



Request for City Council Committee Action from the Department of Public Works & Department of Regulatory Services

Date: May 10, 2010

To: **Council Member Sandra Colvin Roy, Chair** – Transportation & Public Works Committee
Council Member Elizabeth Glidden, Chair – Regulatory Services, Energy and the Environment Committee

Subject: Legislative Citizen Commission on Minnesota Resources (LCCMR) grant application, Building Minnesota’s Electric Future

Recommendation: Authorize Proper City Departments to accept funding, if awarded, from the LCCMR to develop electric vehicle charging stations and purchase electric vehicles.

Previous Directives: None

Department Information

Prepared by: Daniel Huff (673-5863), John Scharffbillig (673-5775)

Approved by:

Henry Reimer, Director of Inspections, Department of Regulatory Services

Rocco Forté, Director of Emergency Preparedness & Regulatory Services

Steven A. Kotke, P.E., City Engineer, Director of Public Works

Presenters in Committee: Daniel Huff, John Scharffbillig, Matt Laible

Reviews

- Permanent Review Committee (PRC): Approval ___ Date _____
- Civil Rights Approval Approval ___ Date _____
- Policy Review Group (PRG): Approval ___ Date _____

Financial Impact

- Action is within the Business Plan
- Action requires a change to the Business Plan
- Other financial impact

Community Impact

- Neighborhood Notification
- City Goals
- Comprehensive Plan
- Zoning Code
- Other

Supporting Information

In April, 2009 the City partnered with Xcel Energy and Minnesota Pollution Control Agency in forming a local coalition committed to making electric vehicles a reality in Minnesota. This coalition partnered with Ford Motor Company (Ford) in a grant application to the US Department of Energy (DOE). This partnership ended when Ford and the DOE failed to reach a funding agreement.

The Minnesota-based coalition has continued to work towards its goal of bringing electric vehicles to the Metro Area. Members of the coalition include: City of Minneapolis, City of St. Paul, Hennepin County, Ramsey County, Metropolitan Airports Commission, State of MN Department of Administration, Pollution Control Agency, Department of Natural Resources, and the Office of Energy Security, Xcel Energy, American Lung Association of MN, Fresh Energy, and HourCar. Efforts have focused on purchasing electric vehicles for fleet use and the deployment of public charging stations.

The American Lung Association of MN, on behalf of the coalition, has submitted a proposal to the Legislative Citizen Commission on Minnesota Resources (LCCMR) to receive funds from the state's Environment and Natural Resources Trust Fund. If awarded, these funds will be used by partners to install public charging stations, public solar-powered marquee charging stations and to cover the cost differential for the purchase of electric vehicles. The full proposal is attached (Attachment 1). After initial screening and review, a limited number of proposals will be invited to present to the LCCMR starting this June. The LCCMR will recommend some of these proposals for funding. In the Spring of 2011 these recommendations will be acted upon the Minnesota Legislature and signed into law by the Governor. If awarded, the project will begin July 1, 2011 and end on June 30, 2013.

The Department of Public Works and the Department of Regulatory Services are requesting authorization to be a full partner in this American Lung Association of Minnesota proposal and, if awarded, accept funding from the LCCMR to install public charging infrastructure and to purchase electric vehicles for City fleet use if analysis by the Department of Public Works determines the project to be a net benefit to the City. Table 1 outlines the potential commitment of the City.

Table 1

Activity	LCCMR funding	City Commitment
Install up to 3 solar-powered Marquee charging stations, develop and install appropriate signs, implement web-based charging/availability application	\$40,000 each marquee	Project management, Operations and Maintenance (O&M) use of public parking spaces.
Install up to 30 on-street charging stations, develop and install appropriate signs, implement web-based charging/availability application	\$8,000 each station	Project management, O&M, use of public parking spaces
Install up to 40 in- ramp charging stations, develop and install appropriate signs, implement web-based charging/availability application	\$4,000 each station	Project management, O&M, use of public parking spaces
Purchase up to 5 electric fleet vehicles with necessary charging station	\$20,000 each for cost differential above an equivalent gasoline vehicle.	Gas equivalent vehicle cost. Project Management, O&M of vehicle and its charging port.
Communications	\$0	Press releases, press conferences, graphics design/consultation, website content development, maintenance and support, Cable video content development, filming, editing, air time.

Attachments: 2011 – 2012 Main Proposals - LCCMR Proposal submitted by the American Lung Association of Minnesota.

2011-2012 MAIN PROPOSALS

PROJECT TITLE: Building Minnesota's Electric Vehicle Future

I. PROJECT STATEMENT

Electric vehicles (EVs) have arrived, bringing cleaner air, independence from foreign oil, and better integration of renewable energy, however, they may not be coming to Minnesota. Without a proven track record of EV use in our cold climate and without supporting charging infrastructure, car companies will not bring this advanced technology to our state. This project will bring advanced electric vehicles to Minnesota and ripen the market for broad scale, regional EV deployment, which will provide cleaner air, reduced fuel costs of less than \$1 per gallon gasoline-equivalent, and replacement of fossil fuel imports with locally generated electricity.

As part of this project, the partners will:

- *Establish a public charging infrastructure for EVs* by installing a network of publicly available smart charging stations and highly visible solar-powered stations, on-street stations and public parking ramp stations.
- *Deploy next generation electric vehicles to public fleets* providing real world application and exposure of these new vehicles in Minnesota's climate.
- *Develop the Market* through highly visible coordinated roll-out of electric vehicles, public charging infrastructure and promotional efforts.
- *Study electrical grid impact* by partnering with Xcel Energy to evaluate charging capacity, load management and renewable energy generation integration with EV battery storage systems.

Air pollution is a serious concern for Minnesota and has a significant impact upon human health, wildlife and our forests. National air quality standards are being strengthened, pushing the Twin Cities Metro Area closer to nonattainment with the Federal Clean Air Act. Over half of all hazardous air pollutants in Minnesota and nearly a third of all greenhouse gas (GHG) emissions come from mobile sources. Tailpipe emissions, which occur at ground level where we work and live, have a disproportionate impact upon human health. Electric vehicles have zero emissions from the tailpipe. Electric power generation is less polluting than burning gasoline and, with Minnesota's Renewable Energy Standard, becomes cleaner every year. When vehicles are powered with wind or solar generated electricity there are no emissions. This innovative project will directly reduce GHG emissions and protect natural resources and human health from deleterious pollutants emitted from road vehicles.

DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Install EV Plug-in Charging Stations

Budget: \$ 694,500

Install EV charging stations in prime parking spaces for public use. The partners will install a minimum of 40 on-street and 50 parking ramp smart charging stations. Additionally, the partners will install four solar-powered "marquee" charging stations at premium locations such as near the Xcel Energy Center or Target Field. Develop extensive outreach through popular social media outlets and coordinated communications strategy to promote these stations. Web-based applications will map and show availability of the full charging network. Partners will assume all operation and maintenance costs.

Outcome	Completion Date
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1. Prime locations for solar marquee and smart charging stations are identified and mapped. Contract(s) for solar marquee design and build, purchase and installation of smart charging towers are secured and the contract work is implemented.	January 2012
2. Installation of street, ramp and solar marquee charging stations	December 2012
3. Frequency of use, energy usage, and emissions reductions are tracked, analyzed and documented.	June 2013

Activity 2: Addition of Vehicles to Partner Fleets

Budget: \$ 414,000

Deploy EV into partner fleets for daily use. Major auto manufactures anticipate releasing EVs for purchase in limited markets by the end of 2011. Most are focusing EV sales only on the East and West Coasts, however, a number of vehicle manufacturers are interested in our plans for vehicle and infrastructure deployment and have expressed a willingness to bring their vehicles to Minnesota. Funding from this proposal will be used to offset the cost differential or incremental cost between a gas-powered vehicle and the EV equivalent. Partners will pay the base (gas equivalent) cost for each vehicle and assume all operational and maintenance costs.

Outcome	Completion Date
1. Procurement of at least 20 electric drive vehicles to be integrated into daily use by partner fleets. As part of operation, partners will use a vehicle wrap to highlight the project and EV use.	December 2012

II. PROJECT STRATEGY

A. Project Team/Partners

The project coalition is organized by Steering Committee whose members include: Daniel Huff, City of Minneapolis (Chair), Anne Hunt, City of Saint Paul, Lisa Thurstin, American Lung Association in Minnesota, Greg Palmer, Xcel Energy and Fran Crotty, Minnesota Pollution Control Agency. The Steering Committee oversees work of the Siting, Technology, Contracts and Education Teams. Engaged, active coalition members represent the Cities of Saint Paul and Minneapolis, Hennepin and Ramsey Counties, Xcel Energy, Fresh Energy, Neighborhood Energy Consortium (Hour Car), Minnesota Department of Administration, and the Minnesota Pollution Control Agency. The American Lung Association in Minnesota will serve as the fiscal agent and administration organization.

B. Timeline Requirement

EV charging infrastructure will begin in year one and continue into the end of year two. Addition of EVs to public fleets will begin in year one and continue through year three.

C. Long-Term Strategy and Future Funding Needs

This project is essential for overcoming a key challenge for migration to cleaner vehicles that run on electrical power. The dilemma is this—before purchasing electric vehicles, consumers need accessible, convenient locations for recharging them. However, electric vehicles must be present before recharge locations are established. Funding from the Environment and Natural Resources Trust Fund will overcome this dilemma through simultaneous rollout of vehicles and charging stations. Once this threshold for adoption of EVs is overcome, project partners and other local units of government will continue to invest in charging infrastructure to meet the needs of their constituents. Businesses, private

retail, entertainment and restaurant locations are likely to follow suit by sponsoring and installing plug-in stations onsite to meet the needs of their employees and customers.

Building Minnesota's Electric Vehicle Future

Building a plug-in charging infrastructure and a fleet of zero-emission electric vehicles. Protecting our natural resources and human health through direct greenhouse gas and air pollution reduction.



Partners will utilize **electric vehicles** in day to day work operations throughout the communities they serve.



Charging stations at parking spaces along city streets and in publically owned parking ramps will allow the public to fuel up while at work, shopping, or watching a game.



Solar "Marquee" charging stations strategically placed at some of the Twin Cities most prominent locations will allow the public to plug in for a 100% renewable, non-polluting fill up.



Xcel Energy will evaluate charging capacity, load management and **renewable energy integration** with electric vehicle batteries.

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET - 2 years

BUDGET ITEM	AMOUNT
Personnel: American Lung Assn in MN - Program Manager to act as fiscal agent and administer grant. 17% Salary 31.5% Benefits 20% FTE 2 yrs 2 staff people	\$ 28,500
Contracts: 1. Solar PV Installer that will design and build four-3kW solar marquee plug-in charging stations. [4 stations@\$40,000 = \$160,000] 2. Vendor to supply and install 40 on-street and 50 ramp smart charging plug-in stations. [50@\$4,000 ramp + 40@\$8,000 on-street = \$520,000]	\$ 680,000
Equipment/Tools/Supplies: Differential cost share of purchase price for 20 electric drive vehicles @\$20,000 = \$400,000. [\$40,000 total vehicle cost - \$20,000 partner contribution = \$20,000 cost share]	\$ 400,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 1,108,500

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: Project Partners - Street Infrastructure Deployment & Support \$40,000 Project Partners - Purchase of Electric Vehicles \$400,000 [\$20,000 cost share per electric vehicle x 20 vehicles = \$400,000] Xcel Energy - Solar Rewards Program \$27,000 [Rebate \$2.25 per watt x 3,000 watts/solar marquee x 4 = \$27,000]	\$ 467,000	<i>Pending</i>
In-kind Services During Project Period: Press releases, press conferences, graphics design/consultation \$7,500 Website development, maintenance, support \$7,000 Cable video content development, filming, editing, air time \$15,000 Vehicle operations and maintenance \$225,000 [125,000 miles (life of vehicle) x \$.09/mile main. cost = \$11,250/vehicle] [\$11,250 per vehicle x 20 vehicles = \$225,000] Total Inkind Services = \$254,500	\$ 254,500	<i>Pending</i>
Remaining \$ from Current ENRTF Appropriation (if applicable):	N/A	N/A
Funding History: City of Saint Paul secured \$286,000 from DOE Energy Eff. Comm. Block Grant to procure plug-in electric vehicles and install EV charging stations in 2010.	\$ 286,000	<i>Secured</i>