Transportation Advisory Board
of the Metropolitan Council of the Twin Cities

ACTION TRANSMITTAL

No. 2012-15

DATE: April 11, 2012

TO: Transportation Advisory Board

FROM: Technical Advisory Committee

SUBJECT: Scope Change Request and TIP Amendment for Eagan SP#145-010-010: TH 149 Reconstruction from TH 55 to I-494

MOTION: That the TAB approves a scope change to change the lane configuration on Eagan SP#195-010-010: TH 149 Reconstruction from TH 55 to I-494 and adopt an amendment to the 2012-2015 TIP reflecting the new scope.

BACKGROUND AND PURPOSE OF ACTION: This project was awarded $2.5 million (federal) in STP-UG funds though the 2009 regional solicitation in the "A" Minor Arterial Reliever category. The original project scope would convert this 4-lane road to a 6-lane divided roadway from TH 55 to the I-494 ramps. Due to the lack of sufficient width on the bridge over I-494, Eagan began working with MnDOT to make the desired capacity increase without having to change the width of the bridge. Most of the capacity need is in the northbound direction because the traffic volumes in that direction are higher than the southbound direction.

The applicant proposes a five-lane configuration instead of a six-lane with three lanes northbound through most of the project plus turn lanes and two lanes southbound. Staff looked into the change of scope to see how it may have affected the project scoring and determined that it would not have affected it much since the capacity analysis involved the northbound traffic at an intersection that is not being changed with this scope change request. This scope change results in a lower overall cost of $479,000 and federal amount. The federal share of the revised scope is reduced from $3,529,000 to $2,146,000. Additional background information is attached.

RELATIONSHIP TO REGIONAL POLICY: Projects that receive funding through the regional solicitation process are subject to the regionally adopted 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 change substantially. The scope change policy and process allows project sponsors to make adjustments to their project as needed while still providing substantially the same benefits described in the original application.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Funding & Programming Committee	Review & Recommend	March 15, 2012
Technical Advisory Committee	Review & Recommend	April 4, 2012
TAB Programming Committee	Review & Recommend	
Transportation Advisory Board	Review, Approve & Adopt	
Metropolitan Council (TIP Amendment)	Review and Concur Approval	

390 Robert Street North St. Paul, Minnesota (651) 602-1728 Fax (651) 602-1739

City of Eagan

March 22, 2012

Karl Keel, Chair
TAC Funding and Programming Committee
Metropolitan Council
390 Robert Street No.
St. Paul, Minnesota 55101

Re: Amendment to the 2012-2015 Transportation Improvement Program (TIP) for the Twin Cities Metropolitan Area
State Project Number: 195-010-010

Dear Mr. Keel:

Please amend the 2012 – 2015 Transportation Improvement Program (TIP) to address a scope change in the above referenced project in Program Year 2013. The project is being submitted with the following information:

PROJECT IDENTIFICATION:

STIP SEQ#	STATE FISCAL YEAR	ATP	DIST	ROUTE SYSTEM	PROJECT NUMBER (S.P. #) (Fed # if available)	AGENCY	DESCRIPTION include location, description of all work, & city (if applicable)	MILES
1811	2013	M	M	MN 149	195-010-010	City of Eagan	From TH 55 to just north of I-494 in Eagan- Reconstruct from 4-lane Roadway to 5-lanen Roadway, trail	0.9

PROG	TYPE OF WORK	PROP FUNDS	TOTAL $	FHWA $	AC $	FTA $	TH $	OTHER $
RC	Grade & Surface	UG	$2,683,000	$2,146,400	$0	$0	$0	$536,600 (Eagan)

PROJECT BACKGROUND:

1. Briefly describe why amendment is needed (e.g., project in previous TIP but not completed; illustrative project and funds now available; discretionary funds received; inadvertently not included in STIP).

   Project 195-010-010 (Seq 1765) is currently in SFY 2013 of the 2012-2015 STIP with a total project cost of $3,162,000 including $2,529,600 in federal funds and $632,400 in local funds. A formal amendment is needed to address a scope change and resulting changes in the total project cost.

   The City of Eagan has been working closely with MnDOT, the agency with jurisdiction over TH 149, to fine tune the project scope. In February 2011, the City of Eagan and MnDOT met to discuss how to move forward with the identified federal funding for the TH 149 corridor. In order to determine the appropriate design section for the study corridor, additional analyses were completed. The *TH 149 Corridor Study – 2030 Traffic Forecast Volumes* (February 2011) re-evaluated existing peak hour intersection volumes and 2030 traffic forecasts from past transportation studies to confirm future needs for the corridor. There was a variation in current and future volumes from multiple studies recently conducted in the area and it was important to revisit all available data.

   The next step in the City's updated effort included an operations analysis of the confirmed traffic forecasts. The *TH 149 Corridor Study – Traffic Operations Analysis* (March 2011) involved a 2030 operations analysis to determine what specific improvements are necessary to accommodate future growth in traffic. Instead of considering a typical widening of a four-lane roadway to six lanes, the updated operations analysis took a closer look at the directional peak hour volumes and critical lane movements to determine where the additional capacity was needed. As a result of this work, it was determined that a five-lane section (three northbound and two southbound through lanes) is the design concept for the project currently scheduled in fiscal year 2013. With their involvement in the additional analyses, the modified scope and proposed design concept is strongly supported by MnDOT staff.

2. How is Fiscal Constraint Maintained as required by 23 CFR 450.216 (check all that apply)?
   - New Money _____
   - Anticipated Advance Construction _____
   - ATP or MPO or Mn/DOT Adjustment of other projects _____
   - Earmark or HPP federal funds outside the ATP target _____
   - Other* X*

*Project 195-010-010 (Seq#1765) in SFY 13 of the 2012-2015 STIP has a total project cost of $3,162,000 with $2,529,600 in federal funds and $632,400 in local funds. The Scope of the project has been revised and the total project cost was reduced to $2,683,000. The $2,146,400 of federal funding being requested with the Scope Change is less than originally requested $2,529,600 in federal funds. These federal funds along with $536,600 in local funds are sufficient to fully fund the project, therefore fiscal constraint is maintained.

CONSISTENCY WITH MPO LONG RANGE PLAN:

This amendment is consistent with the Metropolitan Council's Transportation Policy Plan, adopted on January 14, 2009, with FHWA/FTA conformity determination established on September 16, 2009. The amendment is also consistent with the 2030 Policy Plan update adopted by the Metropolitan Council on November 10, 2010 with conformity determination established on February 23, 2011.

3/22/2012

AIR QUALITY CONFORMITY:

- Subject to conformity determination ..... YES
- Exempt from regional level analysis*.....
- Exempt from project level analysis*.....
- Exempt by virtue of interagency consultation*.....
- N/A (not in a nonattainment or maintenance area).....

* The elements of this project have previously been included in the TIP Air Quality Analysis. This project was modeled and will continue to be listed as A-15 under Regional Significant Projects. No changes have been made either to the horizon year or to the capacity to the regional system from the original project.

We are requesting approval of this TIP amendment at this time. If you have any questions, please contact me at (651) 675-5637.

Sincerely,

Russ Matthys

Russ Matthys, PE
City Engineer
City of Eagan

cc: Jon P. Solberg, MnDOT Metro Program Management
Cindy Krumsieg, MnDOT Metro Program Management

City of Eagan

March 2, 2012

Mr. Karl Keel, PE
TAC Funding & Programming Committee
1700 West 98th Street
Bloomington, Minnesota 55431-2501

SUBJECT: TH 149/TH 55 TO I-494 IMPROVEMENT PROJECT – SCOPE CHANGE REQUEST
City of Eagan, Minnesota

INTRODUCTION

The City was successful in the 2009 federal funding solicitation for "A" Minor Arterial Reliever improvements to the TH 149 corridor. The State Transportation Improvement Program (STIP) has $3,162,000 in federal funding scheduled for improvements on TH 149 from TH 55 to I-494 in fiscal year 2013 (see Attachment A, Figure 1: Project Location Map). Although the original project description has changed since its submittal, the benefits have remained consistent with its original intent. Therefore, the City is requesting a scope amendment, in order to move forward with a revised project scope. Please consider this formal request from the City of Eagan for the change in scope of the TH 149 reconstruction project for fiscal year 2013.

ORIGINAL PROJECT DESCRIPTION

In the 2009 STP funding submittal, the scope of the TH 149 project is identified as the reconstruction of a four-lane roadway to six lanes. In addition, the City planned to rebuild the existing traffic signals and construct a multiuse trail on the west side of the corridor. The overall objective of the proposed project is to provide the additional capacity necessary to accommodate existing and future traffic volumes along the corridor.

The City of Eagan continues to identify transportation improvements necessary to accommodate future growth in the northeast portion of their City (see Attachment B: Related Transportation Studies). The need to upgrade the TH 149 corridor was first identified in the *Grand Oak Business Park Final AUAR* (September 1998), whereas the traffic component identified the need for additional northbound through lane capacity to accommodate increasing peak hour traffic volumes. The *Northwest Eagan Areawide Traffic Study* (May 2005), *Transportation Infrastructure Needs Analysis* (May 2005) and *Lone Oak Business Campus Traffic Study* (August 2006)

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3830 Pilot Knob Road
Eagan, MN 55122-1810
651.675.5000 phone
651.675.5012 fax
651.454.8535 TDD

Maintenance Facility
3501 Coachman Point
Eagan, MN 55122
651.675.5300 phone
651.675.5360 fax
651.454.8535 TDD

www.cityofeagan.com

were additional studies that examined proposed land use impacts on the supporting roadway system and consistently indicated the need for this section of TH 149 to be upgraded to a six-lane facility. The *North-South Corridor Travel Demand Study* (July 2007) and *Regional Roadway System Visioning Study* (August 2010) were regional transportation studies involving the adjacent communities, Dakota County, MnDOT, Metropolitan Council and FHWA to develop a coordinated plan to handle future growth, balance impacts and provide an overall transportation system that supports regional, as well as local transportation needs.

REQUESTED CHANGE OF SCOPE

The City of Eagan has been working closely with MnDOT, the agency with jurisdiction over TH 149, to fine tune the project scope. In February 2011, the City of Eagan and MnDOT met to discuss how to move forward with the identified federal funding for the TH 149 corridor. In order to determine the appropriate design section for the study corridor, additional analyses were completed (see Attachment C: Current Transportation Improvement Studies). The *TH 149 Corridor Study – 2030 Traffic Forecast Volumes* (February 2011) re-evaluated existing peak hour intersection volumes and 2030 traffic forecasts from past transportation studies to confirm future needs for the corridor. There was a variation in current and future volumes from multiple studies recently conducted in the area and it was important to revisit all available data.

The next step in the City's updated effort included an operations analysis of the confirmed traffic forecasts. The *TH 149 Corridor Study – Traffic Operations Analysis* (March 2011) involved a 2030 operations analysis to determine what specific improvements are necessary to accommodate future growth in traffic. Instead of considering a typical widening of a four-lane roadway to six lanes, the updated operations analysis took a closer look at the directional peak hour volumes and critical lane movements to determine where the additional capacity was needed. As a result of this work, it was determined that a five-lane section (three northbound and two southbound through lanes) is the design concept for the project currently scheduled in fiscal year 2013. With their involvement in the additional analyses, the modified scope and proposed design concept is strongly supported by MnDOT staff.

The change in scope for the TH 149 reconstruction project, from that described in the original funding application, not only responds to the transportation needs for the study area but also provides an opportunity to reduce its overall impact and cost.

MODIFIED PROJECT DESCRIPTION AND COST ESTIMATE

As previously mentioned, the modified project includes the reconstruction of TH 149 from a four-lane to a five-lane facility with three northbound and two southbound through lanes from TH 55 to the I-494 north ramps (see Attachment A, Figure 2: Proposed Improvements). Other project elements that are consistent with the original 2009 grant application include rebuilding four traffic signals and construction of a multiuse trail on the west side of the roadway.

As previously mentioned, the STIP has $3,162,000 in federal funding scheduled for TH 149 improvements in fiscal year 2013. In order to be consistent with the reduced scope and proposed design concept, a more refined construction cost estimate was developed.

An area of focus in the refined cost estimate included impacts to the existing traffic signals. Due to the roadway widening, modifications to medians/islands and the addition of a trail, there will be significant impacts to the four in-place traffic signals along TH 149. To better understand if the proposed project would necessitate traffic signal system revisions versus replacements, a meeting was held with MnDOT staff in February 2012 to review the status of the in-place equipment and other planned system upgrades. MnDOT staff informed us that arterial management system improvements in this area are programmed for July 2013, including camera installation, conduits, fiber, controllers, and Ethernet equipment.

MnDOT has two of the signals programmed for replacement along TH 149 at the I-494 north and south ramp terminals for construction in Spring 2015, coupled with programmed lane additions to the north ramp. Our goal is to incorporate these two signal replacements and the north ramp improvements under the TH 149 reconstruction project as planned. Although MnDOT does not have plans to rebuild the two signal systems at Northwest Parkway and Lone Oak Parkway, it was agreed that due to the age of these systems, and the inherent impacts associated with the improvements, the most cost-effective approach would be to fully replace these two signal systems under the TH 149 reconstruction project. Therefore, the cost of four traffic signal replacements is accounted for in the refined cost estimate. Note that the construction cost estimate also includes a line item for temporary signal systems at each location. These systems may be needed to safely and efficiently control traffic during the construction of the project. However, this need will be determined during the design process.

As shown in Table 1, the revised cost estimate for the project is estimated at $2,683,000. This updated cost estimate was developed by using simple area and volume calculations, lump sums, and percent of construction cost. Based on updated information and additional details, this cost estimate better represents the proposed improvements associated with the TH 149 reconstruction project. The City of Eagan expects to maintain the 80/20 cost split.

Table 1
Revised Cost Estimate

Project Element	Cost
Mobilization	$75,000
Removals	$75,000
Roadway (grading & borrow)	$24,000
Roadway (aggregate & paving)	$360,000
Storm sewer	$125,000
Ponds	$75,000
Concrete items (curb & gutter, sidewalk, medians)	$195,000
Pedestrian curb ramps (ADA)	$6,000
Path/trail construction	$55,000
Traffic control	$75,000
Striping	$5,000
Signing	$35,000
Lighting	$125,000
Turf (erosion & landscaping)	$9,000
Temporary traffic signals (4)	$400,000
Permanent traffic signals (4)	$800,000
Contingencies (10%)	$244,000
Total	**$2,683,000**

IMPROVED COST EFFECTIVENESS

Although the project scope has changed, the benefits achieved through the construction of this project remain similar to its original scope. A review of the 2009 federal funding application for TH 149 was completed. It has been determined that the revised TH 149 improvement project from TH 55 to the I-494 north ramps continues to provide similar and improved benefits when compared to the original project scope:

- The intent of the project continues to remain the same. The proposed project implements a solution to a transportation problem identified in the City of Eagan's *Comprehensive Plan, Capital Improvement Plan, Regional Roadway System Visioning Study*, and several other studies.
- The definition and characteristics of TH 149 as a Reliever route has not changed.
- For the Reliever, the crash reduction on TH 149 will need to be recalculated. However, the total crash reduction is expected to be similar since the majority of the crashes on the TH 149 corridor involve vehicles traveling in the northbound direction. In addition, a signal rebuild improvement (with the add lane improvement) can be used in place of the T-intersection improvement, which has a higher percent change in crash reduction.

- The results for Air Quality (emissions reduction) and Congestion Reduction (increase in hourly person throughput) would not be affected, since the calculation is completed for the peak direction of travel. The peak direction of travel continues to be northbound TH 149, with the improvement of an additional third northbound through lane.
- The revised improvement project is more cost effective, providing a better value for the cost invested in the project. The cost effectiveness calculations would result in a lower cost per crash, cost per increase in hourly person throughput and cost per kilogram reduced by the proposed project, since the overall project cost is lower.
- The Development Framework section of the submittal will remain the same. The planning area objectives, natural resources, progress towards affordable housing goals, land use access management planning and integration of modes will not be affected by the revised improvement project for TH 149.

The modified scope and revised design for the TH 149 reconstruction project responds to the transportation needs identified, while minimizing associated impacts and costs. The result will be a project that is more cost effective by providing better value at a lower construction cost.

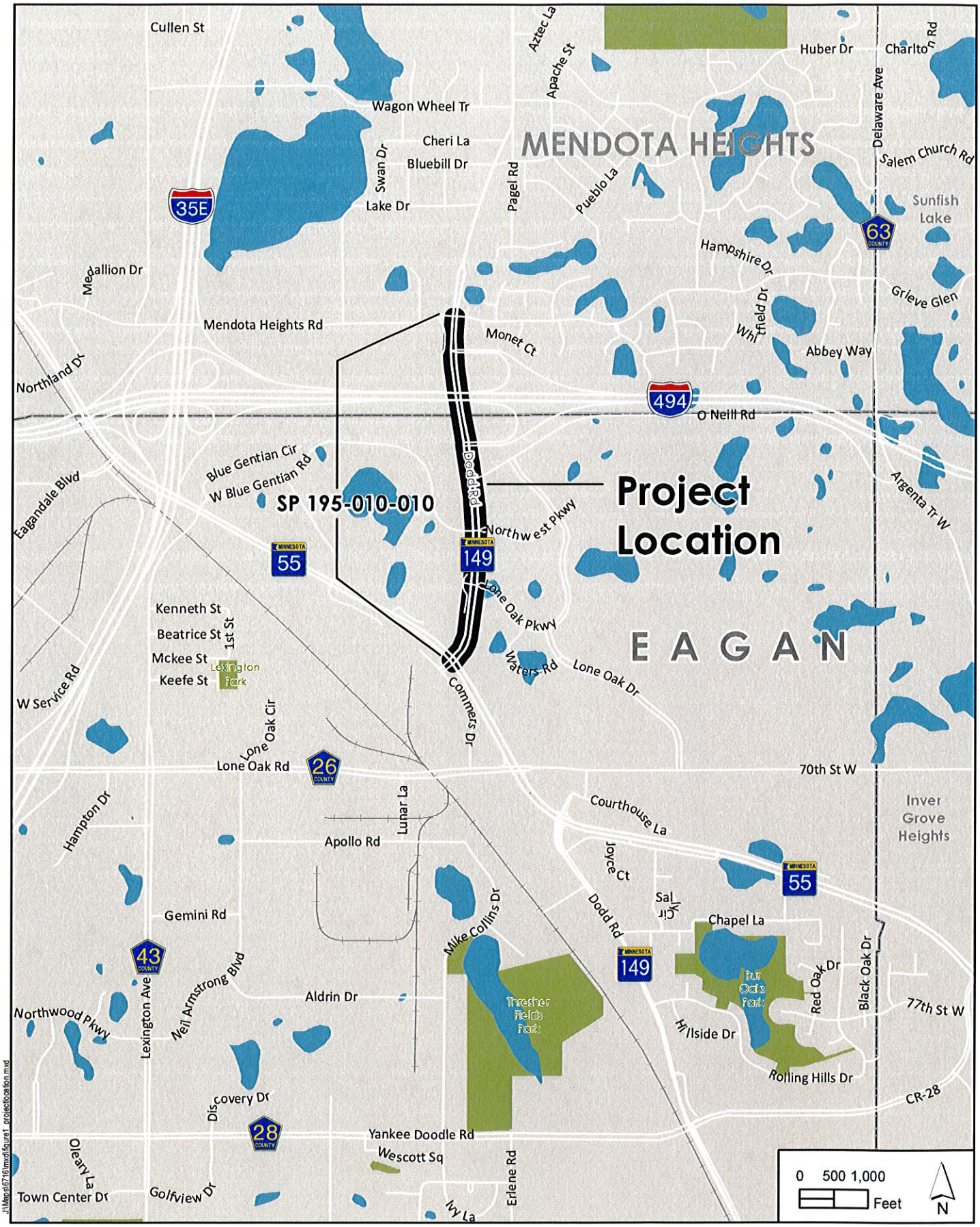
We look forward to discussing the proposed project with you in more detail. If you have any questions or require additional information, please contact me.

Sincerely,

Russ Matthys, P.E.
City Engineer
City of Eagan

Attachments: Attachment A Figures
Attachment B Related Transportation Studies
Attachment C Current Transportation Improvement Studies

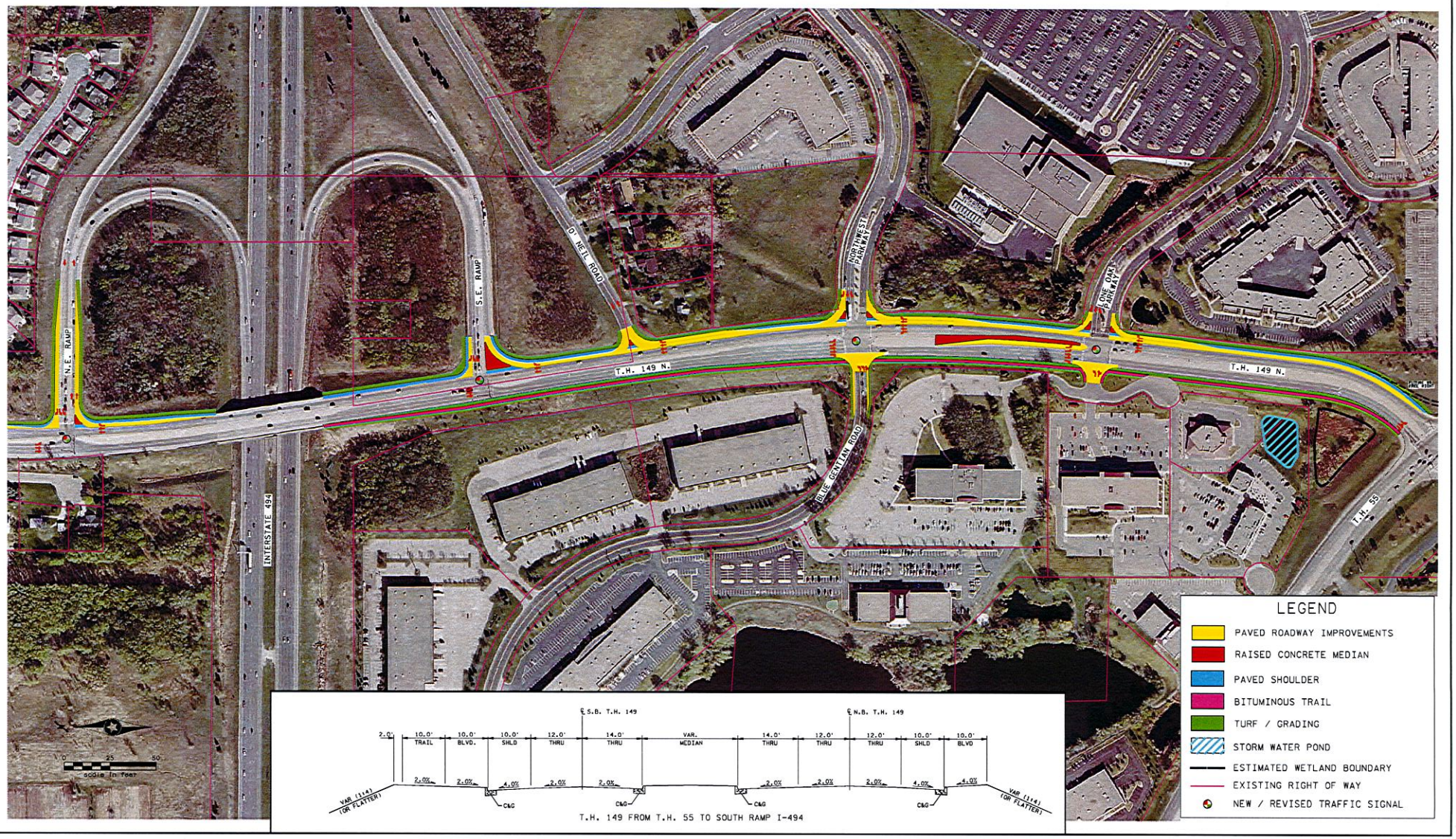
ATTACHMENT A
Figures



Project Location

TH 149 Improvement Project
SP 195-010-010
City of Eagan, Minnesota

Figure 1



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Proposed Improvements - REVISED - FEBRUARY 2012

TH 149 Improvement Project
S.P. 195-010-010
City of Eagan, Minnesota

Figure 2

SRF CONSULTING GROUP, INC.
ENGINEERS | PLANNERS | DESIGNERS

MINNEAPOLIS
FARGO
MADISON

SRF No. 0117380

MEMORANDUM

TO: Russ Matthys, PE, City Engineer
Tim Plath, PE, PTOE, Transportation Engineer
City of Eagan

FROM: Marie Cote, PE, Principal

DATE: February 23, 2011

SUBJECT: TH 149 CORRIDOR STUDY – 2030 TRAFFIC FORECAST VOLUMES

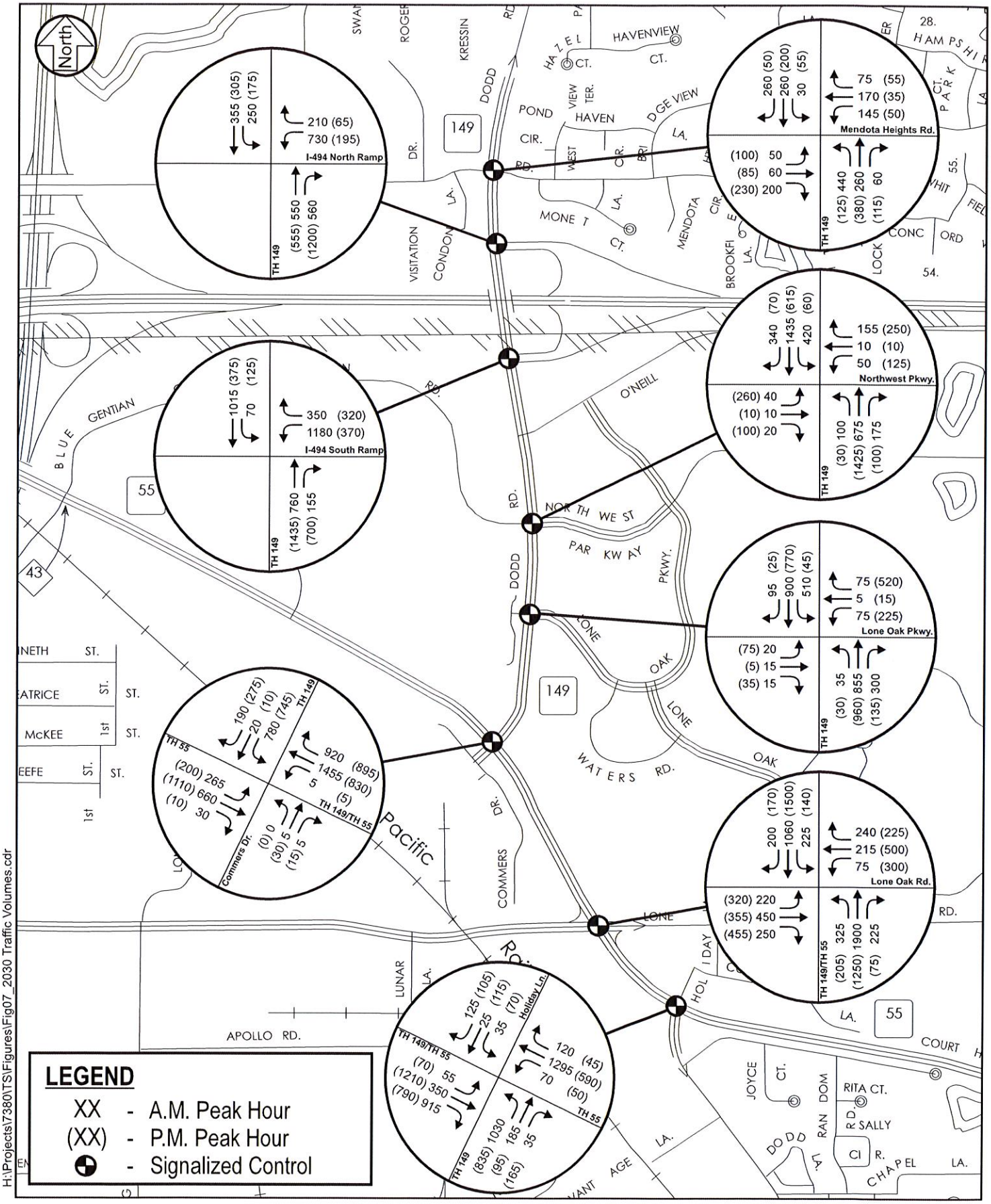
INTRODUCTION

SRF has been retained by the City of Eagan to conduct an analysis of the TH 149 corridor from Mendota Heights Road to TH 55/TH 149 South. The City was successful in the 2009 federal funding solicitation for "A" Minor Arterial Reliever improvements to TH 149. Mn/DOT recently conducted the Signal Optimization Project dated October 29, 2010 to ensure optimal performance along the TH 149 corridor. The main objective of our analysis is to better understand the 2030 traffic volumes for the intersections along TH 149 and confirm future needs for the corridor. The results of this analysis will provide the necessary improvement options for the City and Mn/DOT to discuss and decide how to move forward with identified funding for the TH 149 corridor. This memorandum provides the comparison of current a.m. and p.m. peak hour turning movement counts and documentation of 2030 traffic forecast volumes.

EXISTING INTERSECTION COUNTS

The TH 149 Corridor Study focuses on the following signalized intersections:

- TH 149 and Mendota Heights Road
- TH 149 and I-494 North Ramps
- TH 149 and I-494 South Ramps
- TH 149 and Blue Gentian Road/Northwest Parkway
- TH 149 and Lone Oak Parkway
- TH 55 and TH 149 North
- TH 55 and Lone Oak Road
- TH 55 and TH 149 South



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SRF Consulting Group, Inc.

Year 2030 Peak Hour Forecast Volumes

TH 149 Corridor Analysis
City of Eagan

0117380
February 2011

Figure 7

SRF CONSULTING GROUP, INC.
ENGINEERS | PLANNERS | DESIGNERS

MINNEAPOLIS
FARGO
MADISON

SRF No. 0117380

MEMORANDUM

TO: Russ Matthys, PE, City Engineer
Tim Plath, PE, PTOE, Transportation Engineer
City of Eagan

FROM: Marie Cote, PE, Principal
Joshua Maus, PE, PTOE, Associate

DATE: March 21, 2011

SUBJECT: TH 149 CORRIDOR STUDY – TRAFFIC OPERATIONS ANALYSIS

INTRODUCTION

SRF has been retained by the City of Eagan to conduct an analysis of the TH 149 corridor from Mendota Heights Road to TH 55/TH 149 South. The main objective of our analysis is to better understand the 2030 traffic volumes along TH 149 and confirm future needs for the corridor. The results of this analysis will provide the necessary improvement options for the City and Mn/DOT to discuss and decide how to move forward with identified federal funding for the TH 149 corridor.

The first phase of the study included a review of 2030 daily and peak hour volumes. Updated 2030 peak hour volumes for the intersections along TH 149 and TH 55 were developed and documented in the *TH 149 Corridor Study – 2030 Traffic Forecast Volumes* memorandum dated February 23, 2011. The second phase includes the operations analysis of TH 149 and TH 55 for 2030 conditions, which is documented in this memorandum.

YEAR 2030 NO BUILD CONDITIONS

Traffic operations were analyzed at the following key intersections:

- TH 149 and Mendota Heights Road
- TH 149 and I-494 North Ramps
- TH 149 and I-494 South Ramps
- TH 149 and Blue Gentian Road/Northwest Parkway
- TH 149 and Lone Oak Parkway
- TH 55 and TH 149 North
- TH 55 and Lone Oak Road
- TH 55 and TH 149 South

YEAR 2030 RECOMMENDED IMPROVEMENTS

Results of the operations analysis for the three build alternatives indicate that the Alternative C improvements are necessary to accommodate future 2030 traffic volumes and provide acceptable a.m. and p.m. peak hour operations. Recommended improvements include:

- Additional westbound (dual) left-turn lane at TH 149/I-494 North Ramps
- Additional southbound (dual) left-turn lane at TH 149/Lone Oak Parkway
- Additional eastbound (dual) left-turn lane at TH 55/TH 149 North
- Additional southbound, eastbound and westbound (dual) left-turn lanes at TH 55/Lone Oak Road
- Six-lane TH 55 facility between TH 149 North and TH 149 South (through the intersections)
- Three northbound through lanes on TH 149 from Northwest Parkway to the I-494 North Ramps
- Northbound free right-turn lane on TH 149 at I-494 North Ramps, two-lane on ramp to I-494 with lane drop prior to curve

Additional improvements to be considered include:

- Add the third northbound through lane on TH 149 at TH 55
- Additional westbound (dual) right-turn lanes at TH 149/Northwest Parkway and TH 149/Lone Oak Parkway

FEDERAL FUNDING IMPLICATIONS

The City was successful in the 2009 federal funding solicitation for "A" Minor Arterial Reliever improvements to the TH 149 corridor. Improvements assumed in the 2009 application include a six-lane facility (three through lanes in each direction) for TH 149 from TH 55 to the I-494 North Ramps. Results of this 2030 operations analysis indicate that the Alternative C improvements are necessary to accommodate future traffic volumes. For TH 149, the improvements assumed under Alternative C are not consistent with the 2009 submittal. Therefore, consideration of potential impacts to the awarded funding was conducted to make sure the City can move forward with a slightly different improvement project without jeopardizing the federal funds already identified for the project.

A review of the 2009 federal funding application for TH 149 was completed. It has been determined that the updated improvement project of three TH 149 northbound through lanes from Northwest Parkway (or TH 55) with a northbound free right-turn lane at the I-494 North Ramps should not risk the identified federal funds based on the following:

- The intent of the project continues to remain the same. The proposed project implements a solution to a transportation problem identified in the City of Eagan's *Comprehensive Plan, Capital Improvement Plan, Regional Roadway System Visioning Study*, and several other studies.
- The definition and characteristics of TH 149 as a Reliever route has not changed.

Federal STP Funding Application (Form 1)

INSTRUCTIONS: Complete and return completed application to Kevin Roggenbuck, Transportation Coordinator, Transportation Advisory Board, 390 North Robert St., St. Paul, Minnesota 55101. (651) 602-1728. Form 1 needs to be filled out electronically. Please go to Metropolitan Council's website for instructions. **Applications must be received by 5:00 PM or postmarked on June 15, 2009. *Be sure to complete and attach the Project Information form.** (Form 2)	Office Use Only

I. GENERAL INFORMATION

1. APPLICANT: City of Eagan

2. JURISDICTIONAL AGENCY (IF DIFFERENT): Minnesota Department of Transportation

3. MAILING ADDRESS: 3830 Pilot Knob Road

CITY: Eagan	STATE: MN	ZIP CODE:55122	4. COUNTY: Dakota
5. CONTACT PERSON: Russ Matthys, P.E.	TITLE: City Engineer		PHONE NO. (651)675-5637

CONTACT E-MAIL ADDRESS: rmatthys@cityofeagan.com

II. PROJECT INFORMATION

6. PROJECT NAME: TH 149 Reconstruction Project

7. BRIEF PROJECT DESCRIPTION (Include location, road name, type of improvement, etc... A more complete description must be submitted separately as described in Specific Requirement #3 on p. 5):

The proposed project includes expanding TH 149 from a four-lane divided roadway to a six-lane facility. Improvements extend from TH 55 to the I-494 north ramp intersection. The proposed project also constructs a multi-use trail on the west side of the corridor between TH 55 and the north I-494 ramp intersection.

8. STP PROJECT CATEGORY - Check only one project grouping in which you wish your project to be scored.

"A" Minor Arterials:

☒Reliever	☐Expander	☐Non-Fwy. Principal Arterial
☐Connector	☐Augmenter	☐Bikeway/Walkway

III. PROJECT FUNDING

9. Are you applying or have you applied for funds from another source(s) to implement this project? Yes ☐ No ☒

If yes, please identify the source(s):

10. FEDERAL AMOUNT: $2,480,000	13. MATCH % OF PROJECT TOTAL: 20%
11. MATCH AMOUNT: $620,000	14. SOURCE OF MATCH FUNDS: Local
12. PROJECT TOTAL: $3,100,000	15. REQUESTED PROGRAM YEAR (CIRCLE): ☒2013 ☐2014
16. SIGNATURE	17. TITLE: City Engineer

"A" MINOR ARTERIAL - RELIEVER - PRIORITIZING CRITERIA

Applicants must respond to each of the following prioritizing criteria. Label your responses clearly. If a criterion is not applicable to your project, explain why.

A. Relative importance of the route as an "A" Minor Arterial Reliever. 100 points

Although all Reliever routes parallel an urban principal arterial, the relative importance of each Reliever is not the same. Some Relievers play a more significant role than others do in providing an alternative route for medium distance trips and reducing demand on congested metro area principal arterials. The following criteria are intended to measure the relative importance of each Reliever route submitted for funding in this solicitation.

Definition and characteristics of the Reliever route.

0-100 points The applicant must respond to all three items below and provide a map to help answer items a) and b). The Reliever 'route' is defined as the uninterrupted length of the arterial that parallels a principal arterial. The route may be an existing or planned road on the TAB adopted system. The route may be longer than the proposed project and include more than one street name, but it must be continuous. The endpoints of the route must be a principal or other "A" minor arterial, and the route cannot be more than eight miles in length. Two projects on the same route will not be selected unless they are at least 3.5 miles apart. Points under this criterion are assigned based on the length of the Reliever route, the current and forecasted traffic volume on the Reliever route and the current transit ridership on the Reliever route.

For Items a, b and c, please reference Attachment A, Figure 4.

a) Provide the length of the Reliever route in miles.

RESPONSE: The length of the reliever route (TH 149) in approximately 3.5 miles from TH 55 (in the City of Eagan) to TH 110 (in the City of Mendota Heights).

b) Provide the current (2007) and forecasted (2030) average daily traffic volume at two or more locations on the Reliever route. MN/DOT 50-series maps should be used for current counts. Use approved city or county comprehensive plans, Met Council, accepted State Aid traffic factors by county, or a transportation study with documented acceptable forecasting methodology for forecasted volume.

RESPONSE: According to Mn/DOT's MSAS Traffic Volume maps, the current (2006) Average Annual Daily Traffic (AADT) on TH 149 between TH 55 and I-494 is 23,500 vehicles per day. North of I-494, traffic volumes are 8,100 vehicles per day.

As part of the City's draft 2009 update to the *Comprehensive Plan*, traffic forecasts were developed for 2030 (see Attachment B). The 2030 forecast volume for TH 149 from TH 55 to Northwest Parkway is 32,000 vehicles per day. The 2030 forecast volume for TH 149 from Northwest Parkway to I-494 is 42,000 vehicles per day.

c) Is public transit currently provided on this Reliever route and its corresponding section of Principal Arterial? If yes, the Metropolitan Council will provide the project scorers with current average annual ridership based on the project location map and description.

RESPONSE: Transit service utilizes TH 149 for access to service points within the Grand Oak Business Park and the Water's Corporate Complex on both sides of TH 149, but does not offer stops along the project corridor. Similarly, transit providers utilize the corresponding sections of Principal Arterial (TH 55 from TH 149 to I-494 and I-35E from TH 55 to I-494) for access to service point while not offering stops along the Principal Arterial corridor in these segments.

B. Deficiencies and Solutions on Reliever and on Principal Arterial Being Relieved 350 points

The regional solicitation process is one means of implementing regional plans. The region's Transportation Policy Plan state that the regional highway and street system will be preserved, managed, improved and expanded to support existing and planned land uses and safety and mobility needs consistent with the Regional Development Framework, the Transportation Policy Plan and approved local and county comprehensive plans. The following criteria reflect these objectives.

1. **Crash Reduction.**

0-50 points On the Principal Arterial being relieved: Provide data showing the frequency of traffic crashes expressed as crashes per million vehicle miles on the corresponding section of principal arterial. The principal arterial being relieved should be approximately the same length as the project limits on the reliever. Only one principal arterial may be relieved. The applicant must request from Mn/DOT Metro Traffic Engineering*, the crash rate for the principal arterial being relieved. The rate received from Mn/DOT will include mainline crashes only. Crash rates will be based on TIS data for 2005-2007.

RESPONSE: Using Mn/DOT's TIS system data, the corresponding section of TH-55 between TH 149 and I-494 had a total of 38 crashes from January 1, 2005 through December 31, 2007. The crash rate for the principal arterial was 1.57 crashes per million vehicle miles per year (see Attachment E, Principal Arterial Crash Analysis).

0-50 points On the Reliever: Calculate the total number of crashes reduced due to improvements on the 'A' Minor Arterial Reliever made by the proposed project. Points will be awarded based on the total three-year number of crashes projected to be reduced by the proposed project. The applicant must base the estimate of crash reduction on the methodology found in Appendix E. The applicant must obtain data on crashes for the existing section scheduled for improvement from Mn/DOT's TIS system, and must use data from 2005 through 2007.

RESPONSE: As previously indicated, the proposed improvements to TH 149 are intended to increase safety on the corridor. According to Mn/DOT's TIS system data from January 1, 2005 to December 31, 2007, there are a total of 57 crashes

* Applicants should request crash data from Mn/DOT as early as possible. An agency that wishes to dispute the results of their crash data requests can contact Jolene Servatius at 651-234-7841 (or jolene.servatius@dot.state.mn.us) to reconcile those differences.

on TH 149 within the project area (see Attachment E, crash diagrams and TIS data listing). This includes 14 personal injury crashes and 43 property damage only crashes. According to the Mn/DOT factors shown in the calculations below, the proposed project would eliminate **33.3** crashes. This is a 58 percent reduction in the number of crashes on the corridor. Crash calculations are shown below.

Improvements from Mn/DOT's "% Change in Crashes" table:

Add Lanes
-0.50 reduction in fatal and injury crashes
-0.50 reduction in property damage crashes

T-Intersection Turn Lane
-0.20 reduction in fatal and injury crashes
-0.15 reduction in property damage crashes

Fatal and Personal Injury Calculations
CR = 1- (1-0.5) x (1-0.20)
CR = 1 – (0.5 x 0.80)
CR = 0.60

0.60 x 14 (Number of fatal and injury crashes) = 8.4 reduction

Property Damage Calculations
CR = 1-(1-0.5) x (1-0.15)
CR = 1-(0.5 x 0.85)
CR = 0.58

0.58 x 43 (Number of fatal and injury crashes) = 24.9 reduction

Total Crash Reduction
8.4 + 24.9 = 33.3 crashes reduced

2. **Air Quality.** The Transportation Policy Plan strongly supports environmental considerations when making transportation funding decisions. The Council supports funding priorities for transportation projects that ensure prevention of air quality violations through the reduction of mobile source emissions.

The applicant must show that the project will reduce emissions and help the region to maintain its attainment of federal carbon monoxide standards. All assumptions and calculations must be clearly documented and explained in order to receive points. The applicant must include documentation of how the VMT reduction was determined and specify the speed used for the assumptions. Speed assumptions shall be based on the methodology found in Appendix F. Points under this criterion will be awarded based on the reduction of carbon monoxide (CO), nitrogen oxide (NOx), and/or volatile organic compounds (VOC) emissions the proposed project is expected to provide.

0-100 points The applicant must demonstrate through a quantitative analysis that CO, NOx, and/or VOC emissions (in KILOGRAMS/DAY) will be reduced compared to the no-build alternative. The applicant must estimate CO, NOx, and/or VOC emissions reductions using the MOBILE6 emissions factors and vehicle emissions reduction worksheet in Appendix G.

RESPONSE: In order to determine the reduction of emissions, an analysis to determine the increase in peak hour speed on TH 149 (Northbound direction during the p.m. peak hour) due to the proposed project was conducted.

Details of the analysis are shown below:

Estimated Segment Length = 0.90 mile
Posted speed limit = 45 mph

Existing Conditions
4 signalized intersections (2 v/c <0.8 and 2 v/c >0.90)
Free-flow travel time (minutes) = (0.9 mile/45 mph) x 60 = 1.2 minutes
Intersection delay = (2 x 75) + (2 x 30) = 210 seconds = 3.5 minutes
Mid-block delay for right turn movement to eastbound I-494 ramp= 10 seconds = 0.17 minutes

Arterial Speed = (0.9 mile/(3.5 + 1.2 + 0.17 minutes)) x 60 = **11 mph**

Proposed Conditions
4 signalized intersections (3 v/c <0.8 and 1 v/c 0.8 to 0.90)
Free-flow travel time (minutes) = (0.9 miles/45 mph) x 60 = 1.2 minutes
Intersection delay = 50 + (3 x 30) = 140 seconds = 2.33 minutes
Mid-block delay = 0

Arterial Speed = (0.9 mile/(2.33 + 1.2 minutes)) x 60 = **15 mph**

Using the MOBILE6 emissions factors and vehicle emissions reduction worksheet (see Attachment E, Vehicle Emissions Reduction Worksheet), a quantitative analysis was conducted for emissions for both baseline (without project) and build (with project) conditions. The average speed along TH 149 is expected to increase by 3 mph, due to the proposed improvements. The emissions reduction due to the proposed improvements is **135 kilograms/day**.

3. **Congestion Reduction.**

0-75 points On the Principal Arterial being relieved: The applicant needs to show the hours per day the current volume exceeds the design capacity in either direction. The applicant should obtain needed data directly from Mn/DOT or a local data source if available, and provide documentation to illustrate accuracy. To calculate existing conditions, the applicant must obtain or collect the average hourly, directional traffic volumes on a weekday, the current lane configurations, and the current signal timing schemes, if applicable. Design capacity calculations must be based on the definition found in Appendix A.

RESPONSE: As identified by reports from Mn/DOT, current traffic volumes are within the design capacity guidelines of I-35E (six-lane freeway) between TH 55 and I-494.

0-75 points On the Reliever: The applicant must show that the proposed project will reduce congestion at the most congested location on the Reliever. The applicant must include the current volume to capacity (v/c) ratios in the AM and PM peak hours and the improvement in the ratios resulting from the project. Projects that have low existing v/c ratios will receive less credit for the improvement resulting from the project than projects that address a problematic existing v/c ratio. The applicant must use the methodology, worksheet and look-up tables found in

Appendix H. The applicant must conduct a corridor analysis for new alignments, comparing parallel routes that will be affected by the project.

RESPONSE: The intersection of TH 149 and the I-494 South Ramps is currently the most congested location in both the a.m. and p.m. peak hours along the project segment. Details of the volume to capacity ratio (v/c) analysis are shown below:

Existing conditions
Southbound a.m. peak hour volume = 689
Vehicle capacity = 1500 vph (one left-turn lane, two through lanes)
A.M. volume/capacity ratio = 689/1500 = 0.46

Northbound p.m. peak hour volume = 1480
Vehicle capacity = 1400 vph (two through lanes, one right-turn lane)
P.M. volume/capacity ratio = 1480/1400 = 1.06

Proposed Conditions
Southbound a.m. peak hour volume = 689
Vehicle capacity = 2100 vph (one left-turn lane, three through lanes)
A.M. volume/capacity ratio = 689/2100 = 0.33

Northbound p.m. peak hour volume = 1480
Vehicle capacity = 2000 vph (three through lanes, one right-turn lane)
P.M. volume/capacity ratio = 1480/2000 = 0.74

A.M. Improvement in Volume/Capacity Ratio = 046 – 0.33 = 0.13
P.M. Improvement in Volume/Capacity Ratio = 1.06 – 74 = 0.32
Total Improvement in Volume/Capacity Ratio = 0.45

C. Cost Effectiveness. **275 points**

The Regional Development Framework and Transportation Policy Plan document the need for adequate transportation funding to implement regional transportation plans. The region must allocate transportation funds in such a way that the selected projects provide the most benefit for the amount of funding requested. Cost effectiveness is an essential component of the regional solicitation process. Cost effectiveness calculations must be based on the total cost of the project, not just the portion of the project eligible for federal funding, in order to allow consistent comparisons of all qualifying projects.

1. Crash Reduction.

0-125 points The applicant must calculate the cost per crash reduced by the proposed project. The applicant must divide the total cost of the project by the answer from the second part of criterion B.1., crash reduction on the Reliever.

The applicant must obtain data on crashes for the existing section scheduled for improvement from MNDOT's TIS system, and must only use data from 2005 through 2007. The applicant must base the estimate of crash reduction on the methodology found in Appendix E. Points will be awarded based on the relative cost per crash reduced.

RESPONSE: The proposed improvements will be expected to eliminate **33 crashes per year**. The total project cost is $3,100,000. The cost per crash reduced by the proposed project is **$93,939**.

2. Congestion reduction.

0-75 points The applicant must calculate the cost per increase in hourly person throughput provided by the proposed improvement. The applicant must use the worksheet in Appendix I. Points will be awarded based on the lowest cost per increase in person throughput, but if there is little congestion under existing conditions fewer points will be awarded for increasing person throughput.

RESPONSE: The hourly throughput in the p.m. peak hour, in the peak direction of travel (northbound), at the most congested location (TH 149/I-494 north ramps) was calculated for current and proposed conditions. Details of the analysis are shown below:

Existing Conditions
Vehicle capacity = 1400 vph (two through lanes, one right-turn lane)
A.M. peak hour vehicle occupancy = 1.09
A.M. peak hour bus ridership = 0, assume no increase in service
Hourly person throughput = 1400 x 1.09 = 1526 pph

Proposed Conditions
Vehicle capacity = 2000 vph (three through lanes, one right-turn lane)
A.M. peak hour vehicle occupancy = 1.09
A.M. peak hour bus ridership = 0, assume no increase in service
Hourly person throughput = 2000 x 1.09 = 2180 pph

Total Increase in Hourly Person Throughput = 2180 – 1526 = 654
Cost per Increase in Hourly Person Throughput = $3,100,000/654 = $4,740

3. Air Quality

0-75 points The applicant must calculate the cost per kilogram that will be reduced by the proposed project compared to the no-build alternative. The applicant must use the estimated CO, NOx, and/or VOC emissions reductions calculated in questions B.3. and divide it into the total project cost.

RESPONSE: The proposed improvements will be expected to reduce total emissions by **135 kilograms per day**. The total project cost is $3,100,000. The cost per kilogram reduced by the proposed project is **$22,937**.

D. Development Framework Implementation. 425 points

The ***2030 Development Framework*** is the initial "chapter" and unifying theme of the Council's metropolitan development guide. Together with the Council's regional policy plans, the ***Framework*** is intended to help ensure the orderly, economical development of the seven-county area and the efficient use of four regional systems: transportation, aviation, water resources (including wastewater collection and treatment) and regional parks and open space. The ***Framework*** was adopted in January 2004, and amended in December 2006.

The Council's strategies are organized around four policies:

"A" Minor Arterial Reliever - Prioritizing Criteria Scores 2009

project no.	applicant	project name	federal $	match $	prioritizing criteria														
					A.1. 0-100	B.1. 0-100	B.2. 0-100	B.3. 0-150	C.1. 0-125	C.2. 0-75	C.3. 0-75	D.1. 0-75	D.2. 0-45	D-3 0-30	D-4 0-50	D-5 0-50	D-6 0-50	D-7 0-125	E.1. 0-100	Total Points
AR-09-10	Ramsey County	CSAH 49/TH 36 Interchange	$7,000,000	$13,500,000	100	84	100	105	119	24	56	47	10	25	50	20	23	70	100	**933**
AR-09-01	Anoka County	CSAH 51 (University Ave) Reconstruction	$6,120,000	$1,530,000	75	30	85	118	102	44	75	45	45	20	50	50	38	103	43	**923**
AR-09-05	Hennepin County	CSAH 61 (Shady Oak Rd) Reconstruction	$7,000,000	$3,000,000	69	28	53	58	108	33	40	56	8	25	45	45	45	79	86	**778**
AR-09-06	Eagan	TH 149 Reconstruction	$2,480,000	$620,000	90	30	64	22	125	75	65	40	7	25	50	40	0	58	86	**777**
AR-09-07	West St Paul	Robert Street Improvements	$7,000,000	$3,383,000	99	50	70	37	123	25	50	54	7	30	50	10	50	57	50	**762**
AR-09-03	Hennepin County	CSAH 5 (Franklin Ave) at E River Pkwy Intersection Reconstruction	$4,000,000	$1,000,000	80	34	36	58	34	44	29	70	7	25	45	45	27	69	50	**653**
AR-09-08	Richfield	CSAH 53 Reconstruction	$4,498,000	$1,124,000	74	24	43	0	102	0	46	60	7	25	25	10	40	104	43	**603**
AR-09-04	Hennepin County	CSAH 3 (Excelsior Blvd) Reconstruction	$7,000,000	$3,000,000	85	55	21	15	67	0	9	62	7	20	45	45	28	86	40	**585**
AR-09-02	Maple Grove	TH 169 & CSAH 130/152 Interchange Reconstruction	$7,000,000	$6,410,000	92	12	58	25	0	12	38	75	28	20	45	35	13	76	39	**568**
AR-09-09	Richfield	CSAH 35 (Portland Av) Reconstruction	$1,325,408	$331,352	80	30	2	23	0	0	2	63	7	25	10	10	0	91	50	**393**
		TOTAL FEDERAL FUNDS	**$53,423,408**	**$33,898,352**															

A.1.	Relative Importance of Route
B.1.	Crash Reduction
B.2.	Air Quality
B.3.	Congestion Reduction
C.1.	Crash Reduction Cost Effectiveness
C.2.	Congestion Reduction Cost Effectiveness
C.3.	Air Quality Cost Effectiveness
D.1.	Development Framework Planning Area Objectives
D.2.	Natural Resources
D-3	Progress Toward Affordable Housing Goals
D-4	Land Use And Access Mgmt Planning
D-5	Land Use And Access Mgmt Regulatory Framework
D-6	Access Management Improvements
D-7	Integration of Modes
E.1.	Maturity of Project Concept