

**ORDINANCE NO. .**

**BOARD OF SUPERVISORS, COUNTY OF SAN MATEO,  
STATE OF CALIFORNIA**

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**AN ORDINANCE AMENDING TITLE 24 PART 6 ENERGY CODE AND PART 11  
GREEN BUILDING CODE TO ADOPT LOCAL REACH CODES TO MEET  
GREENHOUSE GAS EMISSION REDUCTION GOALS**

The Board of Supervisors of the County of San Mateo, State of California,  
**ORDAINS** as follows:

**SECTION 1.**

**Findings of Fact**

For the purposes of this ordinance, the Board of Supervisors hereby makes the following findings, as required by Sections 13143.5, 17958.5, 17958.7, and 18941.5 of the California Health and Safety Code. The Board of Supervisors finds and declares that the unique characteristics of the topographic, geologic, and climatic conditions found in San Mateo County make the local amendments to Title 24 reasonable and necessary.

**Finding 1: Topographic**

Significant elevation changes occur within the County. Highly combustible dry grass, weeds and brush are common in the hilly and open space areas adjacent to built-up locations six to eight months of each year. When these areas experience wildland fires, they immediately threaten nearby buildings. This condition can be found throughout the County, especially in those developed and developing areas of the County, which interface and intermix with adjoining wildlands. The threat of wildland fires could be compounded by above-ground electrical power transmission lines

suspended on poles and towers exist throughout the County. Many power line poles are located adjacent to streets and roads and many of the transmission wires are suspended above large areas of dry vegetation and near untreated wood shake or shingle roofs. Development has followed the path of least resistance, creating a meandering pattern. This does not lend itself to a good systematic street and road layout, which would promote easy traffic flow. It has, in fact, resulted in few major cross-town thoroughfares that tend to be heavily congested, primarily during commute hours and seasonal periods of the year. This creates barriers that reduce the response time of fire equipment and other emergency services. The topography of the County is also challenged by major development patterns. Employment areas are located adjacent to the major thoroughfares within the County. The people who work in these areas have added to the traffic congestion in the County thereby reducing the response time capabilities of the various fire agencies. The conditions within the County create hazardous conditions for which departure from California Building Standards Code is warranted.

### **Finding 2: Geologic**

The majority of the County encompasses areas classified as Seismic Design Category E, which is the most severe earthquake category. Buildings and other structures in Category E can experience major seismic damage. Within San Mateo County are active faults such as San Andreas, San Gregorio, Seal Cove, and other lesser faults. Earthquake activity with nearby epicenters has the potential for inducing landslides which can create situations of reduced emergency response times and restoration of power utilities. Earthquakes of the magnitude experienced locally can cause major damage to electrical transmission facilities and natural gas infrastructure, which in turn

cause power failures while at the same time starting fires or gas explosions throughout the County. There is a need to reduce dependence on the natural gas infrastructure to reduce harms and increase energy resiliency in the event of an earthquake. The modifications and changes cited herein are designed to reduce natural gas hazards in buildings and encourage energy resiliency through increased installation of solar and storage systems.

### **Finding 3: Climatic**

The County is located in Climate Zone 3 as established in the 2019 California Energy Code. Climate Zone 3 incorporates mostly coastal communities from Marin County to southern Monterey County including San Francisco. The County experiences precipitation ranging from 15 to 24 inches per year with an average of approximately 20 inches per year. Ninety-six percent (96%) of precipitation falls during the months of November through April and four percent (4%) from May through September. This is a dry period of at least five months each year. Additionally, the area is subject to frequent periods of drought – indeed, the area recently suffered through an unprecedented seven-year drought. Similar periods of extended drought may be expected locally in the future. Relative humidity remains in the middle range most of the time. It ranges from 45 to 65 percent in the winter, and occasionally falls as low as 15 percent. Temperatures from June through September average above 80 degrees Fahrenheit. Temperatures as high as 110 degrees Fahrenheit have been recorded, and it is not unusual to experience several continuous days with temperatures in the mid to high 90s. Prevailing winds in the area are from the west. However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 12 miles per hour

(MPH) range, gusting to 25 to 35 MPH. Forty (40) MPH winds are experienced and winds up to 55 MPH have been registered locally. Climate change is causing historic draughts, devastating wildfires, torrential storms, extreme heat, property damage, and threats to human health and food supplies. The State of California has outlined specific steps to reduce greenhouse gas emissions to prevent these negative impacts of changing climate including moving the State to 100 percent clean energy by 2045. This gives local governments the opportunity to achieve greenhouse gas emission reductions with a climate positive impact by powering buildings from clean electricity. A statewide shift toward building electrification is underway as demonstrated by proceedings before the California Energy Commission to address building decarbonization, and procurement decisions by the California Public Utilities Commission to support building decarbonization and its impact on energy demand. These climatic conditions along with the greenhouse emissions generated from structures in both the residential and nonresidential sectors requires exceeding the energy standards for building construction established in the 2019 California Buildings Standards Code.

**Section 2.**

Article 10 (Green Building Code) Section and Article 9 (Energy Code) Section 100.0 through 110.10 of the San Mateo County Ordinance Code are amended.

**Section 3.** Article 9 [Energy Code] and Article 10 of the County of San Mateo Building Regulations are hereby repealed and a new Article 10 and Article 9 are hereby added to read as follows:

**SECTION 9200. AMENDMENTS TO THE 2019 CALIFORNIA ENERGY CODE**

The County of San Mateo adopts California Energy Code, 2019 Edition, Title 24, Part 6 of the California Code of Regulations in its full form with the following local amendments:

## **§ 100.0 – Scope**

**(e) Sections applicable to particular buildings.** TABLE 100.0-A and this subsection list the provisions of Part 6 that are applicable to different types of buildings covered by Section 100.0(a).

1. **All buildings.** Sections 100.0 through 110.12 apply to all buildings.

**Exception to Section 100.0(e) 1:** Spaces or requirements not listed in TABLE 100.0-A.

2. **Newly constructed buildings.**

A. **All newly constructed buildings.** Sections 110.0 through 110.12 apply to all newly constructed buildings within the scope of Section 100.0(a). In addition, newly constructed buildings shall meet the requirements of Subsections B, C, D or E, as applicable; and shall be an All-Electric Building as defined in Section 100.1(b).

**Exception 1:** Laboratory areas within Non-Residential Buildings may contain non-electric Space Conditioning Systems.

**Exception 2:** If the applicant establishes that there is not an all-electric prescriptive compliance pathway for the building or space regulated by the Energy Code, and that the building or space is not able to achieve compliance with the Energy Code using the alternative calculation method and utilizing commercially available technology, then the Building Official may grant a modification. If the Building Official grants a modification pursuant to this Exception, the applicant shall comply with the pre-wiring provision of Note 1 below.

**Exception 3:** All Residential and Non-Residential buildings may contain non-electric Cooking Appliances and Fireplaces. The applicant shall comply with the pre-wiring provision of Note 1 below.

**Exception 4:** Public agency owned and operated emergency centers.

**Note 1:** If natural gas appliances are used in any of the above exceptions 1-3, natural gas appliance locations must also be electrically pre-wired for future electric appliance installation. The pre-wiring shall include the following:

1. A dedicated electrical circuit for each appliance, with a minimum amperage requirement for a comparable electric appliance (see manufacturer's recommendations) with an electrical receptacle that is connected to an electrical overcurrent protection device, extending to within 3 feet of the appliance and accessible without obstructions;
2. Panel and electrical receptacle to be labeled "For Future Electric appliance" and be electrically isolated;
3. A circuit breaker shall be installed in the electrical panel for the branch circuit and labeled for each circuit, an example is as follows (i.e.: "For Future Electric Range;"); and
4. All electrical components, including conductors, receptacles, junction boxes, or blank covers, related to this section shall be installed in accordance with the California Electrical Code.

**Note 2:** If any of the exceptions 1-4 are granted, the Building Official shall have the authority to approve alternate materials, design and methods of construction or equipment per CBC 104 or CRC R104, as applicable.

**ALL ELECTRIC BUILDING:** is a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the source of energy for its space heating, water heating, cooking appliances, and clothes drying appliances. All Electric Buildings may include solar thermal pool heating.

**LABRATORY:** is a building or area where research, experiments, and measurements in medical and life sciences are performed and/or stored requiring examination. The building may include workbenches, countertops, scientific instruments, and supporting offices.

## **§ 110.2 – MANDATORY REQUIREMENTS FOR SPACE-CONDITIONING EQUIPMENT**

**Certification by Manufacturers.** Any space-conditioning equipment listed in this section, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified to the Commission that the equipment complies with all applicable requirements of this section.

## **§ 110.3 – MANDATORY REQUIREMENTS FOR SERVICE WATER-HEATING SYSTEMS AND EQUIPMENT**

(a) **Certification by manufacturers.** Any service water-heating system or equipment,

meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment complies with all of the requirements of this subsection for that system or equipment.

#### **§ 110.4 – MANDATORY REQUIREMENTS FOR POOL AND SPA SYSTEMS AND EQUIPMENT**

(a) **Certification by Manufacturers.** Any pool or spa heating system or equipment, meeting the requirements of section 100.0 (e)2A, may be installed only if the manufacturer has certified that the system or equipment has all of the following:

1. **Efficiency.** A thermal efficiency that complies with the Appliance Efficiency Regulations; and
2. **On-off switch.** A readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting; and
3. **Instructions.** A permanent, easily readable, and weatherproof plate or card that gives instruction for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used; and
4. **Electric resistance heating.** No electric resistance heating.

**Exception 1 to Section 11.4(a)4:** Listed package units with fully insulated enclosures, and with tightfitting covers that are insulated to at least R-6.

**Exception 2 to Section 110.4(a)4:** Pools or spas deriving at least 60 percent of the annual heating energy from site solar energy or recovered energy.

#### **§ 110.5 – NATURAL GAS CENTRAL FURNACES, COOKING EQUIPMENT, POOL AND SPA HEATERS, AND FIREPLACES: PILOT LIGHTS PROHIBITED**

Any natural gas system or equipment, meeting the requirements of *Section 100.0 (e)2A*, listed below may be installed only if it does not have a continuously burning pilot light:

- (a) Fan-type central furnace.
- (b) Household cooking appliances.  
Exception to Section 110.5(b): Household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr.
- (c) Pool heaters.
- (d) Spa heaters.
- (e) Indoor and outdoor fireplaces.

#### **§ 110.10 – MANDATORY REQUIREMENTS FOR SOLAR READY BUILDINGS AND SOLAR PANEL SYSTEM REQUIREMENTS FOR NON-RESIDENTIAL NEW BUILDINGS**

(a) **Covered Occupancies.**

1. **Single Family Residences.** Single family residences located in new subdivisions with ten or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete or approved by the enforcement agency, which do not have a photovoltaic system installed, shall comply with the requirements of Section 110.10(b) through 110.10(e).
2. **Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed shall comply with the requirements of Section 110.10(b) through 110.10(d).
3. **Hotel/Motel Occupancies and High-rise Multifamily Buildings.** Hotel/motel occupancies and high-rise multifamily buildings with ten habitable stories or fewer shall comply with the requirements of Section 110.10(b) through 110.10(d). The minimum solar photovoltaic system required is 2 watts per square foot of the building footprint or right-sized PV system shall be installed.
4. **Nonresidential Buildings.** Nonresidential buildings with three habitable stories or fewer, other than healthcare facilities, shall comply with the requirements of Section 110.10(b) through 110.10(d). The minimum solar photovoltaic system required is 2 watts per square foot of the building footprint or right-sized PV system shall be installed.

(b) **Solar Zone.**

1. **Minimum Solar Zone Area.** The solar zone shall have a minimum total area as described below. The solar zone shall comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area shall be comprised of areas that have no dimension less than five feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet.

A. **Single Family Residences.** The solar zone shall be located on the roof or overhang of the building and have a total area no less than 250 square feet.

**Exception 1 to Section 110.10(b)1A:** Single family residences with a permanently installed domestic solar water-heating system meeting the installation criteria specified in the Reference Residential Appendix RA4 and with a minimum solar savings fraction of 0.50.

**Exception 2 to Section 110.10(b)1A:** Single family residences with three habitable stories or more and with a total floor area less than or equal to



2000 square feet and having a solar zone total area no less than 150 square feet.

**Exception 3 to Section 110.10(b)1A:** Single family residences located in the Wildland-Urban Interface Fire Area as defined in Title 24, Part 2 and having a whole house fan and having a solar zone total area no less than 150 square feet.

**Exception 4 to Section 110.10(b)1A:** Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 90 degrees and 300 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

**Exception 5 to Section 110.10(b)1A:** Single family residences having a solar zone total area no less than 150 square feet and where all thermostats are demand responsive controls and comply with Section 110.12(a), and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.

**Exception 6 to Section 110.10(b)1A:** Single family residences meeting the following conditions:

A. All thermostats are demand responsive controls that comply with Section 110.12(a), and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.

B. Comply with one of the following measures:

i. Install a dishwasher that meets or exceeds the ENERGY STAR Program requirements with a refrigerator that meets or exceeds the ENERGY STAR Program requirements, a whole house fan driven by an electronically commutated motor, or an SAE J1772 Level 2 Electric Vehicle Supply Equipment (EVSE or EV Charger) with a minimum of 40 amperes; or

ii. Install a home automation system capable of, at a minimum, controlling the appliances and lighting of the

dwelling and responding to demand response signals; or

iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the California Plumbing Code and any applicable local ordinances; or

iv. Install a rainwater catchment system designed to comply with the California Plumbing Code and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

**B. Low-rise and High-rise Multifamily Buildings, Hotel/Motel Occupancies, and Nonresidential Buildings.** The solar zone shall be located on the roof or overhang of the building or on the roof or overhang of another permitted structure located within 250 feet of the building or on covered parking installed with the building project, and shall have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.

**Exception 1 to Section 110.10(b)1B:** High-rise Multifamily Buildings, Hotel/Motel Occupancies, and Nonresidential Buildings with a permanently installed solar electric system having a nameplate DC power rating, measured under Standard Test Conditions, of no less than one watt per square foot of roof area.

**Exception 2 to Section 110.10(b)1B:** High-rise multifamily buildings, hotel/motel occupancies with a permanently installed domestic solar water-heating system complying with Section 150.1(c)8Biii and an additional collector area of 40 square feet.

**Exception 3 to Section 110.10(b)1B:** Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 90 degrees and 300 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

**Exception 4 to Section 110.10(b)1B:** Low-rise and high-rise multifamily buildings with thermostats in each dwelling unit that are demand response controls in compliance with Section 110.12(a), and are capable of

receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency. In addition, either A or B below:

A. In each dwelling unit, comply with one of the following measures:

i. Install a dishwasher that meets or exceeds the ENERGY STAR Program requirements with either a refrigerator that meets or exceeds the ENERGY STAR Program requirements or a whole house fan driven by an electronically commutated motor; or

ii. Install a home automation system that complies with Section 110.12(a) and is capable of, at a minimum, controlling the appliances and lighting of the dwelling and responding to demand response signals; or

iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the California Plumbing Code and any applicable local ordinances; or

iv. Install a rainwater catchment system designed to comply with the California Plumbing Code and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

B. Comply with Title 24, Part 11, Section A4.106.8.2 requirements for electric vehicle charging spaces.

**Exception 5 to Section 110.10(b)1B:** Buildings where the roof is designed and approved to be used for vehicular traffic or parking or for a heliport.

**Exception 6 to Section 110.10(b)1B:** Vegetative roofs covering 35 percent of the roof area or greater, meeting all relevant code requirements including considerations for wind, fire, and structural loads.

**Exception 7 to Section 110.10(b)1B:** Performance equivalency approved by the Building Official.

2. **Azimuth.** All sections of the solar zone located on steep-sloped roofs shall be oriented between 90 degrees and 300 degrees of true north.

3. **Shading.**

A. No obstructions, including but not limited to, vents, chimneys, architectural features, and roof mounted equipment, shall be located in the solar zone.

B. Any obstruction, located on the roof or any other part of the building that projects above a solar zone shall be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.

**Exception to Section 110.10(b)3:** Any roof obstruction, located on the roof or any other part of the building, that is oriented north of all points on the solar zone.

C. The solar zone needs to account for shading from obstructions that may impact the area required in 110.10(b)1B. When determined by the Building Official that conditions exist where excessive shading occurs and solar zones cannot be met, a performance equivalency approved by the Building Official may be used as an alternative.

4. **Structural Design Loads on Construction Documents.** For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

**Note:** Section 110.10(b)4 does not require the inclusion of any collateral loads for future solar energy systems.

(c) **Interconnection Pathways.**

1. The construction documents shall indicate a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service.

2. For single family residences and central water-heating systems, the construction documents shall indicate a pathway for routing of plumbing from the solar zone to the water-heating system.

(d) **Documentation.** A copy of the construction documents or a comparable document indicating the information from Sections 110.10(b) through 110.10(c) shall be provided to the occupant.

(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".

## **ARTICLE 10. GREEN BUILDING CODE**

### **SECTION 9210. AMENDMENTS TO THE 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE.**

#### **Definitions:**

**ELECTRIC VEHICLE (EV) Capable.** A listed electrical panel with sufficient capacity to provide a minimum 20 amperes to a designated charging space. Raceways from the electrical panel to the charging space(s) shall be installed to a charging space(s) only in locations that will be inaccessible in the future, either underground or where penetrations through walls, floors, or other partitions would otherwise be required for future installation of branch circuits. Raceways shall be at least 1" diameter and may be sized for multiple circuits as allowed by the California Electrical Code. The electric panel circuit directory shall identify the overcurrent protection device space(s) reserved for EV charging as "EV CAPABLE." Construction documents shall identify the location of the raceway from the panel to the charging space.

**LEVEL 1 ELECTRIC VEHICLE (EV) READY SPACE.** A complete electric circuit with a minimum 20-ampere capacity, including electrical panel capacity, overcurrent protection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, conductors, and either a) a receptacle, labelled "Electric Vehicle Outlet" with a minimum ½" font, adjacent to the parking space, or b) electric vehicle supply equipment (EVSE).

**LEVEL 2 ELECTRIC VEHICLE (EV) READY SPACE.** A complete electric circuit with a minimum 208/240 Volt, 40-ampere capacity, including electrical panel capacity, overcurrent protection device, a minimum 1" diameter raceway that may include multiple circuits as allowed by the California Electrical Code, conductors, and either a) a receptacle, labelled "Electric Vehicle Outlet" with a minimum ½" font, adjacent to the parking space, or b) electric vehicle supply equipment (EVSE) with a minimum output of 30 amperes.

**ELECTRIC VEHICLE CHARGING STATION (EVCS).** One or more electric vehicle charging spaces that include the installation of electric vehicle supply equipment (EVSE) with a minimum capacity of 30 amperes connected to a circuit serving a Level 2 EV Space. EVCS installation may be used to satisfy a Level 2 EV Ready Space requirement.

**AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS).** A control system that allows multiple EV chargers or EV-Ready electric vehicle outlets to share an electrical circuit and automatically reduce power at each charger. ALMS systems must be designed to deliver at least 1.4kW to each EV Capable, EV Ready, or EVCS space served by the ALMS. 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.

## SECTION 4 RESIDENTIAL MANDATORY MEASURES

**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. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

**Exceptions:**

1. Where there is no commercial power supply
2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU)

**4.106.4.1 New one- and two-family dwellings and town- houses 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 “Level 2 EV-Ready”.

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

1. 10% 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.
2. In addition, 40% of the remaining dwelling units with parking space(s) shall be provided with at least a Level 1 EV Ready Space.

**Notes:**

1. ALMS may be installed to decrease electrical services and transformer capacity associated with EV Charging Equipment subject to review of the authority having jurisdiction.
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. The County of San Mateo may consider allowing exceptions, on a case by case basis, if a building permit applicant provides

documentation detailing that an increased cost of utility service or on-site transformer capacity would exceed an average of \$4,500 among charging spaces with Level 2 EV Ready Spaces and Level 1 EV Ready Spaces. If costs are found to exceed this level, the applicant shall provide EV infrastructure up to a level that would not exceed this cost for utility service or on-site transformer capacity.

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**4.106.4.2.2 Electric vehicle charging space (EV space) dimensions.** Refer to the County of San Mateo Planning and Building Department Zoning Regulations for parking space dimension requirements.

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## **SECTION 5 NONRESIDENTIAL MANDATORY MEASURES**

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**5.106.5.3 Electric vehicle (EV) charging. [N]** 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 of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the *California Building Code*, the *California Electrical Code* and as follows:

**Exceptions:**

1. Where there is no commercial power supply.
2. Spaces accessible only by automated mechanical car parking systems are excepted from providing EV charging infrastructure.

**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.

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:**

1. 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;
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](http://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](http://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. It is encouraged that for shared parking, EV Ready Spaces are designated as "EV preferred."

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

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