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Model Ordinance

Electric Vehicle Charging: Intervening Cycle Tiers 1 & 2

Version 2.0

February 2024

# Changes from Prior Versions

Please check [LocalEnergyCodes.com](https://localenergycodes.com/content/resources) to obtain the latest version of this document.

Changes since Version 1.0:

* Version 2.0: Added clarifications from draft 2025 Express Terms, including clarification of the scope of the direct metering requirement for multifamily spaces, updating the nonresidential mechanical lifts exception, and clarifying ESVE credits under the nonresidential kVA option. Added policy change from draft 2025 Express Terms to require that nonresidential low power Level 2 receptacles have raceway and/or conduit sized for full power Level 2 circuits. Other policy changes from the draft Express Terms are not included here.
* Version 1.1: Added text to require larger conductors in multifamily low power Level 2 circuits.

# Scope

* Amends CALGreen to adopt the voluntary Tier 1 or Tier 2 requirements of the intervening cycle code revisions for electric vehicle charging
* No changes to single family buildings
* Combines small and large multifamily buildings, and combines small and large hotel and motel buildings
* Increases requirements for multifamily, hotel and motel buildings
* Requires that assigned multifamily spaces are served by the dwelling unit service panel (directly metered).
* Sets a minimum of one EV space for small nonresidential projects
* Adds requirements for nonresidential additions and alterations
* Expands occupancies subject to medium- and heavy-duty off-street parking requirements
* Includes an optional requirement that low power Level 2 Receptacles have conductors and/or conduit that can support full power Level 2 charging.
* Various other changes and clarifications

The model reach code amends the 2022 California Energy Code, Part 11, Green Building Standards Code (CALGreen). The State has updated the requirements for EVs and other parts of CALGreen in the intervening cycle, scheduled to take effect **July 1, 2024**. Jurisdictions may adopt the revisions in advance.

The changes to the State code include more EV spaces, requirements for nonresidential additions and alterations, expansion of medium- and heavy-duty requirements for certain nonresidential occupancies, and various modifications and clarifications.

The template does not include all of the text in code revisions (most notably the changes to the EV mandatory requirements that are irrelevant to Tiers 1 and 2, as well as changes that are not related to EV charging) and modifies the text and organization to improve clarity.

Any amendments to the existing State Code appear in strikeouts (deletions) and underlines (additions); a strikeout version must be submitted to the State (it may be a referenced attachment to the staff report). All amendments to the State Code must be filed with the [California Building Standards Commission](https://www.dgs.ca.gov/BSC/Codes/Local-Amendments-to-Building-Standards---Ordinances).

This template assumes there were no prior amendments to the CALGreen EV requirements. If that is not the case, it may be best to repeal and readopt the amended sections.

Amendments to the State Code require that the governing body of the local jurisdiction make express findings and cite the authorities used to adopt the ordinance. These vary depending upon the part of the code that is being modified. Refer to [Guide for Local Amendments of Building Standards 2022](https://www.dgs.ca.gov/-/media/Divisions/BSC/05-Resources/Guidebooks/Guide-Local-Amend-of-Bldg-Stnds-02-03-23-Final-rev-06-23.pdf?la=en&hash=C9ED1A74A6A0F6445BDA782591FF9776CD686E5B) for more information.

Jurisdictions may wish to modify certain elements of the model ordinance. When modifying the language, ensure all references are maintained and that the ordinance still meets the mandatory State requirements. Mandatory requirements are specified in the State Code under Section 4.106.4 (residential, hotels and motels) and 5.106.5.3 (nonresidential).

The headings, footnotes and instructions (in blue) are for staff reference and should be removed from the final ordinance.

The draft ordinance text, findings and CEQA determination language are provided as examples only. Ensure all ordinance materials are reviewed and verified by relevant jurisdiction staff and the city/county attorney.

# TIER 1 Amendments

*ORDINANCE NO.* [XXXX]

AN ORDINANCE OF THE [city or county] ADOPTING AMENDMENTS TO THE CALIFORNIA BUILDING STANDARDS CODE TO REQUIRE ADDITIONAL ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

# Findings

Insert findings and cite authorizations. See [Guide for Local Amendments of Building Standards 2022](https://www.dgs.ca.gov/-/media/Divisions/BSC/05-Resources/Guidebooks/Guide-Local-Amend-of-Bldg-Stnds-02-03-23-Final.pdf?la=en&hash=64D83F8470C9F763C5524DA4E0EEDF886A63A93A) for more information.

# Sections Amended

The California Building Code, Title 24, Part 11, Green Building Standards Code, adopted by the [City/County of jurisdiction] codified under Chapter [municipal/county code reference (if not adopted in entirety, include local code references for each section)], is amended as specified below. [Note, if prior amendments were made to the sections below, consider repealing those sections and readopting]

Adoption of the California Code of Regulations Title-24 Part 11: California Green Building Standards Code 2022 edition as published by the International Code Conference and amended herein, including the following appendices:

Appendix Chapter A4, Residential Voluntary Measures, Tier 1, Sections A4.106.8 Electric vehicle (EV) charging for new construction, A4.601.4.1 Mandatory measures for Tier 1, and A4.601.4.2.1.4 Prerequisite and elective measures for Tier 1, as amended herein.

Appendix Chapter A5, Non-Residential Voluntary Measures, Tier 1 including Sections A5.106.5.3 Electric vehicle (EV) charging, and A5.601.4 Compliance verification, as amended herein.

# Definitions

**Section 202 Definitions**, is amended to add or modify the following definitions to read as follows:

**ELECTRIC VEHICLE CHARGING STATION (EVCS).** [HCD] One or more electric vehicle charging spaces served by EVSE or receptacle(s).~~electric vehicle charger(s) or other charging equipment allowing charging of electric vehicles. Electric vehicle charging stations are not considered parking spaces.~~

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** [HCD]The conductors, including the ungrounded, grounded andequipment grounding conductors and the electric vehicle connectors,attachment plugs, personnel protection system, and all other fittings, devices,power outlets, or apparatus installed specifically for the purposeof transferring energy between the premises wiring andthe electric vehicle.

**LEVEL 2 ELECTRIC VEHICLE SUPPLY EQUIPMENT ~~(EVSE)~~.** [HCD] The 208/240-volt 40-ampere branch circuit, and the electric vehicle charging connectors, attachment plugs and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**LEVEL 2 ELECTRIC VEHICLE (EV) CHARGER.** [HCD] A 208/240-volt 30-ampere minimum electric vehicle charger connected to the premises electrical system capable of charging electric vehicles.

**LOW POWER LEVEL 2 ELECTRIC VEHICLE (EV) CHARGING RECEPTACLE.** [HCD] A 208/240-volt 20-ampere minimum branch circuit and a receptacle ~~for use by an EV driver to charge their electric vehicle or hybrid electric vehicle~~.

# Residential Requirements

**The first paragraph of Section 4.106.4 Electric vehicle (EV) charging for new construction** is amended to read as follows:

**4.106.4 Electric vehicle (EV) charging for new construction.** New construction shall comply with Section 4.106.4.1 or 4.106.4.2 ~~to facilitate future installation and use of EV chargers~~. Electric vehicle supply equipment (EVSE) shall ~~be installed in accordance~~ comply with the *California Electrical Code*~~, Article 625~~.

**The first paragraph of Section 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages** is amended to read as follows:

**4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages**. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit and comply with Section A4.106.8.1, Tier 1. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

**The first paragraph of Section 4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities** is modified as follows:

**4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.** When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections ~~4.106.4.2.1 and~~ 4.106.4.2.2~~.~~ and A4.106.8.2, Tier 1. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as an ~~future~~ EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

**Section 4.106.4.2.1** **Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms** is deleted in its entirety and replaced with text to read as follows:

**4.106.4.2.2 Multifamily dwellings, hotels and motels**

1. **EV Ready Parking Spaces with Receptacles**

a. Reserved (see A4.106.8.2)

b. Reserved (see A4.106.8.2)[[1]](#footnote-2)

c. **Receptacle Power Source.** EV charging receptacles in multifamily parking facilities at assigned parking spaces shall be provided with a dedicated branch circuit connected to the dwelling unit’s electrical panel. [Optional] All conductors shall be sized to support a minimum 208/240-volt 40-ampere circuit.[[2]](#footnote-3) These requirements apply unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

**Exception:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

d. **Receptacle Configurations.** 208/240V EV charging receptacles shall comply with one of the following configurations:

* + - 1. For 20- ampere receptacles, NEMA 6-20R
      2. For 30- ampere receptacles, NEMA 14-30R
      3. For 50- ampere receptacles, NEMA 14-50R

2. Reserved

**Section 4.106.4.2.2.1 Electric vehicle charging stations (EVCS)** is amended to read as follows:

**4.106.4.2.2.1 Electric vehicle charging stations (EVCS)** Electric vehicle charging stations required by Section 4.106.4.2~~.2.1.2, Item 3~~, with EV chargers installed shall comply with Section 4.106.4.2.2.1.1.

**Exception:** Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

**Section 4.106.4.2.2.1.1 Location** is deleted in its entirety.

**Section 4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions** is renumbered as Section 4.106.4.2.2.1.1 and amended to read as follows:

**4.106.4.2.2.1.~~2~~1 Electric vehicle charging stations (EVCS) spaces with EV chargers installed; dimensions and location.** ~~The~~ ~~charging~~ EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 ~~charging~~ EVCS spaces, but not less than one, shall also have an 8-foot (2438 mm) wide aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EVCS space is 12 feet (3658 mm). ~~a.~~ Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:
   1. The EVCS space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
   2. The EVCS space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

**Exception:** Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1.

**Section 4.106.4.2.2.1.3 Accessible EV spaces** is renumbered as Section 4.106.4.2.2.1.2 and amended to read as follows:

**4.106.4.2.2.1.~~3~~2 Accessible ~~EV~~ electric vehicle charging station spaces.** In addition to the requirements in Section~~s~~ 4.106.4.2.2.1.1 ~~and 4.106.4.2.2.1.2~~, all ~~EVSE~~ EV chargers, ~~when~~ where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.

**Section 4.106.4.2.3 EV space requirements** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.2.4 Identification** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings** is amended to read as follows:[[3]](#footnote-4)

**4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.** ~~When~~ Where new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be ~~electric vehicle charging spaces (~~EV capablespaces~~) capable of supporting~~ to support future Level 2 ~~EVSE~~ electric vehicle supply equipment. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as “EV CAPABLE.”

**Notes:**

* 1. Construction documents are intended to demonstrate the project’s capability and capacity for facilitating future EV charging.
  2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8 Electric vehicle (EV) charging for new construction** is adopted as mandatory and amended to read as follows:

**A4.106.8 Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections A4.106.8.1~~,~~ or A4.106.8.2 ~~or A4.106.8.3~~, to facilitate ~~future~~ the installation and use of ~~electric vehicle chargers~~ EV ready spaces. Electric vehicle supply equipment (EVSE) shall comply ~~be installed in accordance~~ with the *California Electrical Code*~~, Article 625~~.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8.2 New multifamily development projects and hotels and motels, Tier 1**[[4]](#footnote-5)is adopted as mandatory and amended to read as follows:

**A4.106.8.2 New multifamily ~~development projects and~~ dwellings, hotels and motels.** New multifamily ~~development projects and~~ dwellings, hotels and motels shall meet the following requirements.

**A4.106.8.2.1 New multifamily development projects, and, hotels and motels.**

**Tier 1.**

**~~EV Ready.~~** ~~Thirty-five (35) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.~~

**~~Exception:~~** ~~Areas of parking facilities served by parking lifts.~~

**~~EV Chargers for projects with 20 or more dwelling units, sleeping units or guest rooms.~~** ~~Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.~~

**1. Hotels and Motels**

Fifty (50) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

Fifteen (15) percent of the total number of parking spaces for hotels and motels shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

**Exception:** Hotels and motels may substitute Level 2 EV chargers for some or all of the required EV charging receptacles. Where Level 2 EV chargers are installed in place of low power Level 2 receptacles, at least fifty (50) percent of the installed EV chargers shall be equipped with J1772 connectors.

**2. Multifamily Parking Facilities**

Fifty (50) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided but need not exceed fifty (50) percent of the total number of parking spaces provided on the site.[[5]](#footnote-6)

Fifteen (15) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

**Exception to Section A4.106.8.2:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

**Note to Section A4.106.8.2:** An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8.2.2 Technical Requirements** is adopted as mandatory and amended to read as follows:

**A4.106.8.2.2 Technical requirements.** The EV spaces required by Section A4.106.8.2 shall be designed and constructed in accordance with Sections 4.106.4.2, ~~4.106.4.2.1 (Notes), 4.106.4.2.2 (Notes),~~ 4.106.4.2.2.1.1, 4.106.4.2.2.1.2, ~~4.106.4.2.2.1.3,~~ ~~4.106.4.2.3,~~ ~~4.106.4.2.4~~ and 4.106.4.2.5.

# Nonresidential Requirements

**The first paragraph of Section 5.106.5.3 Electric Vehicle (EV) charging** is amended to read as follows:

**5.106.5.3 Electric vehicle (EV) charging. [N]** Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section A5.106.5.3 (Tier 1) ~~5.106.5.3.1,~~ and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code.

**Exception 2 of Section 5.106.5.3 is amended to read as follows:**

2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

2. Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

**Section 5.106.5.3.2 Electric vehicle charging stations (EVCS)** is amended to read as follows:

**5.106.5.3.2 Electric vehicle charging stations (EVCS).** EV capable spaces shall be provided with electric vehicle supply equipment (EVSE) to create EVCS in the number indicated in Section A5.106.5.3 ~~Table 5.106.5.3.1~~. The EVCS required by Section A5.106.5.3~~Table 5.106.5.3.1 may~~ shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. ~~in any combination of Level 2 and Direct Current Fast Charging (DCFC), except that at least one Level 2 EVSE shall be provided.~~ At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section A5.106.5.3 ~~5.106.5.3.1~~ for each EV capable space is accumulatively supplied to the EV charger.

**5.106.5.3.2.1** The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

**5.106.5.3.2.2** The installation of two Low Power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Section A5.106.3 by one.

[Optional] **5.106.5.3.2.3** Raceway Capacity Requirements. To allow for future upgrades to the electrical conductors serving low power Level 2 charging receptacles, the listed raceway serving such receptacles shall be sized to allow the installation of a dedicated 208/240-volt 40-ampere branch circuit. Where no raceway is used, the conductors shall be sized to accommodate a 208/240-volt 40-ampere receptacle.

Section 5.106.5.3.4 Accessible EVCSis amended to read as follows:

5.106.5.3.4 Accessible **electric vehicle charging station** **(**EVCS**)**. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code Chapter 11B Section 11B-228.3.

**~~Note:~~** ~~For EVCS signs,~~~~refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s)~~

Section **5.106.5.3.5 Electric vehicle charging station signage** is added to read as follows:

**5.106.5.3.5 Electric vehicle charging station signage.** Electric vehicle charging stations shall be identified by signage or pavement markings in compliance withCaltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

**Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty** is renumbered as Section 5.106.5.5 and amended to read as specified below.

**A new Section 5.106.5.4 Additions or Alterations to existing buildings or parking facilities** is added to read as follows:[[6]](#footnote-7)

**5.106.5.4** **Additions or Alterations to existing buildings or parking facilities [A]. [BSC-CG]** Existingbuildings or parking facilities being modified by one of the following, shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3.

1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration.
2. When a new photovoltaic system is installed covering existing parking spaces.
3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel.

**Exceptions:**

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
   * 1. Where there is no local utility power supply.
     2. Where the local utility is unable to supply adequate power.
     3. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
     4. Where demonstrated as impracticable excluding local utility service or utility infrastructure issues.
2. Remote parking facilities that do not have access to the building service panel.
3. Parking area lighting upgrades where no trenching is part of the scope of work.
4. Emergency repairs including but not limited to, water line break in parking facilities, natural disaster repairs, etc.

**5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure [A].** When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with Section 5.106.5.3 for the total number of actual parking spaces being added or altered.

**5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure [A].** When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with Section 5.106.5.3 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.

**Section 5.106.5.5, previously numbered as Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty**, is amended to read as follows:

5.106.5. **~~4~~ 5** Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] [BSC-CG] Construction shall comply with Section 5.106.5. ~~4~~ 5.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores, retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5. ~~4~~ 5.1 for future installation of medium- and heavy-duty EVSE.

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:

1. Where there is no local utility power supply.
2. Where the local utility is unable to supply adequate power.
3. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code,* the *California Electrical Code* and as follows:

**5.106.5. ~~4~~ 5.1** **Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores,** **office buildings, and manufacturing facilities with planned off-street loading spaces [N]**

In order to avoid future demolition when adding EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s) or subpanel(s) shall be installed at the time of construction in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

1. The transformer, main service equipment and subpanels shall meet the minimum power requirement in Table 5.106.5. ~~4~~ 5.1 to accommodate the dedicated branch circuits for the future installation of EVSE.
2. The construction documents shall indicate one or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s), as shown in Table 5.106.5. ~~4~~ 5.1.
3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.
4. The raceway(s) or busway(s) shall be of sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table 5.106.5. ~~4~~ 5.1.

TABLE 5.106.5. **~~4~~ 5**.1, **RACEWAY CONDUIT AND PANEL**

**POWER REQUIREMENTS FOR MEDIUM-AND-HEAVY-DUTY EVSE [N]**

| Building type | Building Size (sq. ft.) | Number of Off-street loading spaces | Additional capacity Required (kVA) for Raceway & Busway and Transformer & Panel |
| --- | --- | --- | --- |
| Grocery | 10,000 to 90,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 90,000 | 1 or Greater | 400 |
| Retail | 10,000 to 135,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 135,000 | 1 or Greater | 400 |
| Warehouse | 20,000 to 256,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 256,000 | 1 or Greater | 400 |
| Manufacturing Facilities | 10,000 to 50,000 | 1 or 2 | 200 |
| Manufacturing Facilities | 10,000 to 50,000 | 3 or Greater | 400 |
| Manufacturing Facilities | Greater than 50,000 | 1 or Greater | 400 |
| Office Buildings | 10,000 to 135,000 | 1 or 2 | 200 |
| Office Buildings | 10,000 to 135,000 | 3 or Greater | 400 |
| Office Buildings | Greater than 135,000 | 1 or Greater | 400 |

**Appendix A5 Nonresidential Voluntary Measures, Section A5.106.5.3** Electric vehicle (EV) chargingis adopted as mandatory and amended to read as follows:

A5.106.5.3 Electric vehicle (EV) charging. Construction shall comply with Section A5.106.5.3.1 Tier 1 ~~or A5.106.5.3.2~~, and in accordance with regulations in the *California Building Code* andthe *California Electrical Code.*

A5.106.5.3.1 Tier 1. Comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table A5.106.5.3.1 Tier 1, or comply with Section A5.106.5.3.2 Electric vehicle charging stations (EVCS)-Power allocation method and associated Table A5.106.5.3.2 Tier 1. ~~Table A5.106.5.3.1 shall be used to determine the number of EV capable spaces required.~~ ~~Refer to Section 5.106.5.3 for design space requirements.~~

~~When EV capable spaces are provided with EVSE to create EVCS per Table A5.106.5.3.1,~~ ~~r~~ Refer to Section 5.106.5.3.2 for the ~~allowed~~ permitted use of Level 2 or Direct Current Fast Charger (DCFC) to create EVCS. Refer to Section 5.106.3.2.1 for the allowed use of DCFC to comply with both EV capable spaces and Level 2 EVSE. ~~and~~ Refer to Section 5.106.5.3.3 for the allowed use of Automatic Load Management System (ALMS).

TABLE A5.106.5.3.1 **Tier 1**

| **TOTAL NUMBER OF ACTUAL PARKING SPACES** | **TIER 1** NUMBER OF REQUIRED EV CAPABLE SPACES | **TIER 1 NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)****2**, **3** |
| --- | --- | --- |
| 0-9 | 2 | 0 |
| 10-25 | 5 | 2 |
| 26-50 | 11 | ~~4~~ |
| 51-75 | 19 | 6 |
| 76-100 | 26 | 9 |
| 101-150 | 38 | 13 |
| 151-200 | 53 | 18 |
| 201 and over | 30 percent of actual ~~total~~ parking spaces1 | 33 percent of EV capable spaces 1 |

1. Calculation for spaces shall be rounded up to the nearest whole number.
2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2. Each EVCS shall reduce the number of required EV capable spaces by the same number.
3. At least one Level 2 EVSE shall be provided.

**Appendix A5 Nonresidential Voluntary Measures, Section A5.106.5.3.2** is deleted in its entirety and replaced with mandatory requirements to read as follows:

A5.106.5.3.2 **Electric vehicle charging stations (EVCS)-Power allocation method.** The Power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table A5.106.5.3.1 Tier 1. Use Table A5.106.5.3.2 Tier 1 to determine the total power in kVA required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, Low Power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

**TABLE A5.106.5.3.2 Tier 1**

| **TOTAL NUMBER OF**  **ACTUAL PARKING SPACES** | **MINIMUM TOTAL kVA**  **@ 6.6 kVA** | **TOTAL kVA REQUIRED**  **IN ANY COMBINATION OF EV CAPABLE 3, 4, LOW POWER LEVEL 2 LEVEL 2 1, 2, OR DCFC** |
| --- | --- | --- |
| 0-9 | 13.2 | 13.2 |
| 10-25 | 33 | 33 |
| 26-50 | 72.6 | 72.6 |
| 51-75 | 125.4 | 125.4 |
| 76-100 | 171.6 | 171.6 |
| 101-150 | 250.8 | 250.8 |
| 151-200 | 349.8 | 349.8 |
| 201 and over | 30 percent of actual parking spaces x 6.6 | Total required kVA =P x .30 x 6.6 Where P=Parking spaces in facility |

1. Level 2 EVSE @ 6.6 kVA minimum.

2. At least one Level 2 EVSE shall be provided.

3. Maximum allowed kVA to be utilized for EV capable spaces is 67 percent.

4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

**Appendix A5 Nonresidential Voluntary Measures, Section A5.601, Table A5.601 is amended as follows:**

The Tier 1 cell for Electric Vehicle Charging is amended to read as follows: ~~Approx. 30% of total spaces~~ Meet provisions of Section A5.106.5.3.

# TIER 2 Amendments

*ORDINANCE NO.* [XXXX]

AN ORDINANCE OF THE [city or county] ADOPTING AMENDMENTS TO THE CALIFORNIA BUILDING STANDARDS CODE TO REQUIRE ADDITIONAL ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

# Findings

Insert findings and cite authorizations. See [Guide for Local Amendments of Building Standards 2022](https://www.dgs.ca.gov/-/media/Divisions/BSC/05-Resources/Guidebooks/Guide-Local-Amend-of-Bldg-Stnds-02-03-23-Final.pdf?la=en&hash=64D83F8470C9F763C5524DA4E0EEDF886A63A93A) for more information.

# Sections Amended

The California Building Code, Title 24, Part 11, Green Building Standards Code, adopted by the [City/County of jurisdiction] codified under Chapter [municipal/county code reference (if not adopted in entirety, include local code references for each section)], is amended as specified below. [Note, if prior amendments were made to the sections below, consider repealing those sections and readopting]

Adoption of the California Code of Regulations Title-24 Part 11: California Green Building Standards Code 2022 edition as published by the International Code Conference and amended herein, including the following appendices:

Appendix Chapter A4, Residential Voluntary Measures, Tier 2, Sections A4.106.8 Electric vehicle (EV) charging for new construction, A4.601.5.1 Mandatory measures for Tier 2, and A4.601.5.2.1.4 Prerequisite and elective measures for Tier 2, as amended herein.

Appendix Chapter A5, Non-Residential Voluntary Measures, Tier 2 including Sections A5.106.5.3 Electric vehicle (EV) charging, and A5.601.4 Compliance verification, as amended herein.

# Definitions

**Section 202 Definitions**, is amended to add or modify the following definitions to read as follows:

**ELECTRIC VEHICLE CHARGING STATION (EVCS).** [HCD] One or more electric vehicle charging spaces served by EVSE or receptacle(s).~~electric vehicle charger(s) or other charging equipment allowing charging of electric vehicles. Electric vehicle charging stations are not considered parking spaces.~~

**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).** [HCD]The conductors, including the ungrounded, grounded andequipment grounding conductors and the electric vehicle connectors,attachment plugs, personnel protection system, and all other fittings, devices,power outlets, or apparatus installed specifically for the purposeof transferring energy between the premises wiring andthe electric vehicle.

**LEVEL 2 ELECTRIC VEHICLE SUPPLY EQUIPMENT ~~(EVSE)~~.** [HCD] The 208/240-volt 40-ampere branch circuit, and the electric vehicle charging connectors, attachment plugs and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**LEVEL 2 ELECTRIC VEHICLE (EV) CHARGER.** [HCD] A 208/240-volt 30-ampere minimum electric vehicle charger connected to the premises electrical system capable of charging electric vehicles.

**LOW POWER LEVEL 2 ELECTRIC VEHICLE (EV) CHARGING RECEPTACLE.** [HCD] A 208/240-volt 20-ampere minimum branch circuit and a receptacle ~~for use by an EV driver to charge their electric vehicle or hybrid electric vehicle~~.

# Residential Requirements

**The first paragraph of Section 4.106.4 Electric vehicle (EV) charging for new construction** is amended to read as follows:

**4.106.4 Electric vehicle (EV) charging for new construction.** New construction shall comply with Section 4.106.4.1 or 4.106.4.2 ~~to facilitate future installation and use of EV chargers~~. Electric vehicle supply equipment (EVSE) shall ~~be installed in accordance~~ comply with the *California Electrical Code*~~, Article 625~~.

**The first paragraph of Section 4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages** is amended to read as follows:

**4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages**. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit and comply with Section A4.106.8.1, Tier 1. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

**The first paragraph of Section 4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities** is modified as follows:

**4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.** When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections ~~4.106.4.2.1 and~~ 4.106.4.2.2~~.~~ and A4.106.8.2, Tier 2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as an ~~future~~ EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

**Section 4.106.4.2.1** **Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms** is deleted in its entirety and replaced with text to read as follows:

**4.106.4.2.2 Multifamily dwellings, hotels and motels**

1. **EV Ready Parking Spaces with Receptacles**

a. Reserved (see A4.106.8.2)

b. Reserved (see A4.106.8.2)[[7]](#footnote-8)

c. **Receptacle Power Source.** EV charging receptacles in multifamily parking facilities facilities at assigned parking spaces shall be provided with a dedicated branch circuit connected to the dwelling unit’s electrical panel. [Optional] All conductors shall be sized to support a minimum 208/240-volt 40-ampere circuit.[[8]](#footnote-9) These requirements apply unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

**Exception:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

d. **Receptacle Configurations.** 208/240V EV charging receptacles shall comply with one of the following configurations:

* + - 1. For 20- ampere receptacles, NEMA 6-20R
      2. For 30- ampere receptacles, NEMA 14-30R
      3. For 50- ampere receptacles, NEMA 14-50R

2. Reserved

**Section 4.106.4.2.2.1 Electric vehicle charging stations (EVCS)** is amended to read as follows:

**4.106.4.2.2.1 Electric vehicle charging stations (EVCS)** Electric vehicle charging stations required by Section 4.106.4.2~~.2.1.2, Item 3~~, with EV chargers installed shall comply with Section 4.106.4.2.2.1.1.

**Exception:** Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.

**Section 4.106.4.2.2.1.1 Location** is deleted in its entirety.

**Section 4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions** is renumbered as Section 4.106.4.2.2.1.1 and amended to read as follows:

**4.106.4.2.2.1.~~2~~1 Electric vehicle charging stations (EVCS) spaces with EV chargers installed; dimensions and location.** ~~The~~ ~~charging~~ EVCS spaces shall be designed to comply with the following:

1. The minimum length of each EVCS space shall be 18 feet (5486 mm).
2. The minimum width of each EVCS space shall be 9 feet (2743 mm).
3. One in every 25 ~~charging~~ EVCS spaces, but not less than one, shall also have an 8-foot (2438 mm) wide aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EVCS space is 12 feet (3658 mm). ~~a.~~ Surface slope for this EVCS space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. These EVCS spaces shall also comply with at least one of the following:
   1. The EVCS space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
   2. The EVCS space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

**Exception:** Electric vehicle charging stations designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1.

**Section 4.106.4.2.2.1.3 Accessible EV spaces** is renumbered as Section 4.106.4.2.2.1.2 and amended to read as follows:

**4.106.4.2.2.1.~~3~~2 Accessible ~~EV~~ electric vehicle charging station spaces.** In addition to the requirements in Section~~s~~ 4.106.4.2.2.1.1 ~~and 4.106.4.2.2.1.2~~, all ~~EVSE~~ EV chargers, ~~when~~where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.

**Section 4.106.4.2.3 EV space requirements** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.2.4 Identification** is deleted in its entirety and Marked as “Reserved”.

**Section 4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings** is amended to read as follows:

**4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.** ~~When~~ Where new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be ~~electric vehicle charging spaces (~~EV capablespaces~~) capable of supporting~~ to support future Level 2 ~~EVSE~~ electric vehicle supply equipment. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as “EV CAPABLE.”

**Notes:**

* 1. Construction documents are intended to demonstrate the project’s capability and capacity for facilitating future EV charging.
  2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8 Electric vehicle (EV) charging for new construction** is adopted as mandatory and amended to read as follows:

**A4.106.8 Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections A4.106.8.1~~,~~ or A4.106.8.2 ~~or A4.106.8.3~~, to facilitate ~~future~~ the installation and use of ~~electric vehicle chargers~~ EV ready spaces. Electric vehicle supply equipment (EVSE) shall comply ~~be installed in accordance~~ with the *California Electrical Code*~~, Article 625~~.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8.2 New multifamily development projects and hotels and motels, Tier 2**[[9]](#footnote-10)is adopted as mandatory and amended to read as follows:

**A4.106.8.2 New multifamily ~~development projects and~~ dwellings, hotels and motels.** New multifamily ~~development projects and~~ dwellings, hotels and motels shall meet the following requirements.

**A4.106.8.2.1 New multifamily development projects, and, hotels and motels.**

**Tier 1.**

**~~EV Ready.~~** ~~Thirty-five (35) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.~~

**~~Exception:~~** ~~Areas of parking facilities served by parking lifts.~~

**~~EV Chargers for projects with 20 or more dwelling units, sleeping units or guest rooms.~~** ~~Ten (10) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use parking is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.~~

**1. Hotels and Motels**

Fifty-five (55) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

Twenty (20) percent of the total number of parking spaces for hotels and motels shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors.

**Exception:** 2. Hotels and motels may install Level 2 EV chargers instead of all or portions of the required percentage of low power Level 2 receptacles for EV charging. Where Level 2 EV chargers are installed in place of low power Level 2 receptacles, at least fifty (50) percent of the installed EV chargers shall be equipped with J1772 connectors.

**2. Multifamily Parking Facilities**

[Options: The requirements include two options for multifamily Tier 2 requirements, Options A and B. Jurisdictions may choose either.]

[Option A]

Fifty-five (55) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. EV charging receptacles required by this section shall be located in at least one assigned parking space per dwelling unit where assigned parking is provided but need not exceed fifty-five (55) percent of the total number of parking spaces provided on the site.[[10]](#footnote-11)

Twenty (20) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

[Option B]

Install one low power Level 2 EV charging receptacle for each parking space available for use by residents.

Twenty (20) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least fifty (50) percent of the required EV chargers shall be equipped with J1772 connectors. Where common use parking or unassigned parking is provided, EV chargers shall be located in common use or unassigned parking areas and shall be available for use by all residents or guests.

[End of Options section]

**Exception to Section A4.106.8.2:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

**Note to Section A4.106.8.2:** An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

**Appendix A4 Residential Voluntary Measures, Section A4.106.8.2.2 Technical Requirements** is adopted as mandatory and amended to read as follows:

**A4.106.8.2.2 Technical requirements.** The EV spaces required by Section A4.106.8.2 shall be designed and constructed in accordance with Sections 4.106.4.2, ~~4.106.4.2.1 (Notes), 4.106.4.2.2 (Notes),~~ 4.106.4.2.2.1.1, 4.106.4.2.2.1.2, ~~4.106.4.2.2.1.3,~~ ~~4.106.4.2.3,~~ ~~4.106.4.2.4~~ and 4.106.4.2.5.

# Nonresidential Requirements

**The first paragraph of Section 5.106.5.3 Electric Vehicle (EV) charging** is amended to read as follows:

**5.106.5.3 Electric vehicle (EV) charging. [N]** Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section A5.106.5.3 (Tier 2) ~~5.106.5.3.1,~~ and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code.

**Exception 2 of Section 5.106.5.3 is amended to read as follows:**

2. Parking spaces accessible only by automated mechanical car parking systems are not required to comply with this code section.

2. Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging.

**Section 5.106.5.3.2 Electric vehicle charging stations (EVCS)** is amended to read as follows:

**5.106.5.3.2 Electric vehicle charging stations (EVCS).** EV capable spaces shall be provided with electric vehicle supply equipment (EVSE) to create EVCS in the number indicated in Section A5.106.5.3.3 ~~Table 5.106.5.3.1~~. The EVCS required by Section A5.106.5.3.3~~Table 5.106.5.3.1 may~~ shall be provided with Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. ~~in any combination of Level 2 and Direct Current Fast Charging (DCFC), except that at least one Level 2 EVSE shall be provided.~~ At least one Level 2 EVSE shall be provided.

One EV charger with multiple connectors capable of charging multiple EVs simultaneously shall be permitted if the electrical load capacity required by Section A5.106.5.3 ~~5.106.5.3.1~~ for each EV capable space is accumulatively supplied to the EV charger.

**5.106.5.3.2.1** The installation of each DCFC EVSE shall be permitted to reduce the minimum number of required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

**5.106.5.3.2.2** The installation of two Low Power Level 2 EV charging receptacles shall be permitted to reduce the minimum number of required EV capable spaces without EVSE in Section A5.106.3 by one.

[Optional] **5.106.5.3.2.3** Raceway Capacity Requirements. To allow for future upgrades to the electrical conductors serving low power Level 2 charging receptacles, the listed raceway serving such receptacles shall be sized to allow the installation of a dedicated 208/240-volt 40-ampere branch circuit. Where no raceway is used, the conductors shall be sized to accommodate a 208/240-volt 40-ampere receptacle.

Section 5.106.5.3.4 Accessible EVCSis amended to read as follows:

5.106.5.3.4 Accessible **electric vehicle charging station** **(**EVCS**)**. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code Chapter 11B Section 11B-228.3.

**~~Note:~~** ~~For EVCS signs,~~~~refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s)~~

Section **5.106.5.3.5 Electric vehicle charging station signage** is added to read as follows:

**5.106.5.3.5 Electric vehicle charging station signage.** Electric vehicle charging stations shall be identified by signage or pavement markings in compliance withCaltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

**Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty** is renumbered as Section 5.106.5.5 and amended to read as specified below.

**A new Section 5.106.5.4 Additions or Alterations to existing buildings or parking facilities** is added to read as follows:

**5.106.5.4 Additions or Alterations to existing buildings or parking facilities [A]. [BSC-CG]** Existingbuildings or parking facilities being modified by one of the following, shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3.

1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration.
2. When a new photovoltaic system is installed covering existing parking spaces.
3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel.

**Exceptions:**

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:
2. Where there is no local utility power supply.
3. Where the local utility is unable to supply adequate power.
4. Where there is evidence suitable to the local enforcement agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.
5. Where demonstrated as impracticable excluding local utility service or utility infrastructure issues.
6. Remote parking facilities that do not have access to the building service panel.
7. Parking area lighting upgrades where no trenching is part of the scope of work.
8. Emergency repairs including but not limited to, water line break in parking facilities, natural disaster repairs, etc.

**5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure [A].** When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with Section 5.106.5.3 for the total number of actual parking spaces being added or altered.

**5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure [A].** When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include electric vehicle charging in compliance with Section 5.106.5.3 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.

**Section 5.106.5.5, previously numbered as Section 5.106.5.4 Electric vehicle (EV) charging: medium-duty and heavy-duty**, is amended to read as follows:

5.106.5. **~~4~~ 5** Electric vehicle (EV) charging: medium-duty and heavy-duty. [N] [BSC-CG] Construction shall comply with Section 5.106.5. ~~4~~ 5.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores, retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5. ~~4~~ 5.1 for future installation of medium- and heavy-duty EVSE.

Exceptions:

1. On a case-by-case basis where the local enforcing agency has determined compliance with this section is not feasible based upon one of the following conditions:

1. Where there is no local utility power supply.
2. Where the local utility is unable to supply adequate power.
3. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code,* the *California Electrical Code* and as follows:

**5.106.5. ~~4~~ 5.1 Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores,** **office buildings, and manufacturing facilities with planned off-street loading spaces [N]**

In order to avoid future demolition when adding EV supply and distribution equipment, spare raceway(s) or busway(s) and adequate capacity for transformer(s), service panel(s) or subpanel(s) shall be installed at the time of construction in accordance with the *California Electrical Code*. Construction plans and specifications shall include, but are not limited to, the following:

1. The transformer, main service equipment and subpanels shall meet the minimum power requirement in Table 5.106.5. ~~4~~ 5.1 to accommodate the dedicated branch circuits for the future installation of EVSE.
2. The construction documents shall indicate one or more location(s) convenient to the planned off-street loading space(s) reserved for medium- and heavy-duty ZEV charging cabinets and charging dispensers, and a pathway reserved for routing of conduit from the termination of the raceway(s) or busway(s) to the charging cabinet(s) and dispenser(s), as shown in Table 5.106.5. ~~4~~ 5.1.
3. Raceway(s) or busway(s) originating at a main service panel or a subpanel(s) serving the area where potential future medium- and heavy-duty EVSE will be located and shall terminate in close proximity to the potential future location of the charging equipment for medium- and heavy-duty vehicles.
4. The raceway(s) or busway(s) shall be of sufficient size to carry the minimum additional system load to the future location of the charging for medium- and heavy-duty ZEVs as shown in Table 5.106.5. ~~4~~ 5.1.

TABLE 5.106.5. **~~4~~ 5**.1, **RACEWAY CONDUIT AND PANEL**

**POWER REQUIREMENTS FOR MEDIUM-AND-HEAVY-DUTY EVSE [N]**

| Building type | Building Size (sq. ft.) | Number of Off-street loading spaces | Additional capacity Required (kVA) for Raceway & Busway and Transformer & Panel |
| --- | --- | --- | --- |
| Grocery | 10,000 to 90,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 90,000 | 1 or Greater | 400 |
| Retail | 10,000 to 135,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 135,000 | 1 or Greater | 400 |
| Warehouse | 20,000 to 256,000 | 1 or 2 | 200 |
| 3 or Greater | 400 |
| Greater than 256,000 | 1 or Greater | 400 |
| Manufacturing Facilities | 10,000 to 50,000 | 1 or 2 | 200 |
| Manufacturing Facilities | 10,000 to 50,000 | 3 or Greater | 400 |
| Manufacturing Facilities | Greater than 50,000 | 1 or Greater | 400 |
| Office Buildings | 10,000 to 135,000 | 1 or 2 | 200 |
| Office Buildings | 10,000 to 135,000 | 3 or Greater | 400 |
| Office Buildings | Greater than 135,000 | 1 or Greater | 400 |

**Appendix A5 Nonresidential Voluntary Measures, Section A5.106.5.3** Electric vehicle (EV) chargingis adopted as mandatory and amended to read as follows:

A5.106.5.3 Electric vehicle (EV) charging. Construction shall comply with Section ~~A5.106.5.3.1 or~~ A5.106.5.3.~~2~~3, Tier 2, and in accordance with regulations in the *California Building Code* andthe *California Electrical Code.*

**Appendix A5 Nonresidential Voluntary Measures, Sections A5.106.5.3.1 Tier 1 and A5.106.5.3.2 Tier 2** are removed in their entirety and marked as Reserved.

**A new section is added to Appendix A5 Nonresidential Voluntary Measures, Section A5.106.5.3.3 Tier 1**, is added to read as follows:

A5.106.5.3.3 Tier 2. Comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 Electric vehicle charging stations and associated Table A5.106.5.3.3 Tier 2, or comply with Section A5.106.5.3.4 Electric vehicle charging stations (EVCS)-Power allocation method and associated Table A5.106.5.3.4 Tier 2. ~~Table A5.106.5.3.1 shall be used to determine the number of EV capable spaces required.~~ ~~Refer to Section 5.106.5.3 for design space requirements.~~

~~When EV capable spaces are provided with EVSE to create EVCS per Table A5.106.5.3.1,~~ ~~r~~ Refer to Section 5.106.5.3.2 for the ~~allowed~~ permitted use of Level 2 or Direct Current Fast Charger (DCFC) to create EVCS. Refer to Section 5.106.3.2.1 for the allowed use of DCFC to comply with both EV capable spaces and Level 2 EVSE. ~~and~~ Refer to Section 5.106.5.3.3 for the allowed use of Automatic Load Management System (ALMS).

TABLE A5.106.5.3.~~2~~3 **Tier 2**

| **TOTAL NUMBER OF ACTUAL PARKING SPACES** | **TIER 1** NUMBER OF REQUIRED EV CAPABLE SPACES | **TIER 1 NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)****2**, **3** |
| --- | --- | --- |
| 0-9 | 3 | 0 |
| 10-25 | 8 | 3 |
| 26-50 | 17 | 6 |
| 51-75 | 28 | 9 |
| 76-100 | 40 | 13 |
| 101-150 | 57 | 19 |
| 151-200 | 79 | 26 |
| 201 and over | 45 percent of actual ~~total~~ parking spaces1 | 33 percent of EV capable spaces 1 |

1. Calculation for spaces shall be rounded up to the nearest whole number.

2. The number of required EVCS (EV capable spaces provided with EVSE) in column 3 count toward the total number of required EV capable spaces shown in column 2. Each EVCS shall reduce the number of required EV capable spaces by the same number.

3. At least one Level 2 EVSE shall be provided.

**Appendix A5 Nonresidential Voluntary Measures, Section A5.106.5.3.2** is deleted in its entirety and replaced with mandatory requirements to read as follows:

A5.106.5.3.4 **Electric vehicle charging stations (EVCS)-Power allocation method.** The Power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table A5.106.5.3.3 Tier 2. Use Table A5.106.5.3.4 Tier 2 to determine the total power in kVA required based on the total number of actual parking spaces.

Power allocation method shall include the following:

1. Use any kVA combination of EV capable spaces, Low Power Level 2, Level 2 or DCFC EVSEs.
2. At least one Level 2 EVSE shall be provided.

**TABLE A5.106.5.3.4 Tier 2**

| **TOTAL NUMBER OF**  **ACTUAL PARKING SPACES** | **MINIMUM TOTAL kVA**  **@ 6.6 kVA** | **TOTAL kVA REQUIRED**  **IN ANY COMBINATION OF EV CAPABLE 3, 4, LOW POWER LEVEL 2 LEVEL 2 1, 2, OR DCFC** |
| --- | --- | --- |
| 0-9 | 28.8 | 28.8 |
| 10-25 | 76.8 | 76.8 |
| 26-50 | 163.2 | 163.2 |
| 51-75 | 268.8 | 268.8 |
| 76-100 | 384 | 384 |
| 101-150 | 547.2 | 547.2 |
| 151-200 | 758.4 | 758.4 |
| 201 and over | 45 percent of actual parking spaces x 6.6 | Total required kVA =P x .45 x 6.6 Where P=Parking spaces in facility |

1. Level 2 EVSE @ 6.6 kVA minimum.

2. At least one Level 2 EVSE shall be provided.

3. Maximum allowed kVA to be utilized for EV capable spaces is 67 percent.

4. If EV capable spaces are utilized they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.

**Appendix A5 Nonresidential Voluntary Measures, Section A5.601, Table A5.601 is amended as follows:**

The Tier 1 cell for Electric Vehicle Charging is amended to read as follows: ~~Approx. 30% of total spaces~~ Meet provisions of Section A5.106.5.3.

# OTHER ORDINANCE SECTIONS

Section 2: CEQA

This ordinance is exempt from CEQA under 15061(b)(3) on the grounds that these standards are more stringent than the State energy standards, there are no reasonably foreseeable adverse impacts and there is no possibility that the activity in question may have a significant effect on the environment.

Section 3: Severability

If any word, phrase sentence part, section, subsection or other portion of this amendment or any application thereof to any person or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the prescribed application thereof, shall be severable, and the remaining provisions of this amendment, and all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect. The *[name of governing body]* hereby declares that it would have passed this amendment and each section, subsection sentence, clause and phrase of this amendment, irrespective of the fact that any one or more sections, subsection, sentences, clauses or phrases is declared invalid.

Section 4: Violations

Violation of the requirements of this Chapter shall be considered an infraction of the *[jurisdiction Municipal/County Code]*, punishable by all the sanctions prescribed in *[cite local reference to infractions]*.

Section 5: Effective Date

This ordinance shall become effective as of ***[DATE]***, or upon the date filed with the California Building Standards Commission (CBSC), whichever is later.

1. Text from the proposed intervening cycle language is omitted here since it quantifies the mandatory requirements, which are not applicable and potentially confusing to the reader. [↑](#footnote-ref-2)
2. This text is not in the proposed intervening cycle language. [↑](#footnote-ref-3)
3. [Marin County](https://localenergycodes.com/download/1508/local_government_adoption_ordinance/fieldList/2022%20Marin%20County%20-%20Ordinance.pdf) and the [Town of Fairfax](https://localenergycodes.com/download/1580/local_government_adoption_ordinance/fieldList/2022%20Fairfax%20-%20Ordinance.pdf) have extended requirements to include modifications to parking lot surfaces. [↑](#footnote-ref-4)
4. This section is organized slightly differently than the intervening cycle. [↑](#footnote-ref-5)
5. This text was modified slightly from the text in the intervening cycle to provide clarity. [↑](#footnote-ref-6)
6. [Marin County](https://localenergycodes.com/download/1508/local_government_adoption_ordinance/fieldList/2022%20Marin%20County%20-%20Ordinance.pdf) and the [Town of Fairfax](https://localenergycodes.com/download/1580/local_government_adoption_ordinance/fieldList/2022%20Fairfax%20-%20Ordinance.pdf) have extended requirements to include modifications to parking lot surfaces. [↑](#footnote-ref-7)
7. Text from the intervening cycle language is omitted here since it quantifies the mandatory requirements, which are not applicable and potentially confusing to the reader. [↑](#footnote-ref-8)
8. This text is not in the proposed intervening cycle language. [↑](#footnote-ref-9)
9. This section is organized slightly differently than the intervening cycle. [↑](#footnote-ref-10)
10. This text was modified slightly from the text in the intervening cycle to provide clarity. [↑](#footnote-ref-11)