



CITY OF FORT BRAGG

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COUNCIL COMMITTEE ITEM SUMMARY REPORT

MEETING DATE: September 28, 2016
TO: Public Works & Facilities Committee
FROM: Scott Schneider, Director of Administrative Services
Tom Varga, Director of Public Works
AGENDA ITEM TITLE: **RECEIVE REPORT AND DISCUSS OPTIONS FOR ELECTRIC
CAR CHARGING STATIONS IN CITY-OWNED PARKING LOTS**

ISSUE:

The City, for several years, has discussed the possibility of installing Electric Vehicle (EV) charging stations in City-owned parking lots throughout the City. Currently, the Mendocino Land Trust (MLT) has grant funds sufficient for the purchase and installation of several EV stations. The number of EV stations as well as specific locations will depend on the type of charging system chosen.

SUMMARY:

In the late 1990's, the City installed an EV station in the public parking lot next to the North Coast Brewery restaurant. The charger is currently non-operative. There have been numerous conversations, both at the committee and Council level, regarding EV stations on City property. These conversations, to date, have not resulted in any new EV stations being installed. In 2013, Council authorized \$3,000 for the installation of a charging station in the City Hall parking lot along with applying for a grant through the "Reconnect California Grant Program". The total estimated installation cost was almost \$9,000 with the cost overage to be covered by the grant. The City's grant application was not funded and the project was shelved.

During the spring of 2015, the Mendocino Council of Governments (MCOG) hosted a series of workshops throughout the County (including one on June 2, 2015 in Fort Bragg) to discuss potential locations for EV stations. The "Mendocino County Zero Emission Vehicle (ZEV) Regional Readiness Plan" was presented during the workshops. City and MLT staff are using the Readiness Plan as a guide in siting this first round of EV stations in Fort Bragg. The City has an opportunity to have EV stations purchased and installed at no cost. The ongoing repair and maintenance and utility costs would be the City's responsibilities. There are several

scenarios which result in a variety of costs to the City for ongoing electrical use and maintenance.

The MLT has funds to purchase and install EV stations; however the number of stations depends on the type and cost of the chargers themselves as well as the cost to install the chargers.

Type of EV charger:

Currently, three “levels” of charging are available for electric cars.

- Level 1 charging is plugging your car into an ordinary household outlet (120v). Depending on the type of vehicle, these chargers can take up to 8 hours (overnight) to fully charge a car’s battery. Level 1 chargers are readily available in the commercial EV Charger market but they are essentially a regular household outlet.
- Level 2 charging is plugging your car into a 240v outlet or the type of outlet your household washing machine or clothes dryer utilizes. Depending on the type of vehicle, these chargers can take up to 3 or 4 hours to fully charge a car’s battery. Level 2 chargers can cost anywhere from \$500 up to \$6,000 depending on the amount of electricity (kW) used and the features.
- DC Fast Chargers are the fastest type of charging available. Depending on the type of vehicle, these chargers can fully charge a car in less than 30 minutes. DC Fast Chargers can cost, on average, \$35,000. The biggest challenge with installing a DC Fast Charger is that they operate with 440v power. Since there are no 440v electric lines in Fort Bragg, a step up transformer is required at a cost of approximately \$50,000 according to PG&E.

Through conversations with PG&E and the MLT, staff recommends Type II chargers for the City’s EV stations. Type II chargers will provide a quality, dependable resource for charging while fitting in budget and time constraints related to the purchasing, installation and ongoing maintenance of the EV stations.

Another consideration with regards to the type of EV charger is whether or not the use should be free, fee-based, or partially subsidized. There are several factors to consider when deciding on whether or not to utilize fee-based EV chargers:

1. Cost of electricity: In working with PG&E, it is estimated to cost approximately \$3,000 per charger per year. This number is based on two separate estimates:
 - a. PG&E estimates approximately \$2,238.92 per charger annually based on an average of 3 hours of use per day.
 - b. MLT, through their research of other publicly accessible charging stations, estimates approximately \$3,434.75 per charger annually based on an average of 8 hours of use on weekends and 4 hours of use on weekdays.

Without historical data, it is very difficult to determine an exact estimate of electricity usage and cost. However, staff feels comfortable with the estimation above and should the EV stations be installed, electrical use can be closely monitored.

2. On-going maintenance and servicing: Utilizing a charger which requires no fee is a simpler and less burdensome way of providing EV stations. No staff time is necessary to work with any vendors, payment programs and/or reporting. No contracts are necessary to administer the payment systems and related services. However, utilizing a

fee-based charging system would provide some, or all, of the necessary funding to pay for electricity use, ongoing maintenance and servicing, and possibly even replacement.

3. Budget implications: The MLT grant provides for the purchase, installation and a 5-year warranty on the chargers and related equipment. The warranty also includes monthly fees should the City move forward with the fee-based chargers. For at least the first 5 years, the City would only have to provide funds for electricity use and day-to-day wear and tear. However, the City may wish to consider some sort of capital fund to set aside money for the future replacement of the EV stations when they wear out. The EV stations being considered are robust and appropriate for coastal conditions and staff anticipates a moderate amount of servicing and maintenance on the physical EV stations and related equipment. Therefore, the main consideration with regards to budget implications are for electricity use and maintenance, repair and possibly replacement beyond the 5 year warranties.
 - a. The fee-based EV Stations being considered are flexible in how electricity is charged. The City has full control over this aspect of the stations and can change its methods at any time. Possibilities to charge for use include: by the hour, by the amount of electricity used, flat fee, time of day, specific drivers, etc.

Below is a pro and con list for utilizing fee-based EV stations:

Pro: Funding would be provided to offset electricity costs and ongoing maintenance of regular wear and tear.	Con: Providing free EV charging stations may help encourage EV usage, thereby reducing fossil fuel emissions.
Pro: People utilizing the stations would be less likely to leave cars unattended for long periods of time.	Con: Fee-based chargers may be less effective in fulfilling City Council Goal 3.0 "Establish Fort Bragg as a Leader in Sustainable Practices"
Pro: Collecting funds from users to cover EV charging station costs will not require appropriation of General Fund revenue for this purpose.	
Pro: EV owners receive a public subsidy by not paying gas taxes (for street and highway repairs). It may be perceived as inequitable to further subsidize EV usage.	

Based on the information above, staff is recommending installing the fee-based EV stations. This allows for the flexibility of charging at any point in time while if the non-fee-based stations are installed, it would difficult and more costly to change to charging for usage. In addition, fee-based stations can recover at least some of the estimated \$3,000 per year per charger cost of electricity plus maintenance expenses.

To strike a balance between encouraging use of electric vehicles and cost recovery, staff recommends programming the EV Stations to allow for one hour of free use at which point appropriate charges are charged to the user. Specifically, this accomplishes:

1. The City offering free EV charging as part of Council's goal of "Establishing Fort Bragg as a Leader in Sustainable Practices";

2. Encourages the user to move their car after one hour thereby allowing use by a broader audience;
3. Allows for some of the funding necessary to pay for the electrical use and maintenance costs;
4. Flexibility to raise or lower the cost of use after one hour in order to offset ongoing costs as well as the amount Council may designate to offset such costs.

Number of EV chargers and stations:

The type of chargers the City authorizes will determine the number of EV stations. Should the City authorize free EV stations, it is possible to install up to six (6) chargers in two locations. Should the City authorize fee-based EV stations, it is possible to install up to four (4) chargers in two locations. These numbers are due to the cost of the actual EV stations and the available MLT grant funds. The estimated cost of electricity for six chargers is \$18,000 annually. With four chargers, the estimated cost would be \$12,000 annually.

Staff recommends no more than four EV stations regardless of the type. This recommendation is based on minimizing the impacts to current parking availability in City and lots and allows for at least some cost recovery. A more modest start allows the City to work out the inevitable kinks in the system and prepare for expansion in the future.

The EV stations being considered (whether free or fee-based) would be two individual stations with two chargers at each station. Therefore, two locations are being considered for installation.

Location of EV Stations:

City staff has identified two locations for the EV Stations provided for in the MLT grant.

1. City Hall Parking Lot: Two spaces adjacent to the alleyway in the northeastern portion of the City Hall parking lot. The spaces would be within sight of Franklin Street enabling Police Officers to monitor the EV stations. Existing, overhead powerlines and a nearby utility pole make for a convenient connection point.
2. Footlighter's Parking Lot: Two spaces along the west side of the parking lot. This allows for easy access to current PG&E installed equipment located just to the south.

Other Considerations:

- Signage: Staff seeks direction on the type and number of signs desired for the EV stations. The MLT grant allows for \$500 per EV station for signage. Currently, the City is undergoing implementation of its sign wayfinding program. However, the encroachment permit has been submitted to CalTrans and does not include signage for EV stations. Therefore at least initially, signage would only be permitted on streets other than Main Street.
- Use Restrictions: Council should provide input on any restrictions of how EV stations will be used. For example: Should parking be limited to a specific amount of time. Should the EV chargers themselves be limited to a specific amount of time before "shutting off" and allowing other users an opportunity to charge their vehicles? Are there other ways to encourage parking/charging turnover in these spaces?
- Other current efforts are underway to install EV stations throughout Fort Bragg and adjoining coastal area. The MLT is working with State Parks and other private

businesses to install stations utilizing funds from the same grant as would provide the chargers on City property. State Parks is collaborating with the MLT to add EV charging stations at eight of the State Parks in Mendocino County. A site is planned for Harvest at Mendosa's in Mendocino as well as at the Caspar Community Center. Two additional sites are planned for the City of Willits. Each station is anticipated to have as many as two chargers. These stations are to be funded by a grant from the California Energy Commission (CEC).

- Mendocino Railway, working with TESLA Motors, is exploring the installation of TESLA's fast chargers in the Depot parking lot. Success of this partnership relies greatly on the estimated cost for installation and whether those costs are suitable to TESLA who would pay for the entire cost to purchase and install the stations.
- PG&E is launching a funding initiative sometime in 2017 to install EV stations throughout Northern California. While a timeline is unknown, Fort Bragg is on the list of cities showing interest in obtaining EV stations, possibly to be installed in one or two of the parking lots bordering Noyo Headlands Park. More details are forthcoming either late 2016 or early 2017.

RECOMMENDATION:

Receive report and discuss the different options and scenarios for installing and maintaining EV stations and provide direction to staff in preparation for a full discussion before the City Council at its October 11th meeting.

ATTACHMENTS:

1. Map of proposed EV station in City Hall parking lot (Parking Lot #1)
2. Map of proposed EV station in Footlighter's parking lot (Parking Lot #2)
3. Description/photos of proposed fee-based EV station
4. Description/photos of proposed no fee-based EV station
5. PG&E estimated electrical costs for EV stations
6. MLT estimated electrical costs for EV stations