

Background for Making Your EV Action Plan

The links and information in this document will help you complete the EV Action Plan template from the [EV Charge SF program workbook](#).

Introduction

Developers in San Francisco and across California are at the forefront of building the first generation of buildings for which a future of widespread EV ownership not only is possible, it is expected.

Installing electric vehicle (EV) chargers in a multifamily or commercial property parking facility is different from clean energy investments like LED lighting. It's more like installing a clean energy gas pump on your property. And it raises new questions, like: *Who owns it? Is it free to tenants? Who maintains it? Why bother?*

EV Charge SF's "EV Action Plan" is structured to help new projects develop their own vision for how their site will facilitate EV charging both at initial occupancy and over time as EV ownership and demand for charging increase. The informational resources listed below are organized around six key topics covered in EV Charge SF's "EV Action Plan Template:"

1. Meeting EV Charging Demand
2. Stakeholders
3. Code
4. Electrical Considerations
5. Ownership and Billing Model
6. Vendors

In addition to the resources referenced in this document, be sure to check out EV Charge SF's "Fact Sheets" on the [program webpage](#), each of which addresses a key topic in the planning, procurement, and operation of EV charging for sites like yours.

EV Charging Development – Overview Resources

These first resources provide overall guidance for developing EV charging in multifamily (multi-unit or "MUD") residential and commercial sites. Because your project is new

construction, the sections on physical obstructions and inadequate electrical capacity, happily, are mostly not applicable.

[Multi-Unit Dwelling Electric Vehicle Charging](#)

SanDAG and Plug In San Diego (by Center for Sustainable Energy)

A clear streamlined view of MUD EV charging challenges and solutions.

[Plug-in Electric Vehicle Charging Infrastructure Guidelines for Multi-Unit Dwellings](#)

California Plug-In Electric Vehicle Collaborative

[Plugging in at Work: How to Install, Share and Manage EV Charging Stations](#)

California Plug-In Electric Vehicle Collaborative

An overview of workplace charging and an extensive resource list by specific EV charging topic.

[Planning Your Installation](#)

CALeVIP

A practical overview and links to added resources, such as Electric Vehicle Charging 101.

[11 tips on how best to install EV charging stations in multifamily housing](#)

Paul Bergeron, in Multifamily Design+Construction, June 23, 2020

1. Meeting EV Charging Demand

According to the [California Energy Commission](#), 363,000 electric vehicles have been purchased in the San Francisco Bay Area, as of late 2021. While EVs made up 12.4% of California light duty vehicle sales in 2021, [Governor Newsom's recent executive order](#) aims to make that 100% by 2035.

In addition to estimating how many EV owners will use your project's parking facility, the "[How Do Multi-Unit Dwellings Become PEV Ready?](#)" resource suggests asking:

- Does the property owner want EV chargers to serve multiple residents?
- Are there parking restrictions that limit or govern the installation of EV chargers? (E.g., condo owners may install their own EV chargers in their assigned parking spaces if provided with an electrical outlet.)
- Can EV drivers use Level 1 (120 volt) charging or is Level 2 (240 volt) charging needed?

EV Charge SF's technical experts suggest that, while only a few individuals may be asking for charging now, projects should consider projections for EV ownership in your location and plan for the future. With new car sales at 20% or more in certain cities, sales of electric vehicles (EVs) are poised to see significant growth in the next five years in California. An MUD or commercial property owner could easily see the number of EV-driving tenants double or triple

in the next 24 months alone. How quickly will demand for charging from your tenants scale from 5-10% of parking spaces to 25% or more? This question is important because it is always less expensive to plan and deploy EV charging infrastructure once (e.g., to avoid trenching or increasing electrical capacity), even if you do not plan to install a large number of chargers right away.

2. Stakeholders

Industry experts stress the importance of conferring with key stakeholders for your EV Action Plan. These include, but are not limited to, the following:

CEO, President, or Director of Sustainability

EV charging investments are at once both strategic and tactical. The strategic aspects should be well considered by the CEO, senior marketing executives, and/or director of sustainability. While facilities and operations managers will help a project navigate price and technology issues, the [bigger strategic questions](#) of business model, links to marketing, etc., are essential for the investments to make sense to the project team from the design stage through value engineering and into the operations phase.

Chief Financial Officer (CFO)

In any endeavor, someone has to make sure the numbers line up. How can the CFO ensure that your chosen EV business model “pencils out”? What might be the long-term tangible results—for example, increase in property values?

Facilities & Operations

Once the big-picture questions are addressed, it falls to the facilities/operations manager to get things done. Once EV supporting equipment is installed and deployed, the organization must choose someone to oversee the ongoing operations—often an administrative assistant or accounting manager.

3. Code

A clear understanding of [San Francisco’s EV Readiness code](#) requirements will simplify your project’s design decisions – and will clarify the baseline for EV Charge SF incentives. Look for the *Fact Sheet: San Francisco’s EV Readiness Ordinance* on the [program webpage](#) (coming soon).

EV Charging, both now and in the future, also need to meet accessibility codes. Please refer to the *Fact Sheet: Accessibility For EV Charging* on the [program webpage](#) (coming soon).

4. Electrical Considerations

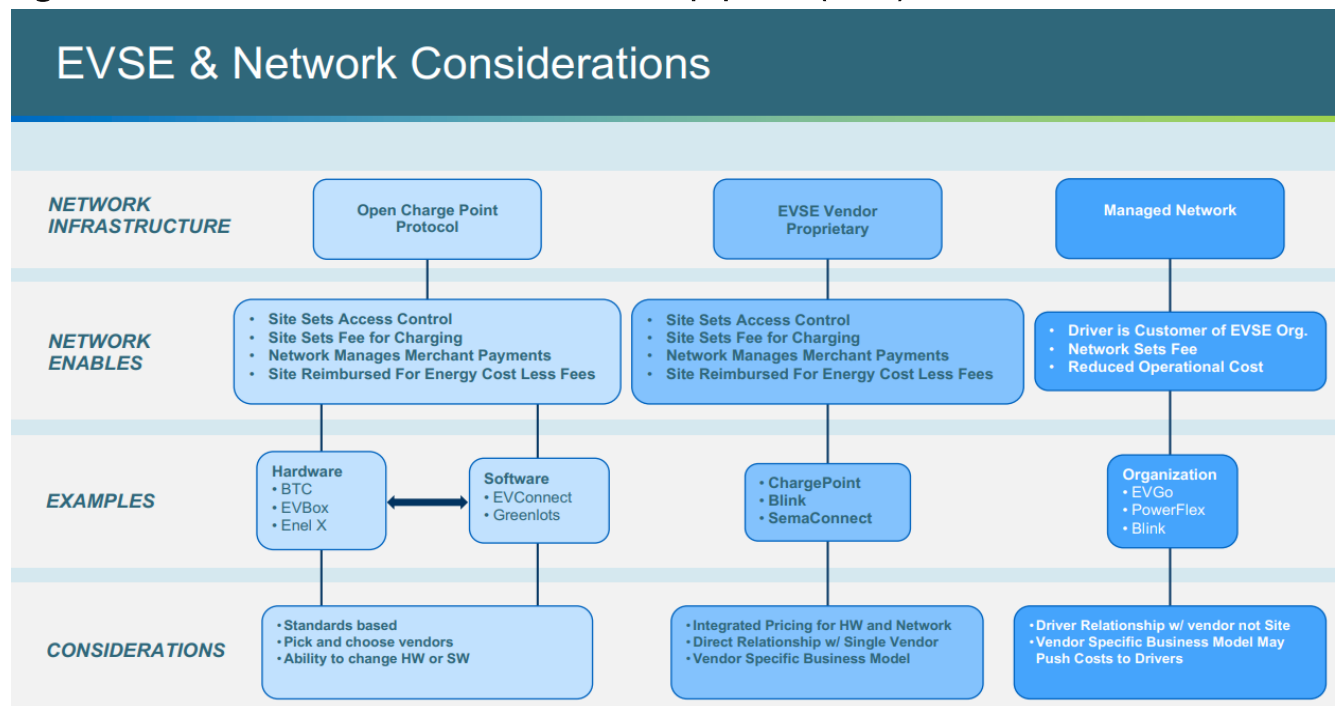
In addition to the program’s **free technical assistance**, EV Charge SF has developed information resources for electrical system design decisions related to EV charging; these include resources to help project teams realize the expanded EV charging potential of the Code’s mandated EV capacity, and related topics. Please refer to *Fact Sheet: Automatic Load Management*, *Fact Sheet: Electrical Considerations*, and *Fact Sheet: How Do Cars Charge* on the [program webpage](#) (coming soon). For the difference between electricity supplied from a shared electrical source versus separately metered EV charging, please refer to: [Multi-Unit Dwelling Electric Vehicle Charging](#),

5. Ownership and Billing Model

Perhaps the biggest difference for placing EV charging in multifamily and commercial properties when compared to private garages is the ownership and billing method decision. Again, the program’s **free technical assistance** may help project teams make an informed decision on this issue. Please consult *Fact Sheet: Ownership, Management, and Billing* on the [program webpage](#) (coming soon).

Figure 1 illustrates your project’s EV charging network communications options. The figure also offers a way to sort through the abundance of industry players you may encounter when planning your EV charging enterprise.

Figure 1: Network Considerations for EV Service Equipment (EVSE)



Source: EV Charging Pros

In addition, [this brief article](#) by [Touchstone Cooperatives](#) provides a handy introduction to ownership, cost allocation and EV charging/parking management policies for multifamily properties. For example, the article asks: “Will there be time limits in place to encourage people to move their vehicle once charging is complete?” Answering such simple questions may inform downstream operational considerations or, potentially, an upstream design decision about a shared EV charging approach versus individual charging.

6. Vendors

EV Charge SF's eligibility for EV Service equipment (EVSE) is based on the [CALeVIP eligible equipment list](#). CALeVIP's website also serves as a helpful list of the major EVSE industry vendors who have EV charging equipment that qualifies for EV Charge SF incentives.

Selecting an EV vendor has at least as many considerations as buying a car – with the added elements that some car lots will only lease their cars, and some will sell you a chauffeur service while you provide the parking space. Many vendors of electric vehicle service equipment and charging networks now compete in the market. Project sponsors have many options to consider for metering, user experiences, financial models, and station aesthetics.

Features vary across chargers, but they can generally be characterized as either low feature (basic), medium feature (smart), or high feature (intelligent or networked) charging stations. Basic charging stations have basic safety features, charge status lights, and will do charging at a single level. Smart charging stations have more enhanced displays, timers and external communication software. The intelligent or networked chargers have all the features of a smart charger, but also offer credit card or RFID card readers, cellular communication capabilities, and the ability to communicate with other stations close by.

Industry experts advise to not rush to pick an EVSE vendor. Instead, assess your charging infrastructure capabilities and requirements before choosing one. It can be difficult to compare charging stations against each other. Manufacturers, distributors, and industry vendors often do not publish price lists. Specific site configurations for single or dual stations, wall or bollard mounts, length of charging cords and other features will influence pricing, as will maintenance and other requested services.

Additional Resources

- For more info and resources about EVs in San Francisco, visit the Department of the Environment's [Clean Fuels and Vehicles webpage](#).
- Bay Area Air Quality Management District's [Electric Vehicle Resource Center](#) provides links to +20 EV resources and websites and resources.
- [DriveClean.ca .gov](#) is the California Air Resources Board's website with EV resources and related organizations.

Contact Us

For more information about EV Charge SF's technical assistance or other program resources, please contact program staff at: PowerPrograms@sfwater.org .