

T Transportation Committee

Meeting date: February 27, 2012

Council meeting date: March 14, 2012

ADVISORY INFORMATION	
	Date: February 15, 2012
	Subject: 2012-2015 TIP Amendment Request to Include SP#092-070-001: Procurement and Installation of 76 Electric Vehicle Charging Stations (TAB Action 2011-60)
District(s), Member(s):	All
Policy/Legal Reference:	TAB Action
Staff Prepared/Presented:	Arlene McCarthy, Director (651-602-1754) Amy Vennewitz, Dep. Dir. Finance & Planning (651-602-1058) Kevin Roggenbuck, TAB Coordinator (651-602-1728) James Andrew, Senior Planner (651-602-1721)
Division/Department:	Metropolitan Transportation Services

Proposed Action

That the Metropolitan Council concur with the Transportation Advisory Board (TAB) action to amend the 2012-2015 Transportation Improvement Program (TIP) to include SP#092-070-001: procurement and installation of 76 electric vehicle charging stations in the Twin Cities metropolitan area.

Background

In late 2010, the Minnesota Pollution Control Agency approached the TAB with a request for \$500,000 in federal CMAQ funds for the installation of electric vehicle recharging stations. The project is eligible for CMAQ funds, but does not fit well within the regional solicitation project categories and would most likely not score well based on the regional solicitation criteria. After discussing the project and potential funding options on a number of occasions, the TAB voted in favor of awarding \$500,000 from the regional federal fund balance in 2012 for the project. The project must be amended into the TIP and will be funded using regional CMAQ funds with a 20% local match provided by the Minnesota Pollution Control Agency.

Project Description	Federal (CMAQ) Funds	Local Match (MPCA)
MPCA SP#092-070-001: 76 electric vehicle charging stations	\$500,000	\$125,000

Rationale

The Transportation Advisory Board approves formal amendments to the Transportation Improvement Program. The Metropolitan Council concurs with the action of the TAB. This project and the amendment is exempt from air quality conformity analysis, is consistent with the Transportation Policy Plan and does not affect fiscal constraint as it uses unprogrammed regional funds in 2012.

Funding

This project is funded with a combination of CMAQ funding that was made available because several regionally-funded projects were withdrawn from the program leaving a positive balance for 2012 and local matching funds administered by the Minnesota Pollution Control Agency.

Known Support / Opposition

There was some opposition expressed by some members of the TAB. The reasons for opposing the action included a feeling that the automobile industry and other private sector actors should provide for the necessary infrastructure to support the new electric vehicle technology, as well as opposition to providing direct allocations of regionally-controlled federal funds outside of the biennial solicitation. Reasons to award the funding were that the project would result in cost effective emissions reductions and that the installation of charging stations would position the Twin Cities as an attractive market for electric cars.

Transportation Advisory Board

of the Metropolitan Council of the Twin Cities

Bill Hargis
Chair

February 17, 2012

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Transit

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Freight

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Non-motorized

Susan Haigh, Chair
Metropolitan Council
390 Robert Street No.
St. Paul, MN 55101

Ms. Haigh,

On February 15, 2012 the Transportation Advisory Board voted to amend the 2012-2015 Transportation Improvement Program to include SP# 092-070-001, procurement and installation of 76 electric vehicle recharging stations in the Twin Cities Metropolitan Area. The project is sponsored by the Minnesota Pollution Control Agency.

This amendment is needed to identify this new project. All projects that will be partially funded with federal transportation funds must be in an approved TIP in order for the project sponsor to use the funding. The project will be programmed in 2012 with federal funds that became available when another project sponsor withdrew two projects from the TIP.

The TAB forwards the TIP amendment action to the Metropolitan Council for concurrence along with additional information described in TAB action transmittal 2011-60.

Sincerely,



for
Bill Hargis,
Chair

kjr/kjr

Transportation Advisory Board
of the Metropolitan Council of the Twin Cities

ACTION TRANSMITTAL

No. 2011-60

DATE: February 17, 2012
TO: Metropolitan Council
FROM: Transportation Advisory Board
SUBJECT: Minnesota Pollution Control Agency Proposal for CMAQ Funding for Electric Vehicle Charging Stations.
MOTION: The TAB adopted an amendment to the 2012-2015 TIP to include SP# 092-070-001, procurement and installation of 76 electric vehicle charging stations in the Twin Cities Metro Area.

BACKGROUND AND PURPOSE OF ACTION:

The Minnesota Pollution Control Agency (MPCA) first approached the TAB with a request for \$500,000 in CMAQ funds for the installation of electric vehicle recharging stations in late 2010. The TAB referred the request to the technical committees to evaluate the benefits of the proposal. At the TAB's direction, the TAC Funding & Programming Committee and full TAC evaluated MPCA's request and determined that the project is eligible for CMAQ funding and that the project has merits from an air quality cost effectiveness standpoint, but does not fit within the CMAQ project categories in the regional solicitation and would not score well based on other criteria such as congestion mitigation.

The TAC offered two funding options. The first option would program the project in 2012 using available funds from withdrawn regional projects. These funds would otherwise be added to the 2011 Regional Solicitation. The second option would fund the project with CMAQ funds from the 2011 regional solicitation and program this project in 2015. This reflects a desire on the part of the TAC Funding & Programming Committee to ensure fairness to applicants in the 2011 Regional Solicitation since many projects may need to be delayed if the next federal transportation act is significantly smaller than SAFETEA-LU.

TAB members commented both in favor and in opposition to the proposal. The main points of discussion are below:

- Support for electric vehicles and the infrastructure because they are likely to become a more common.
- Support for electric vehicles but the auto industry or other private sector should provide for the necessary infrastructure.
- Oppose the direct allocation of funds to a special project outside the regional solicitation process.

As reflected in the motion, the TAB voted for the first option; to award funds from the 2012 fund balance and program the project for implementation in 2012.

RELATIONSHIP TO REGIONAL POLICY: Federal law requires that all transportation projects that will be partially funded with federal funds must be in an approved Transportation Improvement Program and meet the following four tests: fiscal constraint; consistency with the adopted regional transportation plan; air quality conformity and opportunity for public input. It is the TAB's responsibility to adopt and amend the TIP according to these four requirements.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Funding & Programming Committee	Review & Recommend	August 18, 2011
Technical Advisory Committee	Review & Recommend	September 7, 2011
TAB Programming Committee	Review & Recommend	February 15, 2012
Transportation Advisory Board	Review & Approve	February 15, 2012
Metropolitan Council	Concurrence	

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Minnesota Pollution Control Agency

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February 14, 2012

Bill Hargis, Chair
Transportation Advisory Board
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: 092-070-001

Dear Mr. Hargis:

Please amend the 2012 – 2015 Transportation Improvement Program (TIP) to include the above referenced project(s) project in Program Year 2012. The project is being submitted with the following information:

PROJECT IDENTIFICATION:

STIP SEQ#	STATE FISCAL YEAR	A T P	D I S T	ROUTE SYSTEM	PROJECT NUMBER (S.P. #) (Fed # if available)	AGENCY	DESCRIPTION include location, description of all work, & city (if applicable)	MILES
	2012	M	M	999	092-070-001	MPCA	Procurement and installation of 76 electric vehicle charging stations in the Twin Cities metro area.	0

PROG	TYPE OF WORK	PROP FUNDS	TOTAL \$	FHWA \$	ACS	FTA \$	TH \$	OTHER \$
NA	Capital Improve ment	CMAQ	\$625,000	\$500,000	\$0	\$0	\$0	\$125,000 (MPCA)



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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).

The Minnesota Pollution Control Agency (MPCA) has requested \$500,000 in CMAQ funds for the procurement and installation of 76 electric vehicle recharging stations in the Twin Cities metro area. A recently completed needs assessment by Project Get Ready, a national collaboration of cities, local government units and businesses, determined that one charging station is needed for every 100 electric vehicles. This ratio indicates that a minimum of 125 plug-in charging stations should be installed in the Minnesota by 2015. The 25 plug-in stations currently being installed along with the 76 for a total 101 charging stations will bring the state close to this achieving this goal.

The MPCA made this funding request directly to the TAB because the proposal does not fit within the CMAQ program project categories in the regional solicitation process. A TIP amendment is needed to identify these funds in an approved TIP

2. How is Fiscal Constraint Maintained as required by 23 CFR 450.216 (check all that apply)?

- New Money *(indicate type here) _____
- Anticipated Advance Construction _____
- ATP or MPO or MnDOT Adjustment of other projects X*
- Earmark or HPP federal funds outside the ATP target _____
- Other (indicate source here) _____

* Project 082-569-003 (Seq #1556) in SFY 2012 of t the 2012-2015 with \$3,391,472 in federal funds has been withdrawn from the Transportation Improvement Program. Project #092-070-001 will use \$500,000 of the federal funds from Project 082-569-003, the remaining 2,891,472 of federal funds will be used for future projects. The federal funds remaining from Project #082-569-003 and the state funds from the Minnesota Pollution Control Agency are sufficient to cover the cost of the project, therefore fiscal constraint is maintained.

CONSISTENCY WITH MPO LONG RANGE PLAN:

This amendment is consistent with the Metropolitan Council 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 FHWA/FTA conformity determination established on February 23, 2011.

AIR QUALITY CONFORMITY:

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



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*Exempt Project Category # Non Classifiable Project Per Section 93.126 of the Conformity Rules. This proposal does not match any of the air quality categories provided in the Conformity Rules. The proposal demonstrates that it will reduce vehicle emissions and have a positive impact on air quality.

We are requesting approval of this TIP amendment at this time. If you have any questions, please contact me at (651) 757-2221.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Benke".

Dave Benke
Director, Prevention and Assistance Division
Minnesota Pollution Control Agency

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

Electric Vehicle Charging Station Infrastructure Development Twin Cities Metropolitan Area

Executive Summary of Emissions Calculations

Emissions reduction outcomes for this project were calculated using the Appendix G worksheet—the same worksheet used by Congestion Mitigation Air Quality proposals submitted during the competitive round. Tailpipe emissions for an automobile powered by gasoline were compared to those of an electric vehicle for an equivalent number of daily vehicle miles traveled. Installation of the proposed charging stations reduces 'range anxiety' allowing EV drivers to travel the same distance each day, that they would otherwise travel using a gasoline powered vehicle, while generating zero emissions from the tailpipe. This same type of comparison is used to determine the emissions reduction benefits of other alternative fuel use in buses or other vehicles.

VEHICLE EMISSIONS REDUCTION WORKSHEET (APPENDIX G) Electric Vehicle Recharging Stations

Year 3 Estimated Daily Usage of the Recharging Stations				104	# electric auto trips
Estimated average trip distance using electric vehicles recharged on site				18.0	miles
Year 3 Estimated Daily Electric Auto VMT				1728	
Equivalent Year 3 Estimated Daily Gas Auto VMT				1728	
GAS AUTO EMISSIONS GENERATED					
Average Weekday Auto Travel Speed:				30	mph
YEAR THREE					
	Emissions Factor (grams/mile)*	Daily Gas Auto VMT (miles)	Emissions (kg/day)		
CO Emissions	14.88	1,728	25.7		
NO_x Emissions	1.68	1,728	2.9		
VOC Emissions	1.39	1,728	2.4		
Total Emissions			31.0		
ELECTRIC AUTO EMISSIONS GENERATED					
Average Weekday Auto Travel Speed:					mph
YEAR THREE					
	Emissions Factor (grams/mile)	Daily Electric Auto VMT (miles)	Emissions (kg/day)		
CO Emissions	0.00	1,728	0.0		
NO_x Emissions	0.00	1,728	0.0		
VOC Emissions	0.00	1,728	0.0		
Total Emissions			0.0		
NET PROJECT EMISSION REDUCTIONS					
	Gas Auto Emissions Generated (kg/day)	Electric Auto Emissions Generated (kg/day)	Net Emission Reductions (kg/day)		
YEAR THREE	31.0	0.0	31.0		

*Appropriate emissions factors are based on average speed.

Average Distance Traveled

The vehicle miles traveled is based on information from the "2000 Transportation Behavior Inventory" which stated the average distance from home to work for people who drive in the metro area is 11.1 miles (22.2 miles round trip). The average people drive each day for medical, social, and recreation purposes is 6.5 miles. These metrics were used for charging station locations that did not have the site specific mileage data. Sites including the Metro Transit Park & Ride sites and Macalester College had site specific travel distance information for their proposed charging station locations.

EVs per Station

An assumption was made that commuter parking in ramps would result in one vehicle occupying a charging station each day. Charging stations in locations adjacent to shopping, recreation, or community centers were assumed to be used twice each day as was the valet parking at the airport. These are conservative assumptions since the charging stations are capable of providing power throughout an entire day.

Daily Vehicle Miles Traveled (VMT)

The daily vehicle miles traveled was based upon how each station was contributing to avoided air emissions. The calculation for daily VMT: number of charging stations X number of EVs per station (2 EVs per non-commuting location, 1 EV per commuting) X estimated trip distance = daily vehicle miles traveled. For example at the Leamington Ramp in Minneapolis, 3 stations X 1EV per station (commuting) x 22.2 miles = 66.6 daily vehicle miles traveled.

Total VMT

The cumulative daily vehicle miles traveled for all stations is a total of 1,728 vehicle miles traveled (VMT). For the gasoline powered vehicle the carbon dioxide (CO), nitrous oxide (NOx), and volatile organic compound (VOC) emissions were calculated by multiplying their respective tailpipe emissions factor times the mileage. For example, for CO emissions 14.88 grams/mile X 1,728 miles VMT = 25.7 kg/day emissions. The total for all three air pollutants for the gasoline powered vehicle are 31 kg/day. Because the electric vehicle has no emissions from the tailpipe all emissions are zero.

Total Emissions Reduction and Cost Effectiveness

The total daily emissions reduced for all three air pollutants, CO, NOx, VOC is 31 kg/day. The Cost effectiveness is $\$625,000/31.0 \text{ KG} = \$18,769 \text{ KG/DAY}$.

Transportation Advisory Board
of the Metropolitan Council of the Twin Cities

TO: Transportation Advisory Board
FROM: Kevin Roggenbuck, Transportation Coordinator
DATE: February 14, 2012
RE: MPCA Electric Vehicle recharging proposal and the CMAQ project categories.

At the TAB meeting on January 18, several members asked for an explanation as to why the MPCA electric vehicle recharging infrastructure could not be funded through the normal regional solicitation process for Congestion Mitigation Air Quality funds (CMAQ) funds. Staff provides that information below from discussions and presentations at the technical committee meetings.

The federal guidance on the CMAQ program dated October 20, 2008 lists 15 different capital projects and non-capital programs that are eligible for CMAQ funding. The MPCA electric vehicle proposal would be an eligible project under Activity #3: Alternative Fuels and vehicle Fuels.

The CMAQ category in the regional solicitation contains a number of qualifying criteria that reflect requirements in the federal guidance and rules on the CMAQ program, and regional policies related to the region's Transportation Policy Plan. Although the MPCA electric vehicle recharging proposal is an eligible project type according to the federal guidance and meets all the qualifying criteria in the regional solicitation, the proposal can satisfy only a few of the prioritizing criteria because the criteria require specific information or calculations of benefits unique to transit or transportation system management projects.

For a proposal like this to compete in the regional solicitation, criteria would have to be developed for it.