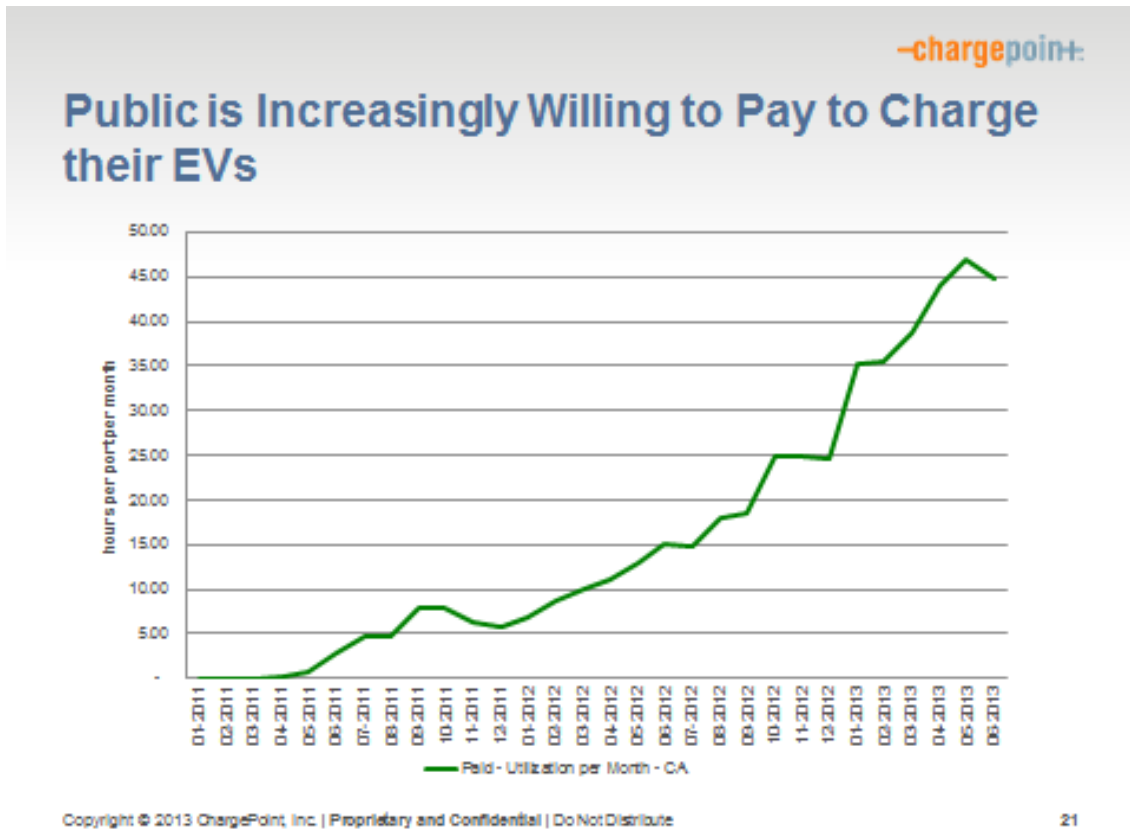




Fee Structure Recommendations for EV Charging

Charger Utilization Trends: Current trends in charger utilization support the increasingly self-supporting nature of public charging. On a statewide basis, ChargePoint has tracked steadily increasing utilization rates which have seen charger utilization growth at least keeping pace with rapid growth in the EV population. In the chart below, utilization has steadily increased from 5 hours a month at the beginning of 2011, when just a few EV models were on the roads, to nearly fifty hours per month toward the end of 2013, when more than a dozen EV models (and a cumulative 100,000 plus EVs) have been deployed. As these trends continue into 2014-15 and beyond, the great majority of site hosts will find that “charging for charging” will fully cover their operational and energy costs, and help fund the further expansion of their local charging networks.



Lessons Learned: Many of the public site hosts in the Bay Area that installed EV chargers in the 2010-2012 period opted to provide free charging during the first year, and in some cases provided free parking as well. While this may have been a helpful perk to encourage the adoption of EVs, the limitations of the free approach have become evident as EVs have become more ubiquitous. By adopting fee-based EV charging we are attempting to address the following issues:

1. **Charge at free station instead of home:** Charging stations may become over-utilized if drivers choose to charge at free public stations instead of charging at home. This can make the station unavailable to those who genuinely need charging.
2. **Convenience parking:** EV drivers who do not actually need additional charging sometimes park at a charger-equipped parking spot because it is the most conveniently available parking spot thus making it unavailable to other EV drivers in need of charging.
3. **Charging station hogging:** EV drivers leave their car parked and connected in a charger-equipped parking spot after their EV is fully charged making the charger unavailable to others.
4. **Operation and Maintenance Cost Recovery:** Site hosts are finding that operating and maintaining EV charging stations can be costly. These costs can be offset, at least partially, by a well-designed charging fee policy.
5. **Peak usage:** Site hosts have encountered the problem of very high demand for charging stations during certain periods of the day and week while at other times the stations go unused. By charging fees during peak times and lowering the fees during off-peak times driver behavior can be somewhat controlled.

The Bay Area Charge Ahead Project (BayCAP) recommended pricing plan is simple and has several core elements:

1. **Fee-Based Charging:** Site hosts are encouraged to set usage fees for use of the charger. This may or may not include separate charges for parking per the jurisdiction's usual parking policies. Fees may be calculated based on duration of stay, energy consumed (kWh), or a combination of the two. Fee-based charging should be calculated to at least pay for the energy consumed. It also may be beneficial to consider variable pricing based on time-of-day in areas where the jurisdiction is trying to encourage charging during off-peak periods for energy consumption and/or EV parking.

There are pros and cons for Time-based fees versus Energy Consumption-based fees.

Hourly Charging Fees

Pros:

- By charging a standard hourly fee the EV driver can easily calculate the amount of money that will be spent for a charging session.
- Fees continue to accumulate after the EV is fully charged which encourages drivers to move their EV thus making the charging station available to other EVs.

Cons:

- The hourly fee does not relate directly to energy consumed because different vehicles consume energy at different rates while charging. Consumption of energy varies from 1kW to 6.6kW. Drivers with low charging rate vehicles may feel the fees are too high and/or unfair.

Energy Based Fees

Pros:

- By charging a fee based on energy consumption the EV driver pays only for the electricity consumed during the charging session.
- This has the benefit of fees relating directly to energy costs which is more fair for drivers of low charging rate vehicles and ensures that drivers of high charging rate vehicles pay their fair share.

Cons:

- Once the EV is fully charged it can stay connected with no fees being accrued.
- The EV driver cannot easily predict the cost for charging since it is difficult to know how much energy the EV requires.

2. **Graduated Pricing Based on Duration of Stay**: Site hosts are encouraged to raise the fee for occupying the EVSE-equipped space by a sufficient increment to encourage turnover of the space and thus greater availability and utilization (in charging mode) for EV drivers. It is recommended that this approach be implemented after two to four hours of charging at the lower cost rate – particularly in cases where utilization rates are observed to be very high (70% or more) and available alternative charging facilities are limited. Many site hosts have chosen to substantially increase rates after the initial 2-4 hour period up to as much as \$5-\$20 per hour. It should be noted that this approach could also support free charging during the initial 2-4 hour period if the jurisdiction feels that it wants to encourage EV adoption but still maximize availability of charging stations.
3. **Time of Use Pricing**: Site hosts may also consider a lower evening or weekend rate for EVs (similar to most existing parking policies) to encourage responsible off-peak use. (In particular, lots proximate to multi-unit residential buildings could provide a lower-cost overnight rate with a higher daytime rate that incentivizes overnight EVSE users to make way for daytime visitors and commuters.) In addition to the lower evening or weekend rate it is also possible to remove Graduated Pricing policies during off-peak hours which would allow overnight charging.
4. **Initial Connection Fee**: One of the use patterns that have been observed in the early days of EV charging is that EV drivers who do not actually need to charge their vehicles will use an EV charging space because it is conveniently located and/or more available than other parking spots. One way to discourage this behavior is to charge an initial connection fee in addition to the Usage fees. A typical connection fee would be \$1.00 to \$2.00.
5. **EVSE Revenue and Cost Monitoring**: Pricing strategies should be reviewed on a periodic basis to ensure that expenses for sustaining charger operations are covered to the maximum extent feasible and appropriate. In most cases in the Bay Area, fees for charger operations set in the \$1 - \$1.50 range should be adequate for a well sited charger to cover energy costs, transaction fees, the ChargePoint network services fee, and (by Year 3) the *BayCAP – ABM Maintenance Plan*. In very rare cases where the charger is not yet being well-utilized, there may be a modest operating subsidy required.
6. **Signage and Enforcement**: As a complement to fee structures all charging station parking spots should have signs that reserve the parking spots for EVs that are plugged in and charging¹. Signs

should also show time limits (if any) and other relevant information. Active enforcement by local police is also encouraged. Note that there are California Vehicle Codes in place (CVC 22511.1) and local governments can establish their own codes in addition.

Recommended Guidelines

The BACC recognizes that not all parking properties have the same needs. Therefore there is no “one price fits all” or even a “one-policy fits all”. Instead we are proposing some guidelines to help local authorities set fee policies. Following the Recommendations section there is a snapshot of current pricing policies in the Bay Area.

1. BACC recommends charging a fee for EV charging at public parking properties.
 - a. Time-based fees are preferable over energy use-based fees (\$1-\$2/hour with 15 minute increments after the first hour).
 - b. Energy use-based fees are acceptable with Access Fees (see below). \$0.25-\$0.50 per kWh + Access Fee (see below).
2. BACC recommends Access Fees sometimes called “Connection Fees”
 - a. Recommended Access fees are \$1-\$2
 - b. Not necessary if a minimum 1-hour is established for time-based charging
3. BACC recommends the implementation of Escalation Fees when charging is complete for locations where higher turnover is desirable.
 - a. With time-based charging the Escalation Fee should be about 5 times larger than the normal hourly fee (example: \$1/hour for charging escalates to \$5/hour after vehicle is fully charged).
 - b. With energy-use based charging the Escalation Fee will switch from Energy-use base to Time-base at \$5-\$10/hour)
4. BACC recommends special “Off-Peak” fees for properties that want to encourage parking during non-business hours. This will vary by time and type of location. Off-peak fees are particularly useful to encourage MUD residents to park and charge overnight.
 - a. Lower time-based fees (possible flat fee structure)
 - b. Lower energy-usage fees, especially during Off-Peak energy periods
 - c. Exempt from Escalation Fees
5. Signage and Enforcement is recommended at all EV charging stations
 - a. Parking is reserved for Electric Vehicles that are actively plugged in and charging
 - b. Time limits of 2-4 hours (off-peak excepted)
 - c. California Vehicle Code 22511.1 and/or local codes
 - d. Consult the PEV Collaborative “Accessibility and Signage” guide for signage guidance¹

¹ <http://www.pevcollaborative.org/Policy-makers>

Survey of Existing EV Pricing Policies in the Bay Area
[sample – not complete]

Name	City	Access Fee	Hourly Fee	Power per kWh Fee	Escalation Fee	Off-peak	Notes
San Jose	San Jose	\$ 1.25		\$ 0.20			
Santa Clara Univ.	Santa Clara		\$ 2.00		\$ 3.00		after 4 hours
Santana Row	San Jose			\$ 0.49			
HGST-GO	San Jose		\$ 0.50				
Town of Los Gatos	Los Gatos	\$ 3.00					for 24 hours
Los Gatos Inn	Los Gatos	\$ 4.00					
Saratoga	Saratoga		\$ 1.00				
Cupertino City Hall	Cupertino		\$ 1.50				
Lynbrook HS	San Jose		\$ 1.50		\$ 5.00		after 4 hours
Yuba Dr.	Mountain View						
Strata	Mountain View		\$ 1.15				
Los Altos Plaza	Los Altos			\$ 0.32			
Los Altos Hills City Hall	Los Altos Hills			\$ 0.25			
Hewlett Packard	Palo Alto				\$ 10.00		per hour after 4 hours
Molly Stone Market	Palo Alto				\$ 5.00		per hour after 1 hour
Palo Alto USC	Palo Alto			\$ 0.17			
Stanford Shopping Center	Palo Alto			\$ 0.49			
Stanford PS-5	Stanford		\$ 2.00			\$ 1.00	4pm - 6am
Menlo Park	Menlo Park		\$ 1.50				

Attachment 3. Electric Vehicle Charging System Connection Charge

Glossary of Terms

1. Charging station: Electric Vehicle Charging Station
2. Charging ports: The point of connection between an EV and the EVSE.
3. Charging versus parking: An Electric Vehicle Charging Station is a source for refueling an electric vehicle similar to a gasoline refueling station. Parking is not the purpose of an EVCS.
4. DC Fast Charging: Direct Current charging port. Approximately 50 to 70 miles of range per 20 minutes of charging
5. EV: Electric Vehicle
6. Electric Vehicle Charging Station: The physical space occupied by a vehicle while connected to a port on an EVSE.
7. EVCS: Electric Vehicle Charging Station
8. EVSE: Electric Vehicle Supply Equipment
9. kWh: Kilowatt hour. The product of power in kilowatts and the time in hours.
10. Level 1 Charging: 120VAC charging port. Approximately 2 to 5 miles of range per 1 hour of charging
11. Level 2 Charging: 240VAC charging port. Approximately 10 to 20 miles of range per 1 hour of charging
12. PHEV: Plug-In Hybrid Electric Vehicle

Proposed Pricing Plan Summary:

Baseline fees for usage:

- Connection Fee of \$2.00 to be assessed each time a station is connected to by the user
- Usage Fee of \$1.00 per hour assessed per hour of charging station connection
- Additional fees after four-hour time limit for all charging:
- Citation Fee for violating time limit, as enforced by the GS - Parking Program
- Escalation fee of \$10.00/hour assessed for each hour of connection beyond the time limit allowed for at that charging station

Example:

At the proposed rate, a typical charging station user would incur a cost of \$6.00 for 4 hours of use at a County station.

Labor - network costs allocated per station (without Intern)	Per Station		
	Per Year	Per Month	Per Day
	\$ 244.93	\$ 20.41	\$ 0.67
Hardware and Software	Per Station		
	Per Year	Per Month cost	Per Day
Cord, LCORE Level 2 (3 year life)	\$ 600.00	\$ 50.00	\$ 1.64
Control Head (3 year life)	\$ 1,133.33	\$ 94.44	\$ 3.11
Warranty and Software Support	\$ 215.00	\$ 17.92	\$ 0.59
Subtotal	\$ 1,948.33	\$ 162.36	\$ 5.34
Electricity	Per Station		

	Per Year	Per Month	Per Day
Electricity usage (kWh)	1189	99.1	3.26
Electricity cost (\$)	\$ 225.98	\$ 18.83	\$ 0.62
	Per Station		
	Per Year	Per Month	Per Day
	\$ 2,419.25	\$ 201.60	\$ 6.63
	Per Station including Intern Resource		
	Per Year	Per Month	Per Day
	\$ 5,019.25	\$ 418.27	\$ 13.75

Electric Vehicle Charging Infrastructure Connection Charge Scenarios (Excluding Intern Support)

Event	Price	4 hr. "shift"	All Day'er
Connect	\$ 2.00	\$2.00	\$2.00
1st Hour	\$ 1.00	\$1.00	\$1.00
2nd Hour	\$ 1.00	\$1.00	\$1.00
3rd Hour	\$ 1.00	\$1.00	\$1.00
4th Hour	\$ 1.00	\$1.00	\$1.00
5th Hour	\$ 10.00		\$10.00
6th Hour	\$ 10.00		\$10.00
7th Hour	\$ 10.00		\$10.00
8th Hour	\$ 10.00		\$10.00
9th Hour	\$ 10.00		\$10.00
10th Hour	\$ 10.00		\$10.00
		\$6.00	\$66.00
Past 1 yr. network cost		\$66,379.00	
Fleet Stations	18	\$42,672.22	
Non-fleet stations	10	\$23,706.79	
Sessions in this past 1 yr.		5917	14.4 mTCO2e
2015 Fleet sessions		1400	5.0
2015 Non-fleet sessions		3866	9.4
% Non-Fleet sessions in 2015		65.3%	
Avg. daily sessions per station per day		0.5	
kWh in this last 1 yr.		33,303	

Usage Scenario - public stations only	Potential Revenue	Delta
All 4 hr. shifts	\$23,196.00	-\$510.79
75%:25% 5 hour	\$28,028.50	\$4,321.71
75%:20%:5% 6 hour	\$28,995.00	\$5,288.21
75%:10%:10%:5% 7 hr.	\$31,894.50	\$8,187.71
All 8 hr. shifts	\$255,156.00	\$231,449.21

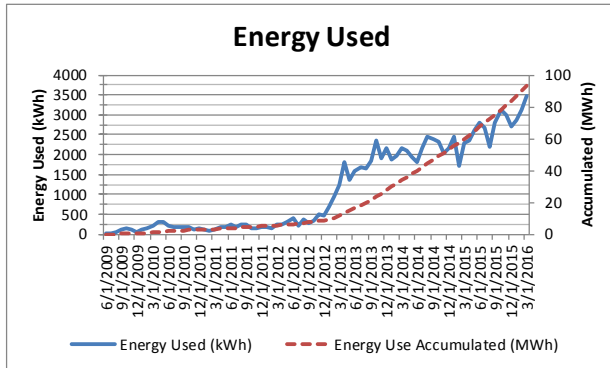
EV Adoption Trends:

EV adoption trends in Sonoma County show similar increases to those of the Bay Area, with the number of Clean Vehicle Rebates issued to county residents increasing by over 500% between December 2011 and

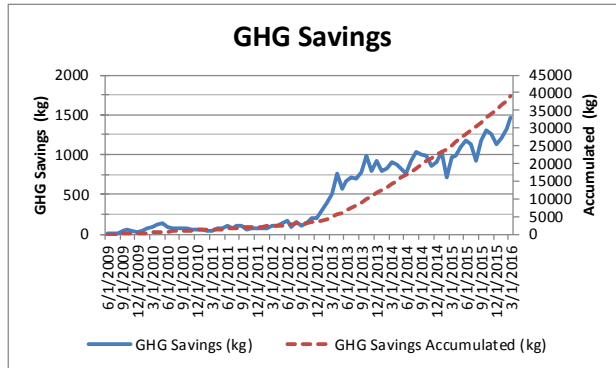
December 2012, and again by 168% between December 2012 and December 2013. Charging data from Sonoma County’s network supports the growing need for an expanded, robust EV charging network in the county. The average number of unique drivers using the existing network of 25 County-owned charging stations each month increased from 17.6 in 2012 to 54 in 2013, a growth of 206%, and the average number of monthly charging sessions increased by over 227% from 2012 to 2013. As this trend continues, the county will require an expanded network of EV charging stations to meet demand.

County of Sonoma Electric Vehicle Program Statistics

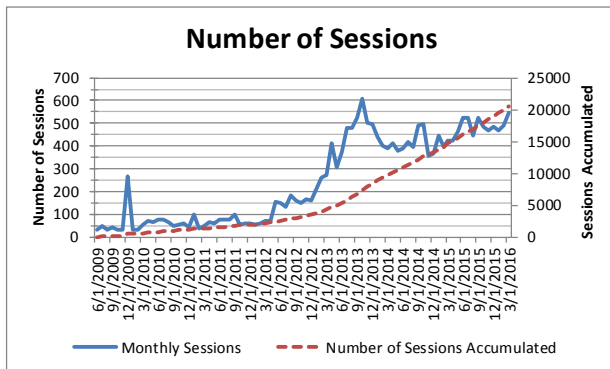
Includes Fleet, Employee, and Public Use -- Updated 2016-04-12



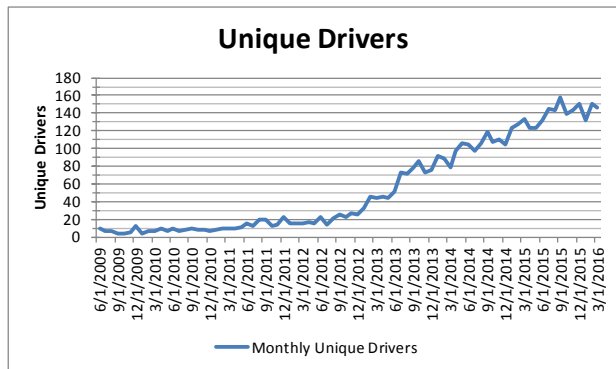
March 2016 Energy Use: 3485.15 kWh



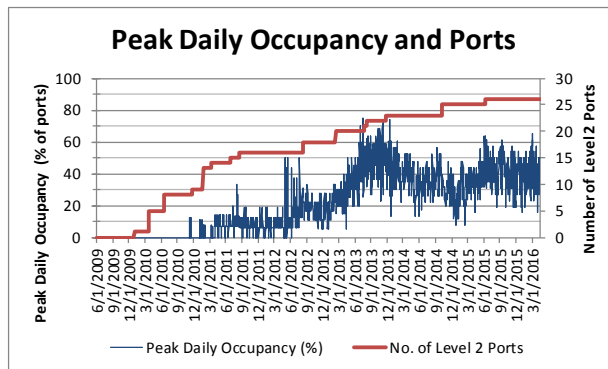
March 2016 GHG Savings: 1463.76 kg



March 2016 Sessions: 548 sessions



March 2016 Unique Drivers: 146 drivers



March 2016 average Peak Daily Occupancy: 43.7%
 March 2016 No. of Level 2 Ports: 26

Sonoma County Operated Publicly Available Charging Stations - Currently Active

Station Location	Address	Number of Stations	Charging Cost
Administration Building	575 Administration Drive, Santa Rosa, CA, 95403	3	FREE
La Plaza Building	2300 County Center Drive, Santa Rosa, CA, 95403	3	FREE
Doran Beach Regional Park	201 Doran Beach Road, Bodega Bay, CA, 94923	2	FREE
Santa Rosa Memorial Veterans Hall	1351 Maple Avenue, Santa Rosa, CA, 95404	4	FREE

Total 12

Additional Municipal Publicly Available Charging Stations within Sonoma County - Currently Active

Station Location	Address	Number of Stations	Charging Cost
Cotati City Hall	201 West Sierra Avenue, Cotati, CA, 94931	6	FREE
City of Cotati	960 E Cotati Avenue Cotati, CA 94931	2	FREE
Healdsburg City Hall	401 Grove Street, Healdsburg, CA, 95448	6	Station Parking \$0.50/hr 7:05am to 5:55pm, Energy FREE
Keller Street Parking Garage	Western Avenue and Keller Street, Petaluma, CA, 94952	4	Station Parking \$1.00/hr Minimum \$2.00
Community Center	320 N. McDowell Blvd Petaluma, CA 94952	4	Station Parking \$1.00/hr Minimum \$2.00
City Hall	11 English Street Petaluma, CA 94952	4	Station Parking \$1.00/hr Min \$2.00
City of Petaluma	210 Lakeville Street Petaluma, CA 94952	2	Not Specified. Available 24hrs per day
Rohnert Park - Civic Center	500 City Center Drive Rohnert Park, CA 94928	2	\$1.75/hr \$1.75 minimum charge
Rohnert Park - Cotati Regional Library	6250 Lynne Conde Way, Rohnert Park, CA, 94928	2	\$1.75/hr \$1.75 minimum charge

Santa Rosa City Hall #1 + #2	100 Santa Rosa Avenue Santa Rosa, CA 95404	4	Station Parking \$1.00/hr Min \$2.00 & Max \$24.00 for every 24 hrs
City of Santa Rosa MSC-North #3	55 Stony Point Road Santa Rosa, CA 95401	2	Min \$2.00 & Max \$24.00 for every 24 hrs
City of Santa Rosa Parking Garage 12	555 First Street Santa Rosa, CA 95401	4	Station Parking \$1.00/hr Min \$2.00 & Max \$24.00 for every 24 hrs
City of Santa Rosa Parking Garage 9	97 D Street Santa Rosa, CA 95404	6	Station Parking \$1.00/hr Min \$2.00 & Max \$24.00 for every 24 hrs
City of Santa Rosa Parking Lot	201 3rd Street Santa Rosa, CA 95401	2	Station Parking \$1.00/hr Min \$2.00 & Max \$24.00 for every 24 hrs
Rialto Cinemas Sebastopol	6868 McKinley Avenue, Sebastopol, CA, 95472	6	FREE
Sonoma Plaza	152 E. Napa Street Sonoma, CA 95476	4	FREE
Sonoma County Airport, Short-Term Parking	2200 Airport Boulevard, Santa Rosa, CA, 95403	4	Station Parking \$1.25/hr Min \$2.00 & Max \$15.00 for every 8 hrs
Windsor Green, Huerta Gymnasium	9291 Old Redwood Highway, Bldg. 200, Windsor, CA, 95492	6	FREE
Total		70	

Privately Installed Publicly Available Charging Stations within Sonoma County - Currently Active

Station Location	Address	Number of Stations	Charging Cost
Amy's Kitchen Drive Thru	58 Golf Course Drive W. Santa Rosa, CA 94928	2	FREE
Benziger Family Winery	1883 London Ranch Road Glen Ellen, CA 95442	1	Unspecified. Available 24hrs a day

Big John's Market	1345 Healdsburg Ave Healdsburg, CA 95448	8	\$0.25/kWh
BMW Hansel	2925 Corby Avenue Santa Rosa, CA 95403	4	FREE
Bodega Bay Lodge	103 CA-1 Bodega Bay, CA 94923	1	Not Specified
CASA Grande High School	333 Casa Grande Road Petaluma, CA 94954	4	Station Parking \$1.20/hr Minimum \$3.00
Clos Du Bois Winery	19410 Geyserville Avenue Geyserville CA 95441	4	FREE
Coddington Mall	733 Coddington Mall Santa Rosa, CA 95401	2	Not Specified
CT Plaza	1420 Guerneville Road Santa Rosa, CA 95403	2	FREE
De Loach Winery	1791 Olivet Road Santa Rosa, CA 95401	1	FREE *
Deer Creek	N McDowell Blvd Petaluma, CA 94954	10	Station Parking \$1.25/hr Min \$1.25
Dry Creek Inn	198 Dry Creek Road Healdsburg, CA 95448	3	\$2.00/hr for first 6 hrs \$5.00/hour thereafter. Minimum \$2.00
E&M Electric	126 Mill Street Healdsburg, CA 95448	4	24 hours daily; network card required
East Washington Plaza	401 Kenilworth Drive Petaluma, CA 94952	4	\$0.59 kwh Available 24hr/day *
East Washington Plaza	401 Kenilworth Drive Petaluma, CA 94952	10	FREE. Telsa SuperChargers *
El Pueblo Inn	880 West Napa Street Sonoma, CA 95476	2	Station Parking \$2.00/hr
eMotors	6791 Sebastopol Avenue Sebastopol, CA 95472	1	FREE 24 hours daily: Level 1 station available 8am-5pm only: use code 3227 for access
Enriquez Estate Wines	3062 Old Adobe Road Petaluma, CA 94952	1	Not Specified. Available 10am- 6pm daily
Fairfield Inn & Suites	1101 Gravenstein Hwy South Sebastopol, CA 95472	2	Not Specified.

Flamingo Hotel	2777 4th Street Santa Rosa, CA 95405	5	\$2.00/hr for first 4 hrs. \$5.00/hr thereafter. Min \$2.00
Francis Ford Coppola Winery	300 Via Archimedes Geyserville, CA 95441	4	FREE 11a, to 9pm daily
The Gables Wine Country Inn	4257 Petaluma Hill Road Santa Rosa, CA 95404	1	
Graton Casino / Self Park DC 2	4799 Langner Ave Santa Rosa, CA 95407	4	DC Fast Charger FREE One Station is for Valet Use Only
Hansel Ford	3705 Corby Avenue Santa Rosa CA 95403	1	FREE. Call for Availability *
Hansel VW	2987 Corby Avenue Santa Rosa, CA 95403	2	FREE. Call for Availability *
Hudson Street Wineries	428 Hudson Street Healdsburg, CA 95448	1	11am -5pm Th-M,; see front desk for passcode
Hyatt Vineyard Creek Hotel and Spa	170 Railroad Street Santa Rosa, CA 95401	2	Not Specified
Kashia Band of Pomo Indians	1400 Guerneville Road Santa Rosa, CA 95403	2	FREE
Kashia Band of Pomo Indians	38810 Tin Barn Road Cazadero, CA 95421	2	FREE
KIA of Santa Rosa	1255 Santa Rosa Avenue Santa Rosa, CA 95404	2	FREE DC Fast Chargers
MFCT1 MFCT Parking	918-966 Transport Way Petaluma, CA 94954	2	FREE
Nissan of Santa Rosa	1275 Santa Rosa Avenue Santa Rosa, CA 95404	3	Not Specified. Available during business hours
North Bay Nissan	1250 Auto Center Drive Petaluma, CA 94952	3	Not Specified. Available 24hrs a day
Petaluma Office Building	1465 N. McDowell Blvd Petaluma, CA 94954	4	FREE During business hours of 7am to 6pm
Petaluma Premium Outlets	2200 Petaluma Blvd N Petaluma, CA 94952	3	\$0.49/kWh Available 24hrs/day *
Petaluma Village Premium Outlets	2000 Petaluma Blvd. North Petaluma, CA 94952	2	\$0.49/kWh Available 24hrs/day *

Ridge Vineyards	650 Lytton Springs Road Healdsburg, CA 95448	2	FREE 1 Tesla Charger and 1 Level 2 Charger
Santa Rosa Community Market	1899 Mendocino Avenue Santa Rosa, CA 95401	1	FREE
Santa Rosa Plaza	1071 Santa Rosa Plaza Santa Rosa, CA 95401	7	\$0.49/kWh
Schulz Museum	2301 Hardies Lane Santa Rosa, CA 95403	2	\$1.50/hr First 3 hrs. \$5.00/hr thereafter
SOMO Village Event Center	1400 Valley House Drive Rohnert Park, CA 94928	2	FREE
Sutter Santa Rosa Regional Hospital	30 Mark West Springs Road Santa Rosa, CA 95403	2	FREE *
Target Corp	401 Keniworth Drive Petaluma CA 94952	2	FREE for first 2 hours. \$2.00/hr thereafter
Twomey Cellars	3000 Westside Road Healdsburg, CA 95448	2	Not Specified. Telsa Charger *
Vintners Inn	4350 Barnes Road Santa Rosa, CA 95403	1	Not Specified. Tesla Charger *
Walgreens	3093 Marlow Road Santa Rosa, CA 95403	1	\$2.00/hr *
Whole Foods Market	390 Coddington Mall Santa Rosa, CA 95403	4	Not Specified. 2 DC Fast Chargers. 2 Level 2 Chargers. *
Total		135	

* Charge cost data needs to be confirmed as accurate



County of Sonoma Agenda Item Summary Report

Clerk of the Board
575 Administration Drive
Santa Rosa, CA 95403

Agenda Item Number:
(This Section for use by Clerk of the Board Only.)

To: Sonoma County Board of Supervisors

Board Agenda Date: May 17, 2016

Vote Requirement: Majority

Department or Agency Name(s): General Services

Staff Name and Phone Number:

Keith Lew: 707-565-3193

Liz Yager: 707-565-6167

David Worthington: 707-565-2809

Supervisorial District(s):

All

Title: County Employee Clean Commute Transportation Initiatives

Recommended Actions:

1. Conduct a Public Hearing and adopt a Resolution establishing electric vehicle charging system connection charges for the purposes of EV infrastructure cost recovery, system administration, maintenance and network expansion at County owned and leased facilities.
2. Approve multiple actions associated with the County's Clean Commute and Electric Vehicle Charging Station initiatives

Executive Summary:

Staff is requesting the Board to conduct a Public Hearing and adopt a Resolution establishing electric vehicle charging system connection charges. Initially, the charges consist of a \$2.00 connection charge as well as a usage charge of \$1.00 per hour. This model charges the station user for energy consumed during their charging session as well as infrastructure administration and support costs. Furthermore, the GSD - Parking Program will enforce the station time limit for charging station access. Current non-fleet charging stations already include signage limiting station occupancy to four hours. Violators will be charged \$10.00/hour for each hour of connection beyond the time limit allowed at that charging station and may also be subject to a charging station citation. These charges are within the cost of providing the service, and revenue will be used for the purposes of EV infrastructure cost recovery, system administration, maintenance and network expansion at County owned and leased facilities.

This item also provides the Board with a report focused on County Employee Clean Commute Transportation Initiatives: their origin, current condition, and opportunities for future initiatives and expansion of the existing infrastructure.

Expansion of Workplace Charging for Electric Vehicles

The County and its partners at the Sonoma County Water Agency, Sonoma Clean Power, and the Regional Climate Protection Authority agree that the rapid adoption of the electrification of transportation is an essential step in energy independence and addressing climate change.

- A. Upon Board approval, GSD shall have delegated authority to participate in the County of Sonoma in the U.S. Department of Energy (DOE) Workplace Charging Challenge. The US Department of Energy created a Workplace Charging Challenge with a goal of having 500 U.S. employers join the initiative as partners by 2018. Partners set a minimum goal of providing charging for a portion of plug-in electric vehicle (PEV) driving employees and a best practice goal of meeting all employee demand. See Attachment 4, US Department of Energy Workplace Charging Challenge Factsheet for more information, and Attachment 5, US Department of Energy Workplace Challenge Pledge form.
- B. With Board delegation of authority to the GS Director, an Electric Vehicle Charging System Connection Charge program will be implemented.

There are currently 20 charging station ports in the County's non-fleet network. These stations were installed to support the adoption of EVs in Sonoma County as a mechanism to address climate change. They are dedicated to non-fleet use near parking areas utilized by both County employees and public visitors. As with most public site hosts in the Bay Area, County-operated non-fleet charging stations have been initially available for use without charge. Staff research confirms that only 27% of 2532 total publically accessible charge points located throughout the Bay Area are free. Although there are a wide range of connection charges, staff recommend the Board adopt EV connection rates similar to those implemented by jurisdictions who participated in the Local Government Electric Vehicle Fleet Project including; Alameda County, Sonoma County, Sonoma Water District, Transportation Authority of Marin, City of San Francisco, City of San Jose, City of Fremont, City of Concord, City of Oakland, City of Santa Rosa, and the Bay Area Climate Collaborative.

There are multiple objectives of the pricing plan including: (1) to create an incentive that favors longer-distance EV drivers who rely on public charging opportunities and minimize charging by EV drivers who do not require charging station access as part of their daily commute; (2) to add a cost to create prioritized access that helps to ensure that stations are better reserved for EV drivers who depend on them instead of drivers looking for a short "opportunity charge" who then leave their car sitting at the station longer than necessary, blocking access for others; (3) to add a time limit for charging to create more equal access for EV drivers by increasing utilization and opportunity for access; (4) to recover cost of electricity, administration, maintenance, and operation of the network; and (5) to generate revenue towards expansion of the program and infrastructure.

The proposed pricing plan includes financial components and time limitations. The pricing plan consists of a \$2.00 connection charge as well as a usage charge of \$1.00 per hour. This model charges the station user for energy consumed during their charging session as well as infrastructure administration and support costs. Furthermore, the GSD - Parking Program will enforce the station four-hour time limit for charging station access. Current non-fleet charging stations already include signage limiting station occupancy to four hours. Violators will be charged \$10.00/hour for each hour of connection beyond the time limit allowed for at that charging station and may also be

subject to a charging station citation.

The estimated annual revenue potential from non-fleet charging is approximately \$23k depending on utilization. All jurisdictions report a temporary drop in utilization with the implementation of connection charges then a return to prior utilization levels. This revenue will be used to offset the administration and life cycle costs of the existing County EV charging network as well as potentially contribute to the cost of purchasing and installing additional EV charging stations across various County facility locations. See Attachment 3, Electric Vehicle Charging System Connection Charge, and Attachment 6, Bay Area Climate Collaborative EV charge structure recommendations for more details.

Finances:

- Revenues will be deposited into the GSD Internal Service Fund, and there will be no increase in net County cost as a result of implementation.
- Under the authority of the General Services Director, funds are to be used for prescribed commute and transportation programs including and not limited to: maintenance, upgrades and deposition of existing stations, expansion of the network, and other employee commute emission reduction programs.

C. With Board approval, GSD will continued efforts for Electric Vehicle Charging Infrastructure Development.

The 2015 Triennial Code Adoption Cycle will culminate with the publication of the 2016 California Building Standards Code (Title 24, California Code of Regulations). The 2016 Code will be published on or before July 1, 2016 and will go into effect on January 1, 2017. This code will include electric vehicle charging station installation regulations. Under the new building code electric vehicle charging infrastructure focuses on the number of “ports” available; a port services a station, the location of the vehicle while charging. The publication and adoption of the new building codes will provide the clarity and foundation required for sound expansion and development of publically available (including workplace), electric vehicle charging throughout California. Only publically available charging stations are required to comply with 11B-228.3.2 of the CA Building Code; whereas Fleet only charging stations are exempt. For a list of current publically available workplace EV charging stations operated by the County that do or will meet building code standards; a list of possible locations for future publically available electric vehicle charging stations; and more detail on locations, see Attachment 7, Electric Vehicle Charging Station Network Locations. Before development, the potential of these locations require additional analysis of:

- Access to electricity
- Capacity of subpanel and substation loads
- Complexity and cost of adjusting the landscape and ancillary features of the charging station to accommodate people with disabilities
- Comprehensive development of the system across the multiple sites owned and leased by the County
- Impacts to the electrical grid infrastructure, peak demand and load profile
- Likelihood of use
- Permanency of site

County Employee Clean Commute Transportation Initiatives Update:

The Board of Supervisors has a long history of successful Climate Action including the 2005 Community-Wide Greenhouse Gas (“GHG”) Emission Reduction Target of 25% below 1990 levels by 2015, the 2006 Municipal Operations - Climate Protection Action Plan (“CPAP”) which resulted in a GHG emissions reduction in County operations by more than 20% below year 2000 baseline emission levels. See Attachment 8, County of Sonoma Climate Action Summary Update for more detail.

Transportation via County Fleet and Employee commute are two major components of County emissions. Fleet Operations efforts have been exemplary as demonstrated by recognition of County of Sonoma as having the #1 Government Green Fleet in North America. See Attachment 9, Sonoma County Ranked #1 Government Green Fleet in North America for more information.

The County has made significant progress in reducing its carbon footprint in the building and fleet sectors, and it is crucial that we intensify our focus on reducing the negative impact of our commute patterns. Employee commute behaviors are responsible for 50% of County emissions.

County Employee Clean Commute:

There are two significant motivations for an effective employee commute management program: (1) reducing commute related *emissions*, and (2) as a mechanism to alleviate anticipated *parking compaction* as the County Administration Center develops.

To align with state emission reduction and climate action goals, the County must dramatically reduce emissions attributed to employee commute. County of Sonoma employees collectively spend approximately \$3 million in fuel costs per year for the commute and emit over 13,000 mTons CO₂¹ e.

The County of Sonoma currently practices a number of clean commute activities including and not limited to the bus ride program, annual commute survey and emissions reporting, Bike to Work Day, electronic bicycle locker infrastructure, and the non-fleet electric vehicle charging infrastructure. The sum total impact of these efforts may have contributed to the behavioral changes of employees commuting to work in single occupancy vehicles, as seen by a drop from 91% in 2000 to 84% in 2015, a 7% reduction. This translates into a 14% achievement of the 2010 to 2020 emission reduction target of 4,748 mTCO₂e.

D. With Board approval, GSD will explore funding opportunities for programs to reduce County employee emissions such as:

- a. Participation in the U.S. Department of Energy (DOE) Workplace Charging Challenge.
- b. Development and deployment of the GS Department Telework pilot program into a County Telework Policy.
- c. Enhancement of the One Day Clean Commute Outreach Campaign through resource commitment and development of the outreach plan delivery.
- d. Participation in the Bicycle Rack Voucher Program through the Bay Area Air Quality Management District.

¹ mtCO₂e = metric tons of carbon dioxide equivalents. Equivalent CO₂ (CO₂e) is the concentration of CO₂ that would cause the same level of radiative forcing as a given type and concentration of greenhouse gas. Examples of such greenhouse gases are methane, perfluorocarbons, and nitrous oxide.

- e. Creation of a Bike Share Program at and around the County Administration Center.
 - f. Development of a Guaranteed Ride Home Program for County employees
 - g. Coordination of vanpools using County-owned vehicles for the transport of groups of employees.
 - h. Coordination with Sonoma-Marín Area Rail Transit (“SMART” train) to ensure the train is highly accessible to employees through scheduling, bicycle locker resources, shuttle services, etc.
 - i. Expansion of the Workplace Charging - Electric Vehicle Charging Infrastructure (“EVCI”) network.
- See Attachment 10, Employee Commute Emissions Reduction Program Overview for more detail.

E. With Board approval, GSD will coordinate with partners, such as Sonoma Clean Power, in the advertisement of consumer support services through the Division and PACE financing options for EV charging stations, solar PV, and battery storage systems.

Prior Board Actions:

Please refer to Attachment 11. Prior Board Actions

Strategic Plan Alignment Goal 2: Economic and Environmental Stewardship

The sustainable development of the electric vehicle charging infrastructure of the County will continue to encourage the transition of transportation modes to more environmentally-clean electric vehicles which will aid in the reduction of greenhouse gases.

Fiscal Summary - FY 15-16

Expenditures		Funding Source(s)	
Budgeted Amount	\$	County General Fund	\$
Add Appropriations Req'd.	\$	State/Federal	\$
	\$	Fees/Other	\$
	\$	Use of Fund Balance	\$
	\$	Contingencies	\$
	\$		\$
Total Expenditure	\$	Total Sources	\$

Narrative Explanation of Fiscal Impacts (If Required):

Implementation of the electric vehicle connection charge will provide cost recovery toward the existing expense of operating the non-fleet charging network beginning in Fiscal year 16/17 with an estimated revenue of \$23,000.

Staffing Impacts			
Position Title (Payroll Classification)	Monthly Salary Range (A – I Step)	Additions (Number)	Deletions (Number)
Narrative Explanation of Staffing Impacts (If Required):			
Attachments:			
<p>Attachment 1: Resolution establishing Electric Vehicle System Connection Charges</p> <p>Attachment 2: Public Notice</p> <p>Attachment 3: Electric Vehicle Charging System Connection Charge</p> <p>Attachment 4: US Department of Energy Workplace Charging Challenge Factsheet</p> <p>Attachment 5: US Department of Energy Workplace Challenge Pledge Form</p> <p>Attachment 6: Bay Area Climate Collaborative EV Charge Structure Recommendations</p> <p>Attachment 7: Electric Vehicle Charging Station Network Locations</p> <p>Attachment 8: County of Sonoma Climate Action Summary Update</p> <p>Attachment 9: Sonoma County Ranked #1 Government Green Fleet in North America</p> <p>Attachment 10: Employee Commute Emissions Reduction Program Overview</p> <p>Attachment 11: Prior Board Actions</p>			
Related Items “On File” with the Clerk of the Board:			