \$ 10,000.00	Mobilization & Testing \$ 40,000.00	Sub Total	Cover 10%+1000	Total
ref #	As Of 10/31/2014					Miles	Feet	Total @ \$7.00/ft \$ 7.00									
TH 41 in Chaska																	
1	TH 41 & 2nd St.	1.752	\$0.00	1	\$3,000		0.0	\$ -	1								
2	TH 41 & 4th St.	1.895	\$0.00	1	\$3,000		765.0	\$ 5,355.00	1								
3	TH (Old US 212) & Walnut (Carver Co Sig)	2.036	\$30,000.00	1	\$3,000		150.0	\$ 1,050.00	1								
4	TH 41 & Chaska Blvd (61) (Old US 212)	1.92	\$30,000.00	1	\$3,000		750.0	\$ 5,250.00	1								
5	TH 41 & Crosstown/Victoria	2.723	\$30,000.00	1	\$3,000		3520.0	\$ 24,640.00	1								
6	TH 41 & Engler (10)	3.144	\$30,000.00	1	\$3,000		2300.0	\$ 16,100.00	1								
7	TH 41 & Canyon/ Park & Ride	3.665	\$0.00	1	\$3,000		2700.0	\$ 18,900.00	1								
8	TH 41 & 212 SR	3.789	\$30,000.00	1	\$3,000		700.0	\$ 4,900.00	1								
9	TH 41 & 212 NR Fiber Connection	3.801	\$30,000.00	1	\$3,000		500.0	\$ 3,500.00	1								
10	TH 41 & Hundertmark	4.142	\$0.00	1	\$3,000		1250.0	\$ 8,750.00	1								
11	TH 41 & Pioneer Tr.	4.761	\$30,000.00	1	\$3,000		3200.0	\$ 22,400.00	1								
12	TH 41 & Hazeltine	5.226	\$30,000.00	1	\$3,000		2350.0	\$ 16,450.00	1								
13	TH 41 & Lyman	6.225		1	\$3,000		5490.0	\$ 38,430.00	1								
14	TH 41 & 82nd	6.704		1	\$3,000												
15	TH 41 & TH 5	42.553		1	\$3,000												

Totals			\$240,000.00	15	\$ 45,000.00	0.00	23675.0	\$ 165,725.00	13	\$ 65,000.00	\$ -	8	\$ 80,000.00	\$ 40,000.00	\$ 635,725.00	\$ 64,572.50	\$ 700,297.50
Fed (80%)			\$ 192,000.00		\$ 36,000.00			\$ 132,580.00		\$ 52,000.00	\$ -		\$ 64,000.00	\$ 32,000.00	\$ 508,580.00	\$ 51,658.00	\$ 560,238.00
SC (20%)			\$ 48,000.00		\$ 9,000.00			\$ 33,145.00		\$ 13,000.00	\$ -		\$ 16,000.00	\$ 8,000.00	\$ 127,145.00	\$ 12,914.50	\$ 140,059.50

\$705,000
\$564,000
\$141,000

Inflated
\$747,300.00
\$597,840.00
\$149,460.00

REVISED COST ESTIMATE METRO CMAQ PROJECT		Ref Pnt	Controller and Cabinet	Signal Timing	Timing Cost \$ 3,000.00	Fiber Interconnect			Number	Splice Vault & Pigtailes Total \$5K \$5,000	VMS	Number	Cameras Cost \$ 10,000.00	Mobilization & Testing \$ 31,500.00	Sub Total	Cover 10%+1000	Total
ref #	As Of 11/15/2017					Miles	Feet	Total @ \$7.00/ft \$ 7.00									
TH 41 in Chaska																	
1	TH 41 & 2nd St.	1.752	\$0.00	1	\$3,000			\$ -									
2	TH 41 & 4th St.	1.895	\$0.00	1	\$3,000			\$ -									
3	TH (Old US 212) & Walnut (Carver Co Sig)	2.036	\$0.00	1	\$3,000			\$ -									
4	TH 41 & Chaska Blvd (61) (Old US 212)	1.92	\$0.00	1	\$3,000			\$ -									
5	TH 41 & Crosstown/Victoria	2.723	\$30,000.00	1	\$3,000		3520.0	\$ 24,640.00	1								
6	TH 41 & Engler (10)	3.144	\$30,000.00	1	\$3,000		2300.0	\$ 16,100.00	1								
7	TH 41 & Canyon/ Park & Ride	3.665	\$0.00	1	\$3,000		2700.0	\$ 18,900.00	1								
8	TH 41 & 212 SR	3.789	\$30,000.00	1	\$3,000		700.0	\$ 4,900.00	1								
9	TH 41 & 212 NR Fiber Connection	3.801	\$30,000.00	1	\$3,000		500.0	\$ 3,500.00	1								
10	TH 41 & Hundertmark	4.142	\$0.00	1	\$3,000		1250.0	\$ 8,750.00	1								
11	TH 41 & Pioneer Tr.	4.761	\$0.00	1	\$3,000		3200.0	\$ 22,400.00	1								
12	TH 41 & Hazeltine	5.226	\$30,000.00	1	\$3,000		2350.0	\$ 16,450.00	1								
13	TH 41 & Lyman	6.225		1	\$3,000			\$ -									
14	TH 41 & 82nd	6.704		1	\$3,000												
15	TH 41 & TH 5	42.553		1	\$3,000												

Totals			\$150,000.00	15	\$ 45,000.00	0.00	16520.0	\$ 115,640.00	8	\$ 40,000.00	\$ -	5	\$ 50,000.00	\$ 31,500.00	\$ 432,140.00	\$ 44,214.00	\$ 476,354.00
Fed (80%)			\$ 120,000.00		\$ 36,000.00			\$ 92,512.00		\$ 32,000.00	\$ -		\$ 40,000.00	\$ 25,200.00	\$ 345,712.00	\$ 35,371.20	\$ 381,083.20
SC (20%)			\$ 30,000.00		\$ 9,000.00			\$ 23,128.00		\$ 8,000.00	\$ -		\$ 10,000.00	\$ 6,300.00	\$ 86,428.00	\$ 8,842.80	\$ 95,270.80

\$477,000
\$381,600
\$95,400