



## MEMORANDUM

**To:** SCTA/RCPA Staff  
**From:** Eliot Rose  
**Date:** February 2017  
**Re:** Sonoma County – Electric Vehicle Readiness Status and Recommendations

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### Introduction

This memorandum summarizes the ICF understanding of electric vehicle (EV) readiness actions that local governments in Sonoma County are currently undertaking, describes how these actions are working based on conversations with staff, and offers recommendations for the Sonoma County Transportation Authority (SCTA) and the Regional Climate Protection Authority (RCPA) to advance EV readiness in the county in collaboration with their stakeholders.

### Current status of local EV readiness

Table 1 below summarizes the current status of EV readiness activities in Sonoma County. Throughout this document, we use the following categories when describing EV readiness actions:

- **Charging requirements** to pre-wire or install chargers at new development. We note whether these policies are mandatory or voluntary.
- **Regulations** on charging vehicles, including time limits, fees for using publicly-owned chargers, and adopted design guidelines for new installations.
- Actions to **streamlined permitting** for electric vehicles, such as making permits available over the counter, reducing fees, or posting guidance online. We note whether efforts to streamline permitting are complete or in progress.
- **Procurement** of publicly-operated chargers or fleet EVs. We note the number of chargers and fleet EVs reported by each jurisdiction, as well as policies that encourage procurement of fleet EVs.
- **Collaborations** with other local governments on efforts to promote EVs, share knowledge, or apply for funding. We note whether collaborations are currently active or occurred in the past

Table 1 also describes the **level of interest** among staff and decision-makers in advancing EV readiness. The information in the table comes from a survey of local government staff in Sonoma County, as well as follow-up interviews and review of documents provided by staff.



Table 1: Summary of Current Local EV Readiness Actions

	Charging requirements	Regulations	Streamlined permitting	Procurement	Collaboration	Level of interest
<b>Cloverdale</b>	Voluntary		In progress			High
<b>Cotati</b>			Complete	7 chargers, 1 fleet EV	Past	Moderate
<b>Healdsburg</b>		Time limits and fees		6 chargers, 1 fleet EV, fleet policy	Past	Moderate
<b>Petaluma</b>	Mandatory	Fees		9 chargers, 4 fleet EVs	Past	
<b>Rohnert Park</b>				Chargers, fleet policy		
<b>Santa Rosa</b>	Voluntary	Time limits and fees	Complete	13 chargers , 8 fleet EVs, 4 chargers in progress	Active	High
<b>Sebastopol</b>	Voluntary			3 chargers	Past	
<b>Sonoma City</b>			In progress	2 chargers		
<b>Sonoma County</b>	Mandatory	Fees, design guidelines		38 chargers, 55 fleet EVs, 18 chargers in progress	Active	High
<b>Windsor</b>				2 chargers, 12 fleet EVs, fleet policy	Past	

Below we discuss progress to date and opportunities for future action for the actions summarized in Table 1.

## Charging requirements

### *What are local governments doing?*

Several local governments in Sonoma County have been adopting policies that encourage or require EV new developments to provide charging opportunities through a variety of plans and processes.

Examples include Cloverdale, which has adopted design guidelines that encourage chargers at commercial parking lots. Its parking and circulation guidelines for commercial development state, “Parking lots should provide electric car battery charging stations.”<sup>1</sup> Meanwhile, Petaluma’s General Plan includes policies to “Include parking spaces with electric vehicle recharging facilities” along North McDowell Boulevard, to “Require a percentage of parking spaces in large parking lots or garages to provide electrical vehicle charging facilities,” and to “Require electric vehicle charging and alternative fuel facilities at all new and remodeled gas stations.”<sup>2</sup> However, the plan does not state what percentage of spaces should provide chargers. Similarly, Sebastopol’s General Plan has a policy to “Support the establishment and expansion of a regional network of electric vehicle charging stations and encourage the expanded use of electric vehicles, and calls for the City to, Establish standards and

<sup>1</sup> <http://cloverdale.net/DocumentCenter/Home/View/470>

<sup>2</sup> <http://cityofpetaluma.net/cdd/pdf/general-plan-may08/general-plan-may08.pdf>



requirements for electric vehicle parking, including the installation of electric vehicle charging stations, in new development projects.”<sup>3</sup>

In other cases, local governments have addressed charging through their building codes, adopting codes that require that parking spaces be pre-wired for charging to reduce the cost of further installations. Prior to 2017, Cloverdale and Santa Rosa both adopted the voluntary standard from the California Green Building Code (CalGreen) to require a certain number of parking spaces in new nonresidential development to be pre-wired parking spaces. At non-residential developments, pre-wiring is required for a portion of total parking spaces, as summarized in Table 2.

*Table 2: CalGreen non-residential EV pre-wiring requirements<sup>4</sup>*

<b>Total Number of Parking Spaces</b>	<b>Number of Required EV Charging Spaces</b>
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

#### *How is it working so far?*

Even when standards are voluntary or vague, they provide a basis for local governments to negotiate with developers to install chargers during discretionary review. This has resulted in chargers being installed in high-priority locations in Cloverdale and Sebastopol. For example, Sebastopol required a new pharmacy in a high-priority charging location to provide charging to mitigate GHG impacts based on its CAP. Staff report that many properties are pleased to have chargers once they are installed because they see benefits due to high demand for charging in Sonoma County.

Some planners in cities with policies that generally encourage charger installations (such as those in Petaluma and Sebastopol) report that it would be preferable to have specific requirements for the number and type (e.g., pre-wired spaces or actual chargers) of charging spaces located at different land uses or in different locations. Even the most developed state-of-the-practice requirements, which specify that a specific percentage of parking spaces in new development must provide charging or be pre-wired, are a blunt instrument with which to create new chargers in the locations where drivers need them most. These requirements only apply to new development; high-priority locations for public

<sup>3</sup> [http://sebastopol.generalplan.org/sites/default/files/CCReview\\_GeneralPlan\\_Nov-16.pdf](http://sebastopol.generalplan.org/sites/default/files/CCReview_GeneralPlan_Nov-16.pdf)



charging are often in built-out areas where all potential sites are at existing development. Furthermore, standards like those in CalGreen typically have uniform requirements for all new commercial development. Planners know that it is most important to install charging at key locations (downtowns, near transit stations), or land uses (retail, movie theaters, event spaces), but do not have guidance on what level of charging to require at these locations. Finally, pre-wiring requirements, like those in CalGreen, do not guarantee that chargers will be installed; they only reduce the cost of installing chargers if the property owner chooses to do so.

Taken together, these issues mean that cities and towns in Sonoma County may not see a significant increase in charging opportunities due to implementing CalGreen or policies with similar general requirements to pre-wire spaces in new parking lots for charging. In communities with strong markets for new development, it may be worth conducting in-depth studies to develop stronger requirements in key areas such as downtown centers, areas near transit, or areas with significant new office development). In communities that expect less new development, local governments may be better off relying on policies that lay the groundwork for adding chargers through discretionary review, or through conducting outreach to property owners in high-priority charging locations to promote the benefits of installing chargers at existing development.

## Regulations

### *What are local governments doing?*

Several local governments have adopted fees and/or time limits for publicly-operated chargers. Fees and time limits help to create turnover, ensuring that chargers are available for vehicles that need them. Fees also allow local governments to recoup the costs of installing, operating, and maintaining chargers.

- Santa Rosa and Petaluma charge \$2 to connect to a charger plus \$1 per hour of charging.
- Healdsburg charges \$0.50 per hour to charge.
- Santa Rosa and Healdsburg have adopted four-hour time limits for charging vehicles. Santa Rosa reported that the police recently began enforcing these time limits as chargers became more utilized to ensure their availability.
- Sonoma County charges \$2 to connect to a charger, \$1 per hour for the first four hours, and \$10 per hour thereafter.

The County of Sonoma has also adopted design guidelines for all public charger installations in the county.<sup>5</sup> Though many local governments have time limits ranging from two to four hours on charging vehicles at public chargers, staff unevenly enforce these limits, with some hardly enforcing them at all, and others only enforcing them in locations where people have reported incidences of non-charging vehicles using spaces.

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<sup>5</sup> 2011 version available at [http://www.sonoma-county.org/prmd/docs/misc/ev\\_prog\\_guidelines.pdf](http://www.sonoma-county.org/prmd/docs/misc/ev_prog_guidelines.pdf); as of early 2017 the County is in the process of updating these guidelines



### *How is it working so far?*

Fees allow local governments to recoup some of the cost of operating chargers, including electricity and maintenance. The County of Sonoma has conducted a study of how revenues from charging fees compare to the costs of operating and maintaining the public chargers it has installed, which are mostly level 2 chargers. The County of Sonoma decided to set its fees in order to recoup the costs of operation. The trade-off is that the fees necessary to offset operating costs mean that public charging may be comparable to or significantly more expensive on a per-mile basis than using gasoline or charging at home. For instance, the average cost of driving today—at a gasoline price of \$3.00 per gallon and a fuel economy of 25–30 miles per gallon is 10–12 ¢/mile. In order to maintain competitive pricing with respect to gasoline, the charge for electricity would have to be in the range of 29–40 ¢/kWh. However, public charging is not just competing with the price of gasoline, but also the price of charging at home, which is typically in the range of 10–20 ¢/kWh. In some cases, it may be more cost-effective to consider installing level 1 chargers, which have lower operational and maintenance costs, and generally have lower installation costs.

Staff at local governments in Sonoma County are aware that unevenly enforcing restrictions time limits on charging spaces may lead to situations where drivers in need of a charge are not able to use a public charger because the space is occupied by a non-charging vehicle. However, local governments that have taken more aggressive steps to enforce time limits and charging restrictions, such as Santa Rosa, report that it is not always easy for enforcement officers to distinguish charging and non-charging electric vehicles. Fees that escalate rapidly as vehicles are connected to a charger for longer durations, such as the County of Sonoma's, may be a more effective way of encouraging turnover and ensuring that chargers are available. In the County of Sonoma's fee decision also highlighted that the General Services Department Parking Program will enforce the station time limit for charging station access. In addition to be charging \$10.00/hour for each hour of connection beyond the time limit allowed, drivers may also be subject to a charging station citation.

Local Government staff throughout Sonoma County jurisdictions report a desire for consistency in fees and time limits among EV drivers in Sonoma County, and this is happening to a certain extent. For example, Petaluma copied Santa Rosa's previous fee schedule, albeit without comparing revenues to costs. In order to create a consistent set of charging fees and regulations, it would be helpful for local governments convene to discuss experiences enforcing time limits and coordinate on a cost and revenue study similar to the one conducted by Sonoma County to set consistent fees and potentially establish revenue-sharing agreements to make sure that fees cover the costs of providing public chargers.

### *Streamlined permitting*

#### *What are local governments doing?*

Local governments in Sonoma County have been taking a hodgepodge of actions to streamline permitting for residential electric vehicle charger installations. Cloverdale is considering expedited permitting for residential charger installations, similar to the expedited permitting process that it has in place for small residential rooftop solar systems. Cotati has posted guidance and a load calculator to



help residents collect the necessary information to get over-the-counter permits for residential charger installations.<sup>6</sup> Santa Rosa reports that residential EV installations generally receive over-the-counter permits.

Sonoma County jurisdictions are in the process of complying with Assembly Bill 1236, which requires cities or counties to enact an ordinance to streamline the permitting process for charger installations and limits discretionary review of permit applications for chargers, meaning that most permits will be issued over the counter. Jurisdictions with a population of 200,000 or more residents had to adopt the ordinance by September 30, 2016. All other jurisdictions must adopt the ordinance by September 30, 2017<sup>7</sup>. As the only jurisdiction with over 200,000 people in Sonoma County, the County of Sonoma was first in adopting a resolution in response to AB 1236<sup>8</sup> met all of the bill's legislative requirements, including accepting and approving electric vehicle charging station permit applications electronically, developing a checklist of requirements for applicants seeking expedited review, and authorizing the Building Official to administratively approve complete applications. The County previously reviewed applications and issued permits for residential chargers over the counter or within the next working day; under the resolution it is streamlining permits for both residential and commercial installations.

The building departments from the remaining Sonoma County jurisdictions with less than 200,000 residents are in the process of reviewing a template resolution and checklist.

#### *How is it working so far?*

Local governments that had taken steps to streamline permitting generally felt that their actions worked well for their planning and permitting staff, and did not report any complaints about the permitting process from residents. However, none of the local governments with whom we spoke had conducted a more comprehensive review of how satisfied property owners were with their permitting process, nor had they examined data to see if streamlining had resulted in an increase in permitted charger installations. Without this information, it is difficult to gauge how well these streamlining measures are working for property owners in Sonoma County who are looking to install chargers.

#### Procurement

##### *What are local governments doing?*

Nearly every local government in Sonoma County operates at least one charging station, and most have purchased EVs for use in their fleets. The fleets strategy discusses fleet vehicles in more detail; we focus on charging stations here. Most publicly-operated chargers are on publicly-owned land and are available to the general public (as opposed to fleet vehicles).

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<sup>6</sup> <http://ci.cotati.ca.us/docs/EV-Charging-System-SFR-11-04-13.pdf>

<sup>7</sup> Cal. Gov. Code § 65850.7(g)(1)

<sup>8</sup> [http://sonoma-county.granicus.com/MetaViewer.php?view\\_id=2&event\\_id=659&meta\\_id=201155](http://sonoma-county.granicus.com/MetaViewer.php?view_id=2&event_id=659&meta_id=201155)



### *How is it working so far?*

The local government staff we interviewed generally felt that public charging stations were an important means of promoting EVs by creating visible charging opportunities. In most cases, staff reported that publicly-operated chargers were well-utilized, though several mentioned instances of underutilized chargers. Interviewees mentioned that they could benefit from more guidance on siting and installing public charging, especially with regard to the following issues:

**ADA accessibility:** CalGreen states that wherever there are chargers, at least one of them should be ADA-accessible.<sup>9</sup> ADA accessible charging spaces are wider than conventional spaces to allow for a clear path of access for people in wheelchairs, and have level slopes, higher clearances, and markings designating them as accessible.<sup>10</sup> Before the 2016 California Building Standards Code update that discusses EV infrastructure and accessibility, local governments had a difficult time with understanding what was required or not required.

**Access to electric supply:** Interviewees also mentioned challenges with estimating the cost of connecting chargers to an electrical supply in locations that are not pre-wired for charging. One interviewee mentioned an instance where the city had underestimated the cost of installing charging because it had assumed that chargers could be connecting to an existing power supply.

## Collaboration

### *What are local governments doing?*

Most local governments in Sonoma County have participated in the Sonoma County EV Partnership throughout the years. Santa Rosa, Sonoma County Water Agency and County of Sonoma are currently participating in MTC's Local Government Fleet Demonstration project, and County continuously partners with other jurisdictions throughout the county and the region to pursue grant funding for chargers.

### *How is it working so far?*

The main benefit that interviewees reported experiencing from collaboration was that they were able to submit more competitive applications and apply for larger funding amounts when they collaborated with other jurisdictions to pursue grant opportunities. There is a high level of interest among many local governments in Sonoma County in collaborating to advance key aspects of EV readiness. We discuss these opportunities in the following section.

## Opportunities to advance local EV readiness

### Develop an implementation plan for the charging station siting analysis

Local governments in Sonoma County are very interested in developing requirements to ensure that chargers are available in high-priority locations. Most requirements related to EV charging, including those that are included in the update to the California Building Code, only focus upon new development, and require pre-wiring spaces, which does not necessarily provide chargers in the short-term. Sonoma

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<sup>9</sup> CalGreen, Section 11B-812.

<sup>10</sup> CalGreen, Section 11B-228.3



County can go beyond these requirements by identifying high-priority locations for chargers and a plan to reach the required number of charging stations based on the siting plan that ICF is currently developing for Sonoma County. The implementation plan would consider how the different mechanisms by which chargers can be installed (requirements for new development, incentives to install chargers on existing development, publicly-operated chargers on public property, property owners installing chargers by their own initiative) can be collectively leveraged to create the level of charging envisioned in the siting analysis.

#### *Short-term actions*

- Ensure that the siting analysis includes sufficient detail (e.g., fine-scale analysis of priority charging locations, consideration of land uses that are most likely to see high demand for charging) to identify key locations for charging and specify the amount of stations that are needed in these areas.
- Conduct an opportunity analysis of key charging locations that considers factors such as opportunities for new development, publicly-owned land that could host chargers, and property owners that may be interested in installing chargers.

#### *Medium-term actions*

- Use the opportunity analysis as a basis for creating overlay zones that with increased charging requirements for new development.
- Foster collaboration among local governments on joint funding applications for chargers on publicly-owned land in key charging locations.
- Develop funding sources and/or outreach materials that can be used to support/encourage chargers at existing developments in key locations. The vast majority of parking spaces, and therefore opportunities for charging, are located at existing developments, and local governments have little influence over these developments, so incentives and outreach will likely be necessary to create sufficient charging opportunities in many locations.

#### *Develop siting guidance for charger installations*

Local governments in Sonoma County need guidance on several key issues related to siting charging stations, including connecting to an electrical supply and ADA accessibility. These issues have a significant impact on the cost and feasibility of charging stations. These guidelines may also be useful to private property owners looking to install charging stations. Some of these issues are addressed by Sonoma County's Design Guidelines, while others are addressed through other documents. SCTA/RCPA could compile the most relevant pieces of these documents and work with local governments to fill gaps.

#### *Short-term actions*

- Compile data on the cost components of local EV installations to produce more reliable cost estimates for different site types.
- Update the Sonoma County EV Charging Station Program and Installation Guidelines to incorporate the most recent guidance and policies.



### Develop consistent fees and time limits for publicly-operated charging

Across Sonoma County, drivers face inconsistent fees and regulations when using public charging. Some local governments offer charging for free, while others charge up to \$3 to connect and additional fees for each hour of charging. Some places have no time limits on charging, or do not enforce posted time limits, while others enforce 4-hour limits on charging vehicles. A consistent set of regulations for public charging stations would make it easier for drivers to know what to expect. It could also help local governments ensure that fees will cover the costs of operating and maintaining chargers rather than just copying their peers' fee schedules, as some local governments currently do. Furthermore, collecting information on the costs of operating chargers across the county may help identify best practices to help local governments keep costs down. In order to ensure that fees are set at a level that users are willing to pay, this effort should also consider the results from a survey of Sonoma County EV drivers (see the following recommendation).

#### *Short-term actions*

- Collect data from local governments across the county (and potentially from other areas to identify best practices) on the cost of operating and maintaining public chargers and on charger usage, including:
  - Labor associated with charger planning and installation
  - Cost and useful lifetime of charger hardware
  - Cost of software support
  - Electricity consumption and costs
  - Average and peak charger utilization
  - Average and maximum length of charging sessions
- Convene a group of staff to develop a consistent charging schedule.

#### *Medium-term actions*

- Develop revenue-sharing arrangements between local governments if necessary to create consistent fees while accounting for different costs between jurisdictions.

### Conduct a survey of Sonoma County EV drivers

A survey of EV drivers could help inform next steps on many of the recommendations discussed above. Potential questions could cover the following topics, with example questions for each topic:

- Usage, siting, and demand:
  - How frequently do you charge your electric vehicle...
    - ...at home?
    - ...at work?
    - ...at publicly-provided charging stations (such as shopping centers or public buildings)?
  - Are there particular locations where it would be useful for you to have more charging opportunities?
  - How do you access information about charger locations?



- Willingness to pay:
  - How much are you willing to pay for a charge while your EV is parked at work?
  - How much are you willing to pay for a charge to “top off” your EV when you are running errands or parked at a public location?
- Permitting processes:
  - Have you installed a charger at your home?
  - If yes, what type of charger did you install?
  - Did you seek a permit for the charger installation?
  - If yes, please rate your satisfaction with the following aspects of the permitting process:
    - Convenience
    - Clarity
    - Time to issue permits
    - Required fees
- ADA accessibility:
  - When driving your EV, do you use a Disabled Person Placard?
  - Does your EV have Disabled Person License Plates?
  - Do you have mobility issues that make it challenging for you to use non-ADA-accessible charging equipment?

An online survey would likely get the largest response. This survey could be distributed in cooperation with CARB and the Clean Vehicle Rebate Project (although it is important to note that this group is frequently contacted to participate in surveys, so we do urge some caution), through EV interest groups such as EV owners associations (e.g., North Bay Electric Auto Association, SF BayLEAFS, the San Francisco Bay Area Nissan Leaf Owners), informational resources for EV owners such as Sonoma Clean Power’s Drive Electric page and the Sonoma County Electric Vehicle Trail site, and car dealerships or repair shops that specialize in electric vehicles, as well as through events for electric vehicle drivers.

#### *Short-term actions*

- Develop and circulate survey via EV interest groups in Sonoma County
- Incorporate findings as SCTA/RCPA addresses other recommendations above