COUNCIL REPORT

CITY OF MOUNTAIN VIEW

DATE: July 7, 2015

CATEGORY: Consent

DEPT.: Community Development

TITLE: **Public Electric Vehicle Chargers and Fees**

RECOMMENDATION

1. Authorize the City Manager to negotiate and execute a contract with ABM Electrical Power Services, LLC, for an amount not to exceed $50,000 for the installation of five dual-port, Level 2 electric vehicle chargers to be located in the California/Bryant Parking Structure and four dual-port, Level 2 electric vehicle chargers to be located in the City Hall parking garage; to negotiate and execute a contract with ChargePoint, Inc., for a Master Services and Subscription Agreement for charger network services; and to accept five dual-port, Level 2 electric vehicle chargers received through a California Energy Commission grant.

2. Institute a fee for use of public Level 2 electric vehicle chargers in Mountain View.

3. Appropriate $50,000 from the CIP Reserve to Project 16-14, Facilities Maintenance Plan, to cover expenses associated with the installation of the nine new electric vehicle chargers. (Five votes required)

BACKGROUND

At its November 18, 2013 meeting, the Council Environmental Sustainability Committee (CESC) requested that staff research alternatives for the deployment of additional electric vehicle (EV) chargers in Mountain View and return to the Committee with additional information regarding:

- Growth projections for EV use.
- Costs (operating, installation, electricity).
- Funding opportunities.

- Possible locations (with a focus on City facilities) and recommended number of chargers.

- What other nearby cities are doing regarding the deployment of EV chargers.

- A recommendation regarding whether or not to charge for the electricity used.

In December 2013, staff learned of the Bay Area Climate Collaborative's (BACC) effort to coordinate and submit a $500,000 grant application to the California Energy Commission (CEC) on behalf of local agencies in the nine-county Bay Area region to fund the deployment of additional EV charging infrastructure throughout the region. The City submitted a request to the BACC for the inclusion of five dual-port, Level 2 (L2) charging stations at the California/Bryant Parking Structure, which would enable 10 vehicles to charge simultaneously. BACC was awarded the grant.

Under the terms of the CEC grant, the City:

- Receives five dual-port, L2 ChargePoint CT 4000 series model EV chargers, including a one-year warranty, at no cost.

- Receives subsidized installation costs, including a warranty on labor and construction materials for one year after installation. Installation expenses beyond those covered by the grant are to be paid by the City, and are estimated at approximately $15,000 for the five chargers.

- Receives two years of quarterly charger maintenance valued at $4,000.

- Agrees to pay a ChargePoint network service fee of $230 per port per year for two years ($4,600 total), which covers payment processing, cloud-based charger information services, software upgrades, station programming, cellular connections, and 24/7 driver support.

- Agrees to implement a plan to encourage the use of the chargers by multiple EVs during a typical day, and to prohibit utilization of a charging station "beyond a reasonable period of time."

The total value of goods and services received by the City under the CEC grant is approximately $65,000.

Toward compiling the information requested by the CESC, staff convened an informal community task force comprised of knowledgeable EV enthusiasts. At its February 5,

2015 meeting, the CESC voted unanimously to recommend acceptance of the five EV chargers under the CEC grant and charging a fee for use of public L2 chargers.

ANALYSIS

Growth Projections for EV Use

The increasing adoption rate of plug-in electric vehicles (PEV) in the U.S. and worldwide has been dramatic in the last several years. The introduction of the Nissan LEAF battery electric vehicle (BEV) and the Chevy Volt plug-in hybrid electric vehicle (PHEV) in late 2010 marked the start of truly affordable plug-in electrics, and as of the end of 2014, there are well over 285,000 BEVs and PHEVs on the roads in the U.S. from 15 different manufacturers. Growth of PEVs has been faster in their first four years than gas-electric hybrid vehicles, such as the Toyota Prius, Honda Insight, and Honda Civic hybrid, were in their first four years in the early 2000s. Nearly 120,000 PEVs were put on the roads in the U.S. during 2014 alone.[1] Sales of PEVs in California exceeded 100,000 cars as of August 2014, and accounted for approximately 40 percent of all PEVs sold in the U.S.[2] Hybrid electric vehicles (HEV) and PEVs account for nearly 10 percent of all new car sales in California, with HEVs at 6.4 percent, PHEVs at 1.7 percent, and BEVs at 1.5 percent.[3] The San Francisco Bay Area accounts for over 42 percent of BEV sales in California, with Santa Clara County alone at over 17 percent.[4]

It is difficult to predict with precision what the growth rates of EVs will be over the next decade. Demand has been increasing steadily for four years, and investments and public statements being made by auto manufacturers, particularly Nissan, Tesla, BMW, GM, Ford, and others, lead to an expectation of continued growth. If one assumes sales growth over the next few years of 10 percent to 20 percent, the growth in the total number of EVs on the road will be high since the market is so new. There are very few aging EVs being taken out of service each year—most of the EVs on the road today are less than two years old.

Demand for public charging is expected to grow along with the population of EVs. While longer-range EVs may, at first glance, seem to require less public charging at destinations, longer-range EVs may in turn encourage longer trips to be made; thus,

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[1] Inside EVs, "Monthly Plug-in Sales Scorecard": http://insideevs.com/monthly-plug-in-sales-scorecard/

[2] Center for Sustainable Energy, "California Races Ahead in Electric Car Adoption": https://energycenter.org/article/california-races-ahead-electric-car-adoption

[3] Electric Vehicle News, "Electric vehicles account for almost 10% of Californian new-car sales": http://www.electric-vehiclenews.com/2014/11/electric-vehicles-account-for-almost-10.html

[4] Center for Sustainable Energy, "CVRP Rebate Statistics": https://energycenter.org/clean-vehicle-rebate-project/rebate-statistics

maintaining significant demand even among those vehicles. Longer-range EVs will also cost more to purchase, so there is likely to be a predominance of shorter-range EVs on the road, at least for the next several years. For more information on EV growth projections, see Attachment 1.

Public EV charging infrastructure supports visitors and employees, as well as nearby apartment dwellers who otherwise lack access to EV chargers.

EV Charger Funding Opportunities

Including the five new, dual-port L2 EV chargers to be installed in the California/Bryant Parking Structure, the City's nine publicly accessible chargers were all acquired through grant funds or donation. Staff continues to monitor available sources in order to take advantage of grant funding for additional chargers. Currently, the Bay Area Air Quality Management District (BAAQMD) is providing grant funding to accelerate EV adoption in fleets, and staff is evaluating this opportunity.

Charger Type and Locations

Staff proposes installing the five new L2 chargers in the California/Bryant Parking Structure due to its central location downtown and lower utilization rate compared to other downtown garages and lots.

The informal community EV task force recommended the following approach when installing future chargers and selecting their locations:

- Prioritize installing chargers in the following locations:
  - Downtown parking lots 1, 6, and 7 (see parking map in Attachment 2).
  - Community Center and Senior/Child-Care Center.
- Install about four Level 1 (L1) chargers for every one L2 charger.
- All other things equal, favor lowest-cost-to-install locations.
- Avoid prime parking locations.
- Avoid the roof of parking structures (due to exposure to the elements), unless the chargers are solar powered.

What Other Cities Are Doing

Currently, the City does not require EV charging station users to pay a fee for the electricity they consume, but some nearby cities do require payment. Attachment 3 provides a summary of public EV charging stations in Mountain View and five other area cities. Three of the five other cities currently collect a fee for the electricity, ranging from $1.50 per hour to $5.00 per hour depending on the type of charger. The remaining two cities have stated that they intend to collect a fee for electricity in the future. Cupertino and Redwood City collect per-hour fees, while San Jose collects a per-session fee and per-kilowatt-hour (kWh) fee. Palo Alto and Cupertino have made code changes requiring new parking facilities to be prewired for EV charging systems.[5]

Sustainability Benefits

EVs produce only about 30 percent of the greenhouse gas emissions of their conventional combustion engine counterparts, and all-electric vehicles eliminate toxic air pollution from vehicle tailpipes. Installing public charging stations directly supports the City's efforts to reduce greenhouse gas emissions, as outlined in the General Plan and draft communitywide Climate Protection Roadmap.

EV Parking Limits

With the exception of the street-level parking spaces within the California/Bryant Parking Structure, all parking spaces within this parking structure are currently restricted to a time limit of two (2) hours between the hours of 8:00 a.m. and 5:00 p.m. of any day except Saturdays, Sundays, and public holidays (permits are also allowed in this lot for longer parking duration).

Upon installation of the EV chargers, the dedicated EV parking spaces can be converted to four (4) hour parking anytime spaces for EV vehicles only. This change can be made by the City Traffic Engineer who, per Mountain View Municipal Code Chapter 19, Sec. 19.92, has the authority to order signs to be erected or posted, or curb markings to be placed indicating that the parking of vehicles is thus prohibited, limited, or restricted on City property owned or controlled by the City such as the City parking lots and garages. These changes would be effective for the Civic Center garage as well.

[5] Palo Alto Online, "Palo Alto speeds ahead with new electric-vehicle requirements": http://www.paloaltoonline.com/news/2014/07/03/palo-alto-speeds-ahead-with-new-electric-vehicle-requirements

EV Charger Expenses

The City estimates the following costs associated with installing L1 and L2 EV chargers in Mountain View under circumstances where no grant money is available:

	1 Dual-Port L2 Charger	**1 Single-Port L1 Charger**
Chargers	$2,000 to $8,000	$500 to $750
Permitting, Striping, Signage	$600	$600
Installation	$2,000 to $8,000	$500 to $1,000
Operation (Network Service Fee)	$600 per year	N/A
Electricity	$3,000 to $4,000 per year	$1,000 per year
Maintenance/Repairs	$500 to $2,000 per year	Up to $500 per year

The estimated average annual cost of electricity for a charging station is $1,000 to $4,000, depending on the type of charger, type of vehicles that use the charger, the utility rate tariff, and the amount of electricity used. The electricity cost, network service fee, and any maintenance costs could be fully covered by collecting hourly usage fees from users of L2 chargers.

Instituting a Fee for the Electricity

The City has evaluated BACC recommendations for EV charger fees, analyzed the policies of neighboring cities, and convened a community task force of EV experts. Based on this information, and as shown in the table below, staff recommends:

1. Collecting an hourly fee for use of public L2 chargers;

2. Increasing this fee after two hours to encourage turnover of vehicles; and

3. Providing use of L1 chargers for free, given they are relatively less expensive to operate, they cannot easily be equipped to collect fees, and to encourage EV ownership and reduction in greenhouse gas emissions.

The proposed hourly fees are designed for cost recovery to cover electricity, network, and maintenance expenses.

L2 Chargers	7:00 a.m. to 8:59 p.m.	9:00 p.m. to 6:59 a.m.
Up to 1 Hour	$1.50 (flat fee)	$1.50 (flat fee)
Second Hour	$1.50/Hour (prorated by minute)	$0.25/Hour (prorated by minute)
Beyond 2 Hours	$5.00/Hour (prorated by minute)	$0.25/Hour (prorated by minute)

Replacement of Existing EV Chargers

The three existing ClipperCreek L2 chargers, and one legacy GMC Magne Charge charger, in the Civic Center parking garage are not currently equipped to collect fees. To ensure a consistent policy across all public L2 chargers, and enable the City to collect fees for use of the Civic Center chargers, staff proposes replacing these four existing chargers with new ChargePoint dual-port, Level 2 electric vehicle chargers. This would increase the number of current-standard charging ports in the Civic Center garage from three to eight.

ENVIRONMENTAL REVIEW

This project qualifies as categorically exempt under the California Environmental Quality Act (CEQA) Section 15301 ("Existing Facilities") because it is characterized as the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

FISCAL IMPACT

Under the terms of the CEC grant, the City's estimated expenses for the five new L2 EV chargers are:

Installation:	$15,000
Network Service Fee (2 years):	$4,600

The City's estimated expenses to replace the existing four L2 chargers in the Civic Center garage to be able to collect user fees are:

Chargers and Installation:	$28,000
Network Service Fee (1 year):	$2,000

There are sufficient funds available in the CIP Reserve for the recommended $50,000 appropriation while still maintaining all necessary reserves including the $5.0 million reserve balance.

NEXT STEPS

If the Council supports the recommendations, staff expects to complete the installation of the nine new chargers this fall.

ACKNOWLEDGMENTS

The City would like to thank the following members for their service on the informal community EV task force and assistance in compiling the information in this memorandum: Sven Thesen, Steve Strange, David Paradise, Arthur Keller, and Marc Geller.

CONCLUSION

Staff is recommending that the City Council authorize the City Manager to negotiate and execute contracts with two vendors for the installation of EV chargers and for charger network services, institute a fee for the use of the chargers, and appropriate $50,000 from the CIP Reserve to cover expenses associated with the installation of the chargers.

ALTERNATIVES

1. Do not authorize the City Manager to negotiate and execute a contract with ABM Electrical Power Services, LLC, for EV chargers or a contract with ChargePoint, Inc., for charger network services.

2. Do not institute a fee for use of public Level 2 EV chargers in Mountain View.

3. Provide other direction.

PUBLIC NOTICING

Agenda posting and e-mails sent to community members interested in environmental sustainability.

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Attachments:
1. Electric Vehicle Growth Projections
2. Map of Downtown Parking Facilities
3. Electric Vehicle Chargers at Public Facilities—Selected South Bay Cities

cc: TBM, ACDD/PM, CTE, STE—Lopez, EDM, BDS, FFM