

(e) Main Electrical Service Panel.

1. The main electrical service panel shall have a minimum busbar rating of 200 amps.
2. The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space shall be permanently marked as "For Future Solar Electric".

Sec. 9.256. - SECTION 202 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

SECTION 202 of the Green Building Standards Code is amended to add definitions for "Affordable Housing", "Automatic Load Management Systems (ALMS)", "EV Capable", "Level 1 EV Ready Space", "Level 2 EV Ready Space", and "Electric Vehicle Charging Station (EVCS)" to read as follows:

AFFORDABLE HOUSING: Residential buildings that consist entirely of housing that costs no more than 30 percent of gross household income. Housing costs include rent or mortgage payments, utilities, taxes, insurance, homeowner association fees, and other related costs.

AUTOMATIC LOAD MANAGEMENT SYSTEMS (ALMS): A control system which allows multiple electric vehicle chargers or electric vehicle ready chargers to share a circuit or panel and automatically reduce power at each charger, providing the opportunity to reduce electrical infrastructure costs and/or provide demand response capability. ALMS is only allowed for Level 2 Electrical Vehicle Charging Stations (EVCS), Level 2 EV Ready Spaces, and Level 1 EV Ready Spaces. ALMS systems must be designed to deliver at least 1.4kW to each EVCS, Level 2 EV Ready Spaces, and Level 1 EV Ready Spaces. The connected amperage on-site shall not be lower than the required connected amperage per Part 11, 2019 California Green Building Code for the relevant building types.

ELECTRIC VEHICLE CHARGING STATION (EVCS): A parking space that includes installation of electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes connected to a Level 2 EV Ready Space. EVCS installation may be used to satisfy a Level 2 EV Ready Space requirement.

ELECTRIC VEHICLE (EV) CAPABLE: A parking space linked to a listed electrical panel with sufficient capacity to provide at least 110/120 volts and 20 amperes to the parking space. Raceways linking the electrical panel and parking space only need to be installed in spaces that will be inaccessible in the future, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits. Raceways must be at least 1" in diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The panel circuit directory shall identify the overcurrent

protective device space(s) reserved for EV charging as “EV CAPABLE.” Construction documents shall indicate future completion of raceway from the panel to the parking space, via the installed inaccessible raceways.

LEVEL 1 EV READY SPACE: A parking space served by a complete electric circuit with a minimum of 110/120 volt, 20-ampere capacity including electrical panel capacity, overprotection device, a minimum 1” diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labelled “Electric Vehicle Outlet” with at least a ½” font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE).

LEVEL 2 EV READY SPACE: A parking space served by a complete electric circuit with 208/240 volt, 40-ampere capacity including electrical panel capacity, overprotection device, a minimum 1” diameter raceway that may include multiple circuits as allowed by the California Electrical Code, wiring, and either a) a receptacle labelled “Electric Vehicle Outlet” with at least a ½” font adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

Sec. 9.257. - SECTION 4.106.4 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

Section 4.106.4 of the Green Building Standards Code is amended to read as follows:

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1, 4.106.4.2 or 4.106.4.3, to facilitate future installation and use of EV chargers.

EXCEPTION 1: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:

1.1 Where there is no commercial power supply.

1.2 Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per dwelling unit.

EXCEPTION 2: Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities, unless the electrical panel is upgraded or a new panel is installed in either the ADU, JADU, or single-family dwelling located on the same lot, in which case only the electrical capacity requirements apply.

EXCEPTION 3: Parking spaces accessible only by automated mechanical car parking systems.

Sec. 9.258. - SECTION 4.106.4.1 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

Section 4.106.4.1 of the Green Building Standards Code 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 Level 2 EV Ready Space and Level 1 EV Ready Space.

Exception: For each dwelling unit with only one parking space, install a Level 2 EV Ready Space.

4.106.4.1.1 Identification. The raceway termination location shall be permanently and visibly marked as "Electric Vehicle Outlet."

Sec. 9.259. - SECTION 4.106.4.2 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

4.106.4.2 New multifamily dwellings. The following requirements apply to all new multifamily dwellings:

1. For multifamily buildings with less than or equal to 20 dwelling units, one parking space per dwelling unit with parking shall be provided with a Level 2 EV Ready Space.
2. When more than 20 multifamily dwelling units are constructed on a building site:
 - A. 25% of the dwelling units with parking space(s) shall be provided with at least one Level 2 EV Ready Space. Calculations for the required minimum number of Level 2 EV Ready Spaces shall be rounded up to the nearest whole number.
 - B. In addition, each remaining dwelling unit with parking space(s) shall be provided with at least a Level 1 EV Ready Space.

EXCEPTION: For all multifamily Affordable Housing, 10% of dwelling units with parking space(s) shall be provided with at least one Level 2 EV Ready Space. Calculations for the required minimum number of Level 2 EV Ready Spaces shall be rounded up to the nearest whole number. The remaining dwelling units with parking space(s) shall each be provided with at least a Level 1 EV Ready Space.

Notes:

1. ALMS may be installed to decrease electrical service and transformer costs associated with EV Charging Equipment subject to review of the City.
2. Installation of Level 2 EV Ready Spaces above the minimum number required level may offset the minimum number Level 1 EV Ready spaces required on a 1:1 basis.

3. The requirements apply to multifamily buildings with parking spaces including: a) assigned or leased to individual dwelling units, and b) unassigned residential parking.
4. In order to adhere to accessibility requirements in accordance with California Building Code Chapters 11A and/or 11B, it is recommended that all accessible parking spaces for newly constructed multifamily dwellings are provided with Level 1 or Level 2 EV Ready Spaces.

4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. Where common use parking is provided at least one EV space shall be located in the common use parking area and shall be available for use by all residents.

4.106.4.2.1.1 Electric vehicle charging stations (EVCS). When EV chargers are installed, EV spaces required by Section 4.106.4.2.2, Item 3, shall comply with at least one of the following options:

1. The EV 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 space.
2. The EV space shall be located adjacent 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 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.

Note: Electric vehicle charging stations serving public housing are required to comply with the *California Building Code*, Chapter 11B.

Sec. 9.260. - SECTION 4.106.4.2.2 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

Section 4.106.4.2.2 of the Green Building Standards Code is amended to read as follows:

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. EV spaces shall be designed to comply with Redwood City Zoning Ordinance Section 30.6.A.

Sec. 9.261. - SECTION 5.106.5.3 OF THE GREEN BUILDING STANDARDS CODE AMENDED:

Section 5.106.5.3 of the Green Building Standards Code is amended to read as follows:

5.106.5.3 Electric vehicle (EV) charging. [N] New construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation and use of EV chargers.

EXCEPTION: Where there is no commercial power supply.

5.106.5.3.1 Office buildings: In nonresidential new construction buildings designated primarily for office use with parking:

1. When 10 or more parking spaces are constructed, 10% of the available parking spaces on site shall be equipped with Level 2 EVCS;
2. An additional 10% shall be provided with at least Level 1 EV Ready Spaces; and
3. An additional 30% shall be at least EV Capable.

EXCEPTION: Parking spaces accessible only by automated mechanical car parking systems are exempt from providing EV charging infrastructure.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS, Level 1 EV Ready spaces and EV Capable spaces shall all be rounded up to the nearest whole number.

Construction plans and specifications shall demonstrate that all raceways shall be a minimum of 1" and sufficient for installation of EVCS at all required Level 1 EV Ready and EV Capable spaces; Electrical calculations shall substantiate the design of the electrical system to include the rating of equipment and any on-site distribution transformers, and have sufficient capacity to simultaneously charge EVs at all required EV spaces including Level 1 EV Ready and EV Capable spaces; and service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

Note: ALMS may be installed to increase the number of EV chargers or the amperage or voltage beyond the minimum requirements in this code. The option does not allow for installing less electrical panel capacity than would be required without ALMS.

5.106.5.3.2 Other nonresidential buildings: In nonresidential new construction buildings that are not designated primarily for office use, such as retail or institutional uses:

1. When 10 or more parking spaces are constructed, 6% of the available parking spaces on site shall be equipped with Level 2 EVCS; and
2. An additional 5% shall be at least Level 1 EV Ready.

Calculations for the required minimum number of spaces equipped with Level 2 EVCS and Level 1 EV Ready spaces shall be rounded up to the nearest whole number.

EXCEPTION: Installation of each Direct Current Fast Charger with the capacity to provide at least 80 kW output may substitute for 6 Level 2 EVCS

and 5 EV Ready spaces after a minimum of 6 Level 2 EVCS and 5 Level 1 EV Ready spaces are installed.

5.106.5.3.3 Clean Air Vehicle Parking Designation. EVCS qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.

Notes:

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf.
2. See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook, which provides helpful information for local governments, residents and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.
4. Section 11B-812 of the California Building Code requires that a facility providing EVCS for public and common use also provide one or more accessible EVCS as specified in Table 11B-228.3.2.1.
5. EV Ready Spaces may be designated as "EV Space Preferred."

5.106.5.3.4 [N] Identification. The raceway termination location shall be permanently and visibly marked as "EV Ready".

SECTION 2. If any section, paragraph, sentence or word of this ordinance or of the Code hereby adopted should for any reason, be found invalid, it is intended that all other portions of this ordinance independent of any such portion as may be declared invalid shall be valid.

SECTION 3. This adoption of this ordinance is exempt from CEQA pursuant to Section 15061(b) (3) because it can be seen with certainty that adoption of this ordinance will not have a significant adverse effect on the environment.

SECTION 4. This ordinance shall take effect upon approval by the California Energy Commission.

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