San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Code Guidance for EV Readiness

What to Know About EV Codes for Your Development

- CALGreen and the San Francisco Green Building Code determine the required number and types of EV charging infrastructure a project must install at parking spaces onsite.
- The requirements are combinations of EV Capable, EV Ready, and EV Ready with EV Chargers.
- The mix of EV space types has evolved over time with regular updates to the building codes; developers should refer to the code requirements in place at the time of project permitting.
- Developers should consult the published state and local code requirements applicable to their project for specific details and seek clarification from the designated building department officials as needed.

Why Understanding Building Codes Matters for EV Charging

Building codes provide guidelines for the design and construction of new buildings and major alterations and additions of existing buildings. In California, the Title 24 Green Building Standards Code, or CALGreen, contains mandatory specifications for EV charging infrastructure for the planning and design of projects. San Francisco's Green Building Code (SFGBC) also contains local amendments specific to projects within the County.

CALGreen and the SFGBC specify the types of EV charging infrastructure required and the number of spaces by type for residential and non-residential projects, plus other design considerations for those spaces. EV Charge SF provides incentives for infrastructure installed by projects that go beyond the code minimum requirements.

Building codes in California are updated on a three-year cycle, with minor "intervening" cycle updates midway between those cycles. The applicable code cycle is determined by the code requirements in effect when a project is submitted for permitting.

Code Terminology for EV Charging Spaces

CALGreen defines key terms for the types of EV charging infrastructure required at a certain number of spaces. Understanding the different types of EV charging spaces is critical to designing your project and assessing potential beyond code incentives.

- **EV Capable Space:** A parking space with electrical panel space and load capacity to support a branch circuit and necessary raceways (e.g., empty conduit), both underground and/or surface mounted, to support EV charging.
- **EV Ready Space:** A parking space provided with a branch circuit, any necessary raceways, both underground and/or surface mounted, to support EV charging, terminating in a receptacle, outlet, or a charger.

- **EV Ready Space with EV Chargers (Electric Vehicle Supply Equipment, EVSE, Installed):** An EV Ready Space equipped with a Level 2 EV charger.

Generally, EV Capable or EV Ready Spaces are specified to be designed for a 40A (Level 2, or L2) EV charging circuit.

Evolution of EV Codes in San Francisco

With triennial and intervening code cycle updates, the requirements for projects have evolved over time – including the definitions upon which those requirements are built. The table below provides a simplified summary of the new construction code requirements over time. Developers should consult the SFGBC and CALGreen publications applicable to their project's code cycle to confirm specific requirements and details.[1]

	SF EV Readiness Ordinance	2022 CALGreen	2022 CALGreen Intervening	2025 CALGreen*
Applicable Permit Dates	Jan 2018 – Dec 2022	Jan 2023 - June 2024	July 2024 – Dec 2025	Jan 2026 – Dec 2028
Multifamily Requirements (% of parking spaces)	**EV Capable:** 10% **EV Ready:** 10% **EVSE Installed:** 0%	**EV Capable:** 10% **EV Ready:** 25% (Low Power L2) **EVSE Installed:** 5%**	**EV Capable:** 0% **EV Ready:** 40% (Low Power L2) **EVSE Installed:** 10%	**EV Capable:** 0% **EV Ready:** 100% (Low Power L2) **EVSE Installed:** 25% (common area/ unassigned parking)
Non-Residential Requirements (% of parking spaces)	**EV Capable:** 10% **EV Ready:** 10% **EVSE Installed:** 0%	**EV Capable:** 15% **EV Ready:** 0% **EVSE Installed:** 5%***	**EV Capable:** 15% **EV Ready:** 0% **EVSE Installed:** 5%***	Office/Retail **EV Capable:** 5% **EV Ready:** 0% **EVSE Installed:** 15% All Other Occupancies **EV Capable:** 10% **EV Ready:** 0% **EVSE Installed:** 10%

*While the requirements of this future code cycle have been formally approved, they have not been officially published by the State and will not go into effect until January 1, 2026. Future changes to this code cycle may be considered during an upcoming intervening cycle and may go into effect on July 1, 2027.

**For multifamily projects with fewer than 20 dwelling units, the 5% EVSE Installed Spaces requirement does not apply.

***For non-residential projects with fewer than 200 parking spaces, calculations are not based on a percentage but instead reference a step-function table. Please refer to the applicable SFGBC publication for precise requirements.

Note: For hotel/motel developments, see specific requirements in CALGreen Chapter 4 (Residential Mandatory Requirements).

Alterations and Additions

While the building code is primarily focused on design requirements for new construction projects, certain alterations or additions of existing buildings also trigger requirements for EV charging infrastructure. Generally, these

[1] In addition to the links to the ordinance and code language (which can be dense reading), the EV Charge SF program has developed guides to understanding the 2019 and 2022 EV Readiness requirements, including San Francisco's code amendments. These guides are available upon request by emailing PowerPrograms@sfwater.org.

requirements only apply to the areas of the building that are impacted by the alteration or addition. The table below shows the triggers and requirements in the current 2022 CALGreen code:

Building Type	Alteration/Addition Triggers	EV Infrastructure Requirement
Multifamily	• New parking added • Electrical or lighting systems added or altered in parking facilities and requires a building permit	10% of the total number of spaces added or altered to be EV Capable Spaces
Non-Residential	• Construction includes power supply increase to an electric panel as part of parking addition/alteration • New solar PV installed covering parking • Additions of 1,000+ sq ft or alterations valued at $200,000+ and requires power supply increase to electric panel	Comply with new construction requirements for spaces added or altered

Notable Code Provisions

As of July 2024, there are several important measures within the code that developers should consider in designing their EV charging plans:

- **Direct Wiring:** This multifamily measure requires that EV charging infrastructure installed at assigned parking spaces be connected directly to the corresponding dwelling unit's electrical panel.[2] This design feature allows an EV space's charging energy use to be tied to the dwelling unit's utility meter, as opposed to a common building meter, or house meter. Through direct wiring, residents can often access lower cost electricity and building owners can avoid paying monthly Operation & Maintenance or networking contracts. Installing direct wiring may require project designers to think critically about dwelling unit metering and panel locations in relation to parking spaces. (See Section 4.106.4.2.2, 1 (c) – "Receptacle power source")
- **Power Allocation Method:** The non-residential code now provides developers with some flexibility in determining the types of EV charging equipment they install for required EVSE Installed Spaces through an alternative calculation compliance pathway. This allows developers to substitute Lower Power Level 2 receptacles or Direct Current Fast Chargers for the standard Level 2 chargers by using an equivalent amount of electrical capacity. (See Section 5.106.5.3.6 Electric vehicle charging stations – power allocation method)
- **Automated Load Management Systems (ALMS):** Both multifamily and non-residential codes include provisions to allow for ALMS to reduce the overall electrical capacity needed. This can allow for more charging spaces to be installed with the available capacity than if installing the standard 40A Level 2 charger. For more information, see the Power Sharing for More EV Stalls Fact Sheet on the EV Charge SF website.
- **Connector Types:** The current multifamily code requires a minimum of 50% of installed EV chargers to be equipped with J1772 connectors. Beginning in 2026, developers can choose any mix of J1772 or J3400 connectors. Most major automakers have announced plans to transition their charge-ports on their new vehicles to accept the J3400 connector type (also known as the North American Charging Standard or NACS) in model years 2026 or later. (See Section 4.106.4.2.2, 2. EV ready parking spaces with EV chargers)

[2] Note: The CALGreen code states that direct wiring would not be required if determined to be infeasible by the project builder or designer, with concurrency by the local code enforcement agency.

Other Codes and Standards to Consider

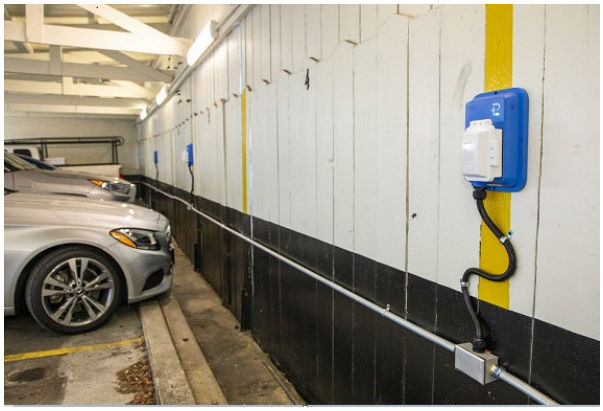
In addition to green building codes, there are several other relevant codes and standards that can impact project design or technology choices:

- **San Francisco Commercial Garage EV Charging Ordinance** requires existing, publicly accessible commercial garages and lots with 100+ parking spaces to install EV chargers at 10% of parking spaces by January 2023. (See San Francisco Ordinance 244-19 and SF Environment Fact Sheet)
- **National Electric Code (NEC, or NFPA 70)** defines design standards for all electrical systems within buildings, including EV chargers and outlets. Article 625 of the NEC focuses on EV charging installations. The latest edition of the NEC, which will take effect in California in 2026, includes changes that allow "Energy Management Systems" (i.e., ALMS) to share power between EV charging stations and other non-EV building loads while limiting the overall capacity rating needed of panels and other infrastructure in the building. (See California Electrical Code, 2022 – requires free account to log-in)
- **Fire Suppression (NFPA 13 and SF Fire bulletin 4.29)** provides guidance on the sprinkler protection requirements for parking spaces with EV charging equipment in new construction projects. The San Francisco Fire Department's bulletin applies specifically to Level 3 and higher chargers, or Direct Current Fast Chargers, and does not apply to Level 1 or Level 2 charging equipment. Per the bulletin, parking garages are classified as "Ordinary Hazard Group II" for the purposes of determining sprinkler density requirements. Spaces with access to Level 3 or Level 4 EV chargers should be designed with "Extra Hazard Group II" sprinkler density requirements (See SF Fire Bulletin 4.29, Updated 12/4/2024)
- **ENERGY STAR** is a voluntary certification for energy efficiency and conservation in appliances and products. Building managers looking to save energy and reduce unnecessary electricity costs should consider purchasing ENERGY STAR certified charging equipment. ENERGY STAR defines energy use criteria that products must meet to obtain the certification. Requirements for ENERGY STAR certified EV charging equipment primarily limit the amount of standby energy use the unit consumes when it is not actively charging a vehicle. (See ENERGY STAR Certified EV Chargers)

Looking Ahead

As shown above, code requirements are an ever-evolving component of building project design and development. As the adoption of EVs has trended upward in San Francisco over the last decade, code requirements have similarly increased the required EV charging infrastructure.

The newest code requirements for the 2025 CALGreen go into effect January 1st, 2026. Future changes may happen in an intervening cycle, or at the next triennial, 2028 CALGreen.



Questions?

Contact the EV Charge SF program team at (415) 554-0773 or email PowerPrograms@sfwater.org

For more information about SFPUC's **EV Charge SF program**, please visit our program website.

Prepared By: TRC Engineers, Inc. for SFPUC's EV Charge SF program.