



TOWN OF FAIRFAX

STAFF REPORT

October 6, 2022

TO: Mayor and Town Council

FROM: Sean Youra, Climate Action Coordinator
Mark Lockaby, Building Official

SUBJECT: Discuss Green Building Model Reach Code and provide direction to staff

RECOMMENDATION

Provide staff direction as to whether to include certain requirements of the green building model reach code as part of the adoption of the 2022 California Building Standards Code.

BACKGROUND

Title 24 of the California Code of Regulations contains the California Building Standards Code (also referred to herein as “Building Code”), which governs the design and construction of buildings, associated facilities, and equipment in the state. California updates these requirements every three years with the next iteration, the 2022 Building Code cycle, going into effect on January 1, 2023. All jurisdictions must adopt at least the minimum standards of the Building Code; however, State law authorizes local agencies to enact local amendments to the Building Code if reasonably necessary because of local climatic, geological, or topographical conditions (Health and Safety Code sections 18941.5 and 17958.7).

At its September 1, 2021 meeting, the Council adopted Ordinance 856 that required all newly constructed buildings to be all-electric buildings as of March 1, 2022. In doing so, Fairfax became the first jurisdiction in Marin County to require all-electric buildings for new construction. As of August 2022, 60 California jurisdictions (including Fairfax, San Anselmo, Petaluma, Contra Costa County, Santa Clara County, Oakland, San Jose, and San Francisco) have adopted ordinances requiring all-electric buildings for new construction.

The County of Marin in collaboration with local jurisdiction staff have been developing a green building model reach code since September 2021 that includes additional requirements that go beyond the 2022 Building Code, specifically for new construction and remodels of existing buildings. To develop the model reach code, County staff led a comprehensive community engagement strategy. This included engaging and garnering feedback from City, Town, and County staff; community-based organizations including environmental, affordable housing, senior/aging-in-place, and equity priority advocates; building community including developers, architects, realtors, contractors and Marin Builders Association; utilities including MCE and PG&E; and Town and City commission, subcommittee, and City Council members. Formal engagements were held with key stakeholders including (i) five monthly technical working meetings consisting of City and Town building officials and planners, (ii) one public community workshop, and (iii) three focus group workshops with the wide swath of community members

mentioned above. Comments on the model reach code were publicly solicited through various outreach channels (e.g., partner organization listservs, presentations, newsletters, and social media). Feedback was collected via an online survey created by County staff. A majority of respondents were in favor of all of the model reach code requirements.

In addition to the County-led outreach, Town and County staff have presented to the Climate Action Committee (CAC) on the requirements of the model reach code and solicited feedback from CAC members. Town staff has also solicited feedback from the Fairfax community regarding the key components of the model code by sharing a link to the County's reach code survey in a recent newsletter.

The culmination of this outreach is reflected in the model reach code (Attachment 1). A summary of the key policy components of the model reach code has also been provided by County staff (Attachments 2-4).

DISCUSSION

In the following sections, the key policy components of the model reach code will be discussed along with staff recommendations for Council consideration to aid in deciding what, if any, of the model code elements to include in the 2022 Building Code adoption.

All-Electric New Construction for Residential and Nonresidential Buildings

This component of the model code requires all-electric for newly constructed buildings including both residential and nonresidential buildings (Attachment 2). For comparison, minimum standards under the 2022 Building Code require all new residential projects to include either electric space heating or electric water heating. The requirements and exemptions of this component of the model code were modeled off of Fairfax's all-electric ordinance and similar jurisdiction ordinances.

Since the Town already has adopted an all-electric ordinance for new construction, staff recommends not including this component of the model code in the 2022 Building Code adoption and instead recommends maintaining its existing all-electric ordinance.

Prior to the model reach code being drafted, CAC members had voted on recommending the Council amend the existing all-electric ordinance for new construction to include substantial remodels and other modifications, which was approved by all members at their February 15, 2022 meeting. This recommendation is also listed on the CAC's 2022-23 Annual Action Plan. The recommendation was based on one of the Climate Action Plan's (CAP) measures, E-1: Ordinances for Construction of Energy-Efficient Buildings, which includes, "Adopt requirements to phase out natural gas, beginning with new construction, then substantial remodels."

At this time, staff does not recommend amending the all-electric ordinance to include substantial remodels due to the costs it could impose on project applicants. Staff estimates that additional costs to require all-electric appliances and the necessary electrical panel upgrades that would be required to provide sufficient capacity for those appliances could range anywhere from \$16,350 - \$27,000. These costs would be in addition to the costs project applicants already have to pay as part of the Planning Commission approval process, as well as for building permit fees, plan review, assessments, installation of fire suppression sprinkler

systems, and sewer lateral replacement, all of which can range anywhere from \$32,500 - \$52,500. There is concern that these additional costs could cause residents considering substantial remodels to scale back their project below the substantial remodel threshold, or move forward with the project without obtaining a permit.

Flexible Compliance Pathway for Existing Single-Family Residential Building Renovations

This component of the model code amends Part 6 (i.e., the Energy Code) of the 2022 Building Code and requires existing single-family residences undergoing additions or alterations to implement additional energy efficiency and electrification measures beyond the 2022 Building Code (Attachment 3). Additional energy savings are achieved through a performance compliance pathway recently developed by the State. The Flexible Compliance Pathway is a points-based system allowing homeowners and contractors to select from a comprehensive menu of energy efficiency and electrification measures that are appropriate for the scope of their project. This requirement applies to single-family additions and alterations affecting 750 or more square feet for homes that were originally permitted for construction before December 31, 2010. The additional energy efficiency standards proposed for the single-family additions and alterations have been demonstrated to be cost-effective in modeling studies completed by the Statewide Reach Codes Program. In addition, for kitchen and/or laundry room remodels, as well as any electrical panel upgrades, this component of the model code requires electrical panel upgrades to accommodate for future electrification of all appliances. Exemptions based on hardship, infeasibility, income qualification, and other considerations are also specified in Attachment 3.

Staff recommends this component of the model code be included in the 2022 Building Code adoption with the following revisions:

- Eliminate most of the hardship exemptions and only allow hardship exemptions in the following cases:
 1. The cost of achieving compliance is disproportionate to the overall cost of the project.
 2. Strict compliance with the standards would create or maintain a hazardous condition(s) and present a life safety risk to the occupants.
- Change the square footage threshold from 750 square feet to 200 square feet. Most of the additions and alterations in Fairfax range from 200-250 square feet, so by lowering the threshold more projects would be subject to the Flexible Compliance Pathway requirements. This would not impact the development of new ADUs or JADUs, which are exempt under the model code.
- Utilize a target factor of 50% for substantial remodels of single-family residences rather than a target factor of 40% as the model code currently includes for remodels affecting 750 or more square feet. This would raise the target scores for all building vintages in Table 2, Climate Zone 2 (applicable to Fairfax) of the model code (Attachment 1) as follows:
 1. Pre-1979 Building Vintage Target Score: 15
 2. 1979-1992 Building Vintage Target Score: 11
 3. 1993-2011 Building Vintage Target Score: 7

In effect, this would incentivize substantial remodel projects to install electric appliances with higher point allocations such as HVAC heat pumps that otherwise might not be installed using the target score thresholds defined in the model reach code.

Alternatively, higher target scores for substantial remodels could encourage a greater combination of electrification and energy efficiency measures to be installed.

The Flexible Compliance Pathway allows project applicants to choose what energy efficiency and electrification measures make the most sense for the given project and which measures are most cost-effective to implement. Staff views the Flexible Compliance Pathway as a logical stepping stone towards eventual all-electric requirements for remodels and/or time-of-replacement requirements upon burnout of gas appliances by ensuring homes are electric-ready and progressing the transition to install electric appliances in existing homes. As previously mentioned, the electrification and energy efficiency measures included in Table 2 of the model code have already been demonstrated to be cost-effective in modeling studies by the Statewide Reach Codes Program. Therefore, the Town would not have to conduct additional studies and submit them to the California Energy Commission (CEC), which would be the case if the Town tried to adopt alternative energy code requirements. The Flexible Compliance Pathway in the model code is also aligned with the 2021-2022 Marin County Civil Grand Jury report titled, *Electrifying Marin's Buildings: A Countywide Approach*, which included the following recommendation:

“On or before January 1, 2023, Marin County and each of its cities and towns that have not already done so should adopt a reach code requiring energy efficiency measures in connection with renovations of existing residential buildings. The reach code should specify the size of the renovation that will trigger the requirement and provide flexibility by allowing the applicant to choose from a list of energy efficiency measures, including electrification of gas appliances.”

CALGreen Tier 1 Provisions for New Construction and Additions/Alterations

This component of the model code amends Part 11 (i.e., CALGreen) of the 2022 Building Code. It requires all new construction, additions and alterations affecting 750 or more square feet of existing single-family and multifamily buildings, and nonresidential additions and alterations to comply with CALGreen Tier 1 provisions except for certain electric vehicle (EV) infrastructure provisions as described in the next section.

Staff recommends this component of the model code be included in the 2022 Building Code adoption with the following revisions:

- Change the square footage threshold from 750 square feet to 200 square feet for the reasons described in the prior section.

Although the CAC has not held a formal vote on recommending the Council adopt CALGreen Tier 2, the CAC's 2022-23 Annual Action Plan includes adopting CALGreen Tier 2 under the Built Environment actions. Staff does not recommend CALGreen Tier 2 be included in the 2022 Building Code adoption and instead recommends CALGreen Tier 1 be included in the Building Code adoption as specified in the model code. Fairfax has historically adopted CALGreen Tier 1 including for the previous code cycle in 2019. Additionally, no other Marin jurisdictions have adopted Tier 2 and will likely not be adopting Tier 2 for this code cycle. The

CALGreen Code cautions jurisdictions that may be considering adopting CALGreen Tier 2 stating, “The measures necessary to achieve Tier 2 status are very stringent. Cities, counties, and cities and counties considering adoption of Tier 2 as mandatory should carefully consider the stringency of each measure and ensure that the measures are achievable in their location.” Therefore, to consider including CALGreen Tier 2 in the adoption of the 2022 Building Code would require staff to analyze whether each applicable Tier 2 measure is feasible to be implemented for building projects in Fairfax and identify what the potential impacts might be on residents and businesses.

Electric Vehicle Reach Code for New Construction and Renovations

This component of the model code amends Part 11 (i.e., CALGreen) of the 2022 Building Code. It requires that all new construction comply with CALGreen Tier 1 EV infrastructure provisions for the applicable building type, as specified in Attachment 4. Only State minimum standards will be required for nonresidential grocery, retail, or warehouses planning for off-street medium-heavy duty vehicles. This component of the model code exceeds the CALGreen provisions for renovations by requiring single-family homes to be EV Ready if the project is upgrading the main electrical service panel. For both multifamily and nonresidential renovations, the model code also exceeds CALGreen provisions by requiring designated electrical capacity for 20% of onsite parking spaces to be EV Capable if modifying the main electrical service panel. Additionally, for multifamily and nonresidential renovations that modify the parking lot surface, either conduit must be added to a minimum of 50% of exposed parking spaces, or a minimum 5% EV Charging Stations (EVCS) must be installed to parking spaces requiring any combination of Level 2 and Direct Current Fast Charging EV Supply Equipment (EVSE), except at least one Level 2 EVSE must be provided. The 2022 Building Code misses the opportunity to maximize this moment when parking lot surfaces and/or service panels are upgraded. By requiring the installation of EV infrastructure at time of parking lot upgrades, developers can fully benefit from construction savings and install valuable amenities for their occupants.

Staff recommends this component of the model code be included in the 2022 Building Code adoption with the following revisions:

- Only apply CALGreen Tier 1 EV infrastructure provisions to new construction for single-family buildings and nonresidential buildings.
- For new multifamily building construction, apply the following requirement:
 - Of the total parking spaces, 15% must be Level 2 EVCS and 85% must be Low Power Level 2 EV Ready.

This requirement would ensure that 100% of units in any new multifamily building with parking spaces have access to charging capabilities. In contrast, CALGreen Tier 1 EV infrastructure provisions only provide access to charging capabilities for 35% of parking spaces (if less than 20 units) and 45% of parking spaces (if greater than 20 units). The requirement is modeled off of the “High Power Option” in the Bay Area EV Reach Codes developed by Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), and East Bay Community Energy (EBCE) (Attachment 5).

- For multifamily and nonresidential renovations that modify the service panel, revise the model code requirement such that electrical capacity must be added for 20% of onsite parking spaces to be Level 2 EV Ready.

- For multifamily and nonresidential renovations that modify the parking lot surface, revise the model code requirement such that conduit must be added to a minimum of 25% of exposed parking spaces and a minimum 5% of EVCS must be installed to parking spaces requiring any combination of Level 2 and Direct Current Fast Charging EVSE, except at least one Level 2 EVSE must be provided.

These recommended revisions are aligned with what County staff will likely recommend for their 2022 Building Code adoption, and several other Bay Area jurisdictions (e.g., Berkeley, Half Moon Bay, Albany) will be deviating from the CALGreen EV infrastructure provisions for their own 2022 Building Code adoption in order to provide greater access to charging capabilities in multifamily buildings. If included as part of the 2022 Building Code adoption, these EV charging infrastructure requirements will allow the Town to make significant progress in terms of EV adoption and implementation of Measure T-1: Zero Emission Vehicles in the CAP, which represents the largest potential for emissions reductions by 2030 (i.e., a potential 10,648 MTCO_{2e} emissions reduction if 100% of passenger vehicles used by Fairfax residents and businesses are ZEVs in 2030 and all charge with 100% GHG-free electricity). As it relates to EV reach codes, Measure T-1 specifically calls for:

- Implementing more stringent requirements for pre-wiring new single-family and multifamily construction, as well as substantial remodels, for EV chargers.
- Requiring new and remodeled commercial projects to install a minimum number of electric vehicle chargers for use by employees, customers, and residents.

Under Measure E-1: Ordinances for Construction of Energy-Efficient Buildings in the CAP, it calls for adopting the most aggressive reach codes in the County and State. Staff believes that if all the requirements discussed in the previous sections are included in the adoption of the 2022 Building Code, this will represent one of the most aggressive reach codes in both the County and State while also balancing other important considerations such as the need to build more affordable housing and ensure equity when implementing climate solutions. If Council directs staff to include the proposed reach code in the 2022 Building Code, staff will evaluate the effectiveness of this reach code once implemented to determine if more stringent requirements may be required in the future to meet the Town's climate goals. Finally, staff will continue to promote existing financial incentives for energy efficiency and electrification renovations provided by BayREN, Electrify Marin, and other organizations, as well as develop rebate programs and other incentives to encourage residents and businesses to install electric appliances.

FISCAL IMPACT

Staff time to review the draft ordinance, if directed by Council.

ATTACHMENTS

1. Model Reach Code
2. Policy Summary Sheet: New Construction All-Electric for All Residential and Nonresidential Buildings
3. Policy Summary Sheet: Existing Single-Family Residential Building Renovations
4. Policy Summary Sheet: Electric Vehicle Reach Code
5. Bay Area Reach Code for EV Charging Infrastructure

1 **County of Marin DRAFT Model REACH code. This version is for reference as a**
2 **template, whole or in-part. It does not reflect the final code to be adopted by the**
3 **County.**

4 For a High Level Summary of Key Policy Components see the following:

- 5 1. All-Electric for New Construction
- 6 2. Renovations or Additions and Alterations for Single-Family Homes Only
- 7 3. Electric Vehicle Reach Code Infrastructure Requirements

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9 **19.04.110 Purpose.**

10 The purpose of this chapter is to meet or exceed all applicable mandatory measures
11 of the 2022 California Green Building Standards Code (Title 24, Part 11) and 2022
12 California Energy Code (Title 24, Part 6) of the California Code of Regulations.
13 Pursuant to Health and Safety Code Sections 17958.7 and 18941.5, the Marin County
14 Board of Supervisors hereby finds the following all-electric construction and green
15 building modifications to California Green Building Standards Code Chapters 3, 4 and 5,
16 as set forth in this subchapter, are reasonably necessary to address local climatic,
17 geologic, environmental and/or topographic conditions that affect the health, safety, and
18 welfare of residents, including flooding/sea level rise, wildfire risk, and seismic risk

19 The green building provisions referenced in this chapter are designed to achieve the
20 following objectives:

- 21 (1) Increase energy efficiency in buildings;
- 22 (2) Reduce consumption of fossil fuels in Marin County;
- 23 (3) Encourage water and resource conservation;
- 24 (4) Reduce waste generated by construction projects;
- 25 (5) Reduce long-term building operating and maintenance costs;
- 26 (6) Improve indoor air quality and occupant health;
- 27 (7) Contribute to meeting state and local commitments to reduce greenhouse gas
28 emissions;
- 29 (8) Satisfy all applicable mandatory measures of the 2022 California Green
30 Building Standards Code (Title 24, Part 11) of the California Code of
31 Regulations.

32 **19.04.115 Applicability.**

33 The provisions of this chapter shall apply to all construction or development projects
34 defined below as a "covered project."

35 **19.04.120 Definitions.**

36 For the purposes of interpreting this chapter and the associated standards for
37 compliance, the following terms are defined as follows. When the definitions below differ
38 from those contained elsewhere in this title, the provisions of this chapter shall apply.
39 These definitions are additional to those outlined in Chapter 2 of the California Green
40 Building Standards Code, Title 24, Part 11.

- 41 (1) "2022 California Energy Code" refers to the requirements outlined in the 2022
42 edition of the California Energy Code known as California Code of Regulations,
43 Part 6 of Title 24.
- 44 (2) "All-electric Building" or "All-electric Design" means a building or plans for a
45 building that uses a permanent supply of electricity as the source of energy for
46 all space heating (including but not limited to fireplaces), water heating
47 (including but not limited pools and spas), cooking appliances (including but
48 not limited barbeques), and clothes drying appliances, and has no natural gas
49 or propane plumbing installed in the building or within the property lines. An
50 all-electric building also includes solar thermal collectors.
- 51 (3) "Accessory Dwelling Unit (ADU)" means a residential unit that meets the
52 definition of an accessory dwelling unit as outlined in [§22.130.030](#) in the
53 County of Marin Article VIII - Development Code Definition. This states that
54 "a residential dwelling unit, which is accessory to a primary dwelling unit, that
55 provides complete independent living facilities for one or more persons and is
56 located on a lot with a proposed or existing primary dwelling. It shall provide
57 permanent provisions for living, sleeping, eating, cooking, sanitation, and
58 independent exterior access, on the same lot as the single-family or multi-
59 family dwelling is or will be situated. An Accessory Dwelling Unit also includes
60 the following: (1) an efficiency unit as defined in [section 17958.1](#) of the
61 California Health and Safety Code and (2) a manufactured home as defined
62 in section 18007 of the California Health and Safety Code." For purposes of
63 this subchapter, ADU also covers Junior ADUs and detached or attached
64 ADUs.
- 65 (4) "Automatic Load Management System (ALMS)" means a system designed to
66 manage load across one or more electric vehicle supply equipment (EVSE) to
67 share electrical capacity and/or automatically manage power at each
68 connection point.
- 69 (5) "CALGreen" refers to the California Green Building Standards Code, as
70 included in Title 24, Part 11 of the California Code of Regulations.

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- 71 (6) "CALGreen mandatory" means those measures that are required for all
72 covered projects. Residential mandatory measures are contained in CALGreen
73 Chapter 4. Nonresidential mandatory measures are contained in CALGreen
74 Chapter 5.
- 75 (7) "CALGreen Tier 1" refers to required prerequisite and elective measures in
76 addition to the CALGreen mandatory measures, as outlined in CALGreen
77 Appendix A4.601.4 for residential projects and CALGreen Appendix A5.601.2
78 for nonresidential projects.
- 79 (8) "Commercial Kitchen" means non-retail food facility devoted to the commercial
80 preparation, production, and cooking of food and beverages for on-site or off-
81 site consumption.
- 82 (9) "Cooking Equipment" means equipment intended for commercial use, including
83 ovens, ranges, and cooking appliances for use in a commercial kitchen and
84 restaurant where food is dispensed.
- 85 (10) "Covered Project(s)" means a development project provided below as set forth
86 by the standards for compliance outlined in §19.04.140, Table 1, 2, or 3 for
87 which one or more building permits are required:
- 88 (i) All residential and nonresidential new construction and newly constructed
89 buildings as defined below in §19.04.120(24) and (25), respectively;
90 and/or
- 91 (ii) Additions or alterations to an existing Single-Family residential building
92 originally permitted for construction on or before December 31, 2010,
93 except for projects less than 750 square feet. Existing Single-Family
94 residential buildings originally permitted for construction on or after
95 January 1, 2011 are considered newer homes and not covered under this
96 subchapter.
- 97 (11) "Electric Vehicle (EV) Capable" means a vehicle space with electrical panel
98 space and load capacity to support a branch circuit and necessary raceways,
99 both underground and/or surface mounted, to support EV charging.
- 100 (12) "EV Ready" means a vehicle space which is provided with a branch circuit; any
101 necessary raceways, both underground and/or surface mounted, to support EV
102 charging.
- 103 (13) "EV Charging Space (EV Space)" means a space intended for future
104 installation of EV charging equipment and charging of electric vehicles.
- 105 (14) "EV Charging Station (EVCS)" means one or more electric vehicle charging
106 spaces served by electric vehicle charger(s) or other charging equipment
107 allowing charging of electric vehicles. Electric vehicle charging stations are not
108 considered parking spaces.
- 109 (15) "EV Supply Equipment (EVSE)" means the conductors, including the
110 undergrounded, grounded and equipment grounding conductors and the

- 111 electric vehicle connectors, attachment plugs, and all other fittings, devices,
112 power outlets or apparatus installed for the purpose of transferring energy
113 between the premises wiring and the electric vehicle.
- 114 (16) "Essential Services Building" means a facility as defined by the California
115 Health and Safety Code [section 16007](#), as amended from time to time. For
116 purposes of this chapter, essential services buildings are publicly owned and/or
117 publicly operated buildings whose purpose is to safeguard the public health
118 and safety. Essential services buildings generally exclude privately owned
119 residences and/or commercial buildings; except that, privately owned
120 commercial buildings may qualify as essential services buildings to the extent
121 they are publicly operated to safeguard the public health and safety.
- 122 (17) "Food Service Establishment" means any newly constructed or new
123 construction building with construction plans for a commercial kitchen or
124 cooking equipment.
- 125 (18) "Industrial process heat" shall be defined as a process or manufacturing
126 equipment for which sustained temperatures typically in excess of three
127 hundred fifty degrees Fahrenheit are required and demonstrably not
128 achievable with commercial electric equipment.
- 129 (19) "Low Power Level 2 EV Charging Receptacle" means a 208/240-volt 20
130 ampere minimum branch circuit and a receptacle for use by an EV driver to
131 charge their electric vehicle or hybrid electric vehicle.
- 132 (20) "Mixed-fuel" means a building or unit in a building that is plumbed for the use of
133 natural gas or propane as fuel for space heating, water heating, cooking or
134 clothes drying appliances or has gas plumbing connected to a gas meter or
135 propane tank.
- 136 (21) "Modified parking lot" shall be those for which paving material and curbing is
137 removed.
- 138 (22) "Natural gas" is the same meaning as "Fuel Gas" as defined in the California
139 Plumbing Code and Mechanical Code.
- 140 (23) "Natural gas infrastructure" means fuel gas piping, other than service pipe, in
141 or in connection with a building, structure or within the property lines of
142 premises, extending from the point of delivery at the meter, service meter
143 assembly, outlet of the service regulator, service shutoff valve, or final pressure
144 regulator, whichever is applicable, as specified in the California Mechanical
145 Code and Plumbing Code.
- 146 (24) "New Construction" means a building that meets the definition of a demolition
147 as outlined in [§22.130.030](#) in the County of Marin Article VIII - Development
148 Code Definition. This states that "for buildings, removal or substantial
149 modification of more than seventy-five percent of the linear sum of a
150 building's exterior walls for each story shall be considered demolition of the
151 building." Any existing building that is demolished to this level will be required

- 152 to comply with the requirements for all-electric construction in newly
153 constructed and new construction buildings outlined in §19.04.125.
- 154 (25) "Newly Constructed" means a building that has never before been used or
155 occupied for any purpose.
- 156 (26) "Qualified green building rater" means an individual who has been trained and
157 certified as a CALGreen inspector, LEED AP w/a specialty, GreenPoint rater,
158 PHIUS consultant, or has similar qualifications and certifications if acceptable
159 to the chief building official.
- 160 (27) "Single-Family" means a building designed for and/or occupied exclusively by
161 one family. It is used herein to describe one and two-family dwellings and
162 townhouses with attached private garages. Also includes factory-built, modular
163 housing units, constructed in compliance with the California Building Code
164 (CBC), and mobile homes/manufactured housing on permanent foundations
165 and agricultural worker housing.

166

167 **19.04.125 Requirements for all-electric construction in newly constructed and**
168 **new construction buildings**

- 169 (a) Newly Constructed Buildings and buildings defined as New Construction in
170 §22.130.030 of the County of Marin Article VIII - Development Code must
171 satisfy the definition of an all-electric building and/or design, except as
172 otherwise described below:
- 173 (i) Emergency electrical generation back-up power equipment for essential
174 services and multifamily buildings;
- 175 (ii) The use of portable propane appliances outside of the building envelope,
176 such as for outdoor cooking, refrigeration, and outdoor heating appliances;
- 177 (iii) The use of natural gas infrastructure for equipment requiring industrial
178 process heat;
- 179 (iv) Development projects that have obtained vested rights prior to the
180 effective date of this chapter pursuant to a preliminary affordable housing
181 project application in accordance with Government Code Section
182 65589.5(o), a development agreement in accordance with Government
183 Code Section 65866, a vesting tentative map in accordance with
184 Government Code 66998.1, or pursuant to the ruling in Avco Community
185 Developers Inc. v. South Coast Regional Communication (1976) 17 Cal.
186 3d 785, or pursuant to other applicable statutory or case law. (Ord. 2775
187 NCS §5, 2021.); and
- 188 (v) Food service establishments as defined in §19.04.120(17) and described
189 in §19.04.180.

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- 190 (vi) New ADUs and JADUs that are attached or wholly within an existing
191 mixed-fuel residential building may utilize natural gas appliances.
- 192 (b) Requirements are outlined by project type and size in §19.04.140, Table 1
- 193 (c) This subchapter shall in no way amend the 2022 California Energy Code, Title
194 24 part 6, nor require the use or installation of any specific appliance or
195 system.
- 196 (d) Applicants are ineligible to apply for and the building official may not grant
197 permits that would convert an all-electric building to a mixed-fuel building
198 where the application was submitted on or after the effective date of this
199 chapter.
- 200 (e) To the extent that natural gas infrastructure is permitted, it shall be permitted to
201 extend to any system, device, or appliance within a building for which an
202 equivalent all-electric design is not available.
- 203 (f) Newly constructed and New Construction buildings shall nonetheless be
204 required at a minimum to have sufficient electric capacity, wiring, and conduit
205 to facilitate future full building electrification.
- 206 (g) The requirements of this subchapter shall be deemed objective planning
207 standards under Cal. Gov't Code section 65913.4 and objective development
208 standards under Cal. Gov't Code section 65589.5

209 **19.04.130 Requirements for additions and alterations - Local amendments to 2022**
210 **California Energy Code.**

211 Pursuant to §19.04.010(6), the county has adopted the 2022 edition of the California
212 Energy Code known as California Code of Regulations, Part 6 of Title 24 with additions,
213 and deletions as provided in this subchapter.

214 The provisions of this subchapter shall constitute local amendments to the cross-
215 referenced provisions of the 2022 California Energy Code, and shall be deemed to
216 replace the cross-referenced sections of said Code with the respective provisions set
217 forth in this subchapter.

218 Section 100.0 of Chapter 1 of the 2022 California Energy Code is modified to add
219 new section (i) as follows:

- 220 (i) Single-Family Building Remodel Energy Reach Code - Purpose and Intent. In
221 addition to all requirements of the California Energy Code applicable to
222 Existing Single-Family Building additions and alterations, the energy efficiency
223 and renewable energy measures specified in Section 150.0(w) shall be
224 required for Covered Projects of mixed-fuel buildings.

225

226 Section 100.1(b) is modified by adding the following definitions:

227 **"All-electric Building" or "All-electric Design"** as defined in §19.04.120(2), Marin
228 County Code.

229 **"Covered Project(s)"** as defined in §19.04.120(10), Marin County Code.

230 **"Mixed-fuel"** building as defined in §19.04.120(20), Marin County Code.

231

232 Section 150.0 SINGLE-FAMILY RESIDENTIAL BUILDINGS – MANDATORY
233 FEATURES AND DEVICES, first two paragraphs, are modified to read as follows:

234 Existing Single-Family residential buildings shall comply with the applicable
235 requirements of Sections 150(a) through 150.0(v), and Covered Existing Single-
236 Family Projects, other than projects identified as all-electric construction for newly
237 constructed or new construction buildings in §19.04.125, Marin County Code, shall
238 comply with the applicable requirements of Section 150.0(w).

239 NOTE: The requirements of Sections 150.0(a) through 150.0(v) apply to newly
240 constructed buildings. Sections 150.2(a) and 150.2(b) specify which requirements of
241 Sections 150.0(a) through 150.0(v) also apply to additions or alterations, with the
242 exception that Covered Existing Single-Family Projects, other than projects identified
243 as all-electric construction for newly constructed or new construction buildings in
244 §19.04.125, Marin County Code, shall also be required to comply with Section
245 150.0(w).

246

247 A new Section, (w), is added to Section 150.0 as follows:

248 (w) Requirements for a Covered Project are outlined by project type in §19.04.140,
249 Table 1, Marin County Code. A Covered Existing Single-Family Project shall
250 install a set of measures from the Measure Menu in §19.04.140, Table 2, Marin
251 County Code, to achieve a total Measure Point Score that is equal to or greater
252 than the Target Score in said table and shall conform to the List of Measure
253 Specifications in §19.04.140, Table 3, Marin County Code., except as
254 otherwise described below:

255 (i) Projects identified as all-electric construction for newly constructed or new
256 construction buildings in §19.04.125, Marin County Code.

257 (ii) Projects less than 750 square feet.

258 (iii) Projects that are limited solely to a newly created attached Accessory
259 Dwelling Units (ADUs) or Junior Accessory Dwelling Unit (JADU) as
260 defined in §19.04.120(3), Marin County Code. A newly created ADU and
261 JADU shall include either additions or conversions of existing space. This
262 exception DOES NOT apply to a Covered Existing Single-Family Project
263 of an existing ADU or JADU.

-
- 264 (iv) Mobile Homes, Manufactured Housing, or Factory-built Housing as
265 defined in Division 13 of the California Health and Safety 12 Code
266 (commencing with [section 17000](#) of the Health and Safety Code).
- 267 (v) Due to conditions specific to the project, it is technically or economically
268 infeasible to achieve compliance, the chief building official may reduce the
269 Target Score and/or waive some or all of the mandatory requirements.
- 270 (vi) A resident owner or occupant demonstrates that they qualify for the
271 California Alternative Rates for Energy (CARE) or Family Electric Rate
272 Assistance (FERA) program may comply by installing one of the following
273 measures from the Measure Menu in §19.04.140, Table 2 and specified in
274 Table 3, Marin County Code:
- 275 (a) E2: Water Heating Package; or
276 (b) E5: Duct Sealing

277
278 In addition, all mandatory measures listed in §19.04.140, Table 2, Marin
279 County Code, shall be installed.

280 Measure verification shall be explicitly included as an addendum to the
281 Certificate of Compliance to be filed pursuant to 2022 Title 24 Section 10-103.

282

283 **19.04.135 Requirement for additions and alterations - Local amendments to 2022**
284 **CALGreen California Green Building Standards Code.**

285

286 Pursuant to §19.04.010(9), the county has adopted the 2022 edition of the California
287 Green Building Standards Code known as California Code of Regulations, Part 11 of
288 Title 24 (herein referred to as CALGreen Code) with additions, and deletions as
289 provided in this subchapter.

290 The provisions of this subchapter shall constitute local amendments to the cross-
291 referenced provisions of the 2022 CALGreen Code, and shall be deemed to replace the
292 cross-referenced sections of said Code with the respective provisions set forth in this
293 subchapter.

294 Section 202 of Chapter 2 of the 2022 CALGreen Code is hereby amended as
295 underlined:

296 *Electric Vehicle Charging Station.* One or more electric vehicle charging spaces
297 served by electric vehicle charger(s) or other charging equipment allowing charging
298 of electric vehicles. Electric vehicle charging stations are not considered parking
299 spaces. For purposes of determining compliance with accessibility requirements,
300 when the permitted length of time a vehicle may occupy an electric vehicle charging
301 station differs from the permitted duration of stay in publicly accessible parking

302 spaces in the same parking area, electric vehicle charging stations are not
303 considered parking spaces. When the permitted duration of stay in a space served
304 by electric vehicle charger(s) is the same as other publicly accessible parking
305 spaces in the same parking area, EVCS may be considered parking spaces. The
306 EVCS need not be reserved exclusively for electric vehicle charging.

307

308 Section 301.1 of Chapter 3 of the 2022 CALGreen Code is hereby amended as
309 underlined and struck through:

310 301.1 Scope. Buildings shall be designed to comply with applicable requirements of
311 Marin County Green Building Requirements beginning at Chapter 19.04.110, Marin
312 County Code, and shall also include the green building measures specified as
313 mandatory in the application checklists contained in this code.

314

315 Section 301.1.1 of Chapter 3 of the 2022 CALGreen Code is hereby amended as
316 underlined and struck through:

317 **301.1.1 Additions and alterations.** The mandatory provisions of Chapter 4 shall
318 be applied to additions and alterations of existing residential buildings ~~where the~~
319 ~~addition or alteration increases the building's conditioned area, volume or size.,~~ in
320 accordance with applicable requirements of Marin County Green Building
321 Requirements beginning at Chapter 19.04.110, Marin County Code. The
322 requirements shall apply only to and/or within the specific area of the addition or
323 alteration.

324 The mandatory provisions of section 4.106.4.2 may apply to additions or alterations
325 of existing parking facilities or the addition of new parking facilities or the addition of
326 new parking facilities serving existing multifamily buildings. See Section 4.106.4.3
327 for application.

328 **NOTE:** Repairs including, but not limited to, resurfacing, restriping, and repairing or
329 maintaining existing lighting fixtures are not considered alterations for the purpose
330 of this section.
331

332 Section 301.3 of Chapter 3 of the 2022 CALGreen Code is hereby amended as
333 underlined and struck through:

334 **301.3 Nonresidential additions and alterations.** The provisions of individual
335 sections of Chapter 5 apply to newly constructed buildings and building additions
336 and alterations of ~~1,000 square feet or greater, and/or building alterations with a~~
337 ~~permit valuation of \$200,000 or above~~ (for occupancies within the authority of
338 California Building standards Commission). Code sections relative to additions and
339 alterations shall only apply to the portions of the building being added or altered
340 within the scope of the permitted work.

341 **19.04.140 Standards for compliance.**

342 The Marin County Green Building Requirements define compliance thresholds for
 343 different projects that are covered by this ordinance. These standards are summarized
 344 below in Table 1. The energy efficiency and electrification measures menu and
 345 specifications are detailed in Tables 2 and 3.

Table 1: Requirements by Project Type and Size			
Project Type and Size	Green Building Requirements	Energy Efficiency Requirements	Electric Vehicle Requirements
All Residential and Nonresidential Buildings Newly Constructed or New Construction	All-electric design AND CALGreen Tier 1	Meet the standards outlined for the project in the 2022 California Energy Code	For Single and Two-Family Residential: comply with CALGreen Measure A4.106.8.1, Tier 1
			For Multifamily Residential: comply with CALGreen Measure A4.106.8.2.1, Tier 1
			For Nonresidential: comply with CALGreen Measure A5.106.5.3.1, Tier 1; AND For Nonresidential Grocery, Retail, or Warehouses planning off-street medium-heavy-duty loading spaces: comply with CALGreen Measure 5.106.5.4
Single and Two-Family Additions and Alterations less than 750 square feet	CALGreen Mandatory	Meet the standards outlined for the project in the 2022 California Energy Code	If the project is upgrading the main electrical service panel, comply with CALGreen Measure A4.106.8.1, Tier 1
Single and Two-Family Additions and Alterations 750 square feet or greater	CALGreen Tier 1	Using the Measure Menu in Table 2, achieve a total score that is equal to or greater than the Target Score for the applicable climate zone	

Table 1: Requirements by Project Type and Size			
Project Type and Size	Green Building Requirements	Energy Efficiency Requirements	Electric Vehicle Requirements
Multifamily Residential Additions and Alterations less than 750 square feet	CALGreen Mandatory	Meet the standards outlined for the project in the 2022 California Energy Code	If the service panel is modified: add designated electrical capacity for 20% of onsite parking spaces to be EV Capable ¹ .
Multifamily Residential Additions and Alterations 750 square feet or greater	CALGreen Tier 1		If parking lot surface is modified (paving material and curbing removed): (i) add raceway to a minimum of 50% of exposed parking spaces, OR (ii) install at minimum 5% EVCS to parking spaces requiring any combination of Level 2 and Direct Current Fast Charging EVSE, except at least one Level 2 EVSE shall be provided.
Nonresidential Additions and Alterations			Where existing electrical service will not be upgraded in the existing project scope, designate capacity for parking spaces to the maximum extent that does not require an upgrade to existing electrical service.
¹ Electrical service capacity shall be able to deliver a minimum 40 amperes at 208 or 240 volts multiplied by 20% of the total number of EV Spaces. The panelboard(s) shall have sufficient space to install a minimum of one 40-ampere dedicated branch circuit and overcurrent protective device per EV Space up to a minimum of 20% of the total number of EV Spaces. The circuits and overcurrent protective devices shall remain reserved exclusively for EV charging. An EV Automatic Load Management System may be necessary in order to provide EV charging at more than 20% of EV Spaces.			

346 The following conditions also apply to Table 1:

- 347 (a) Cumulative new construction or remodels over any one-year period shall be
- 348 considered as a single covered project, and subject to the highest compliance
- 349 threshold based on the cumulative project size or valuation.
- 350 (b) Mixed use (residential and commercial) projects must comply either with the
- 351 applicable covered project requirements for the respective residential and
- 352 commercial portions of the project or may propose to utilize a mixed-use rating
- 353 system, subject to approval by the chief building official.

Commented [RB1]: Alternate Language as Provide by State Model: "Over any three-year period shall be considered as a single covered project, and subject to the highest compliance threshold based on the cumulative project size or valuation"

Table 2: Energy and Electrification Menu of Measures by Climate Zone and Building Vintage

Measure		Climate Zone						Steps
		2			3			
		Pre-1979	1979-1992	1993-2010	Pre-1979	1979-1992	1993-2010	
Specification	Spec. ID (Refer to Table 3)	12	9	6	10	7	5	
LED + Exterior Photosensor	E1	Mandatory			Mandatory			1) Choose your Climate Zone using CEC toolfinder ¹ 2) Choose your Building Vintage (age) 3) Minimum target score needed to comply 4) Choose a measure or a combination of measures that adds up to the minimum target score above. 5) Use the Specification Number (Spec. ID) column as a key and conform to the specifications in Table 3 below. Table 3 describes, specifies, and details compliance with each corresponding measure.
Water Heating Package	E2	1	1	1	1	1	1	
Air Sealing	E3	2	1	1	1	1	1	
R-49 Attic Insulation	E4	6	3	1	4	2	1	
Duct Sealing	E5	5	3	1	3	2	--	
New Ducts + Duct Sealing	E6	8	6	2	6	4	2	
Windows	E7	4	3	--	3	3	--	
R-13 Wall Insulation	E8	6	--	--	5	--	--	
Cool Roof	E10	1	1	1	1	1	1	
PV + Electric Ready Pre-Wire	ER1	12	12	12	12	12	12	
Electric Readiness Measures	ER2	Mandatory (if remodeling kitchen, laundry, or upgrading panel)			Mandatory (if remodeling kitchen, laundry, or upgrading panel)			
HPWH	FS1	12	12	12	12	12	12	
High Eff HPWH	FS2	13	13	13	13	13	13	
HVAC Heat Pump	FS3	20	15	13	16	11	10	
High Eff HVAC Heat Pump	FS4	22	17	14	17	12	11	
Heat Pump Clothes Dryer	FS5	1	1	1	1	1	1	
Induction Cooktop	FS6	1	1	1	1	1	1	

Commented [RB2]: Marin Jurisdictions are either in climate zone 2 or 3. Those electing to choose one climate zone feel free to delete the corresponding zone from this table below.

Commented [RB3]: Where a ZIP code contains more than one climate region, local jurisdictions may, at their discretion, designate a single climate zone within the ZIP code as applying to the entire ZIP code. The following list of Climate Zone assignments by ZIP code is provided for the convenience of local jurisdictions electing to take this approach.
 •Climate Zone Assignments by Zip Code

¹California Energy Commission climate zone tool finder at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/climate-zone-tool-maps-and>.

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The following conditions also apply to Table 2:

- (a) Building vintage is the year in which the original construction permit for the building was submitted, as documented by building department records. Unless otherwise specified, the requirements shall apply to the entire dwelling unit, not just the additional or altered portion.
- (b) Measures from the Measure Menu in Table 2 and specified in Table 3, that already exist in the home, may be counted towards compliance with these requirements, unless otherwise specified in Table 3.
- (c) Measures from the Measure Menu in Table 2 that are to be installed to satisfy requirements under the State Energy Code, Title 24, Part 6, may also be counted towards compliance with these requirements. Where these requirements conflict with other Energy Code requirements, the stricter requirements shall prevail.

Table 3. List of Measure Specifications

ID	Measure Specification
Energy Measures	
E1	Lighting Measures – Replace all interior and exterior screw-in incandescent, halogen, and compact fluorescent lamps with LED lamps. Install photocell controls on all exterior lighting luminaires.
E2	Water Heating Package: Add exterior insulation meeting a minimum of R-6 to existing storage water heaters. Insulate all accessible hot water pipes with pipe insulation a minimum of ¾ inch thick. This includes insulating the supply pipe leaving the water heater, piping to faucets underneath sinks, and accessible pipes in attic spaces or crawlspaces. Upgrade fittings in sinks and showers to meet current California Green Building Standards Code (Title 24, Part 11) Section 4.303 water efficiency requirements. Exception 1: Water heater blanket is not required on water heaters less than 20 gallons. Exception 2: Water heater blanket not required if application of a water heater blanket voids the warranty on the water heater. Exception 3: Upgraded fixtures are not required if existing fixtures have rated or measured flow rates of no more than ten percent greater than 2022 California Green Building Standards Code (Title 24, Part 11) Section 4.303 water efficiency requirements. Exception 4: Water heaters with factory installed insulation of R-24 or greater

E3	<p>Air Sealing: Seal all accessible cracks, holes, and gaps in the building envelope at walls, floors, and ceilings. Pay special attention to penetrations including plumbing, electrical, and mechanical vents, recessed can light luminaires, and windows. Weather-strip doors if not already present. Verification shall be conducted following a prescriptive checklist that outlines which building aspects need to be addressed by the permit applicant and verified by an inspector. Compliance can also be demonstrated with blower door testing conducted by a certified HERS Rater no more than three years prior to the permit application date that either: a) shows at least a 30 percent reduction from pre-retrofit conditions; or b) shows that the number of air changes per hour at 50 Pascals pressure difference (ACH50) does not exceed ten for Pre-1978 vintage buildings, seven for 1978 to 1991 vintage buildings and five for 1992-2010 vintage buildings. If combustion appliances are located within the pressure boundary of the building, conduct a combustion safety test by a professional certified by the Building Performance Institute in accordance with the ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings¹, the Whole House Combustion Appliance Safety Test Procedure for the Comfortable Home Rebates Program 2020 or the California Community Services and Development Combustion Appliance Safety Testing Protocol.</p>
E4	<p>R-49 Attic Insulation: Attic insulation shall be installed to achieve a weighted assembly U-factor of 0.020 or insulation installed at the ceiling level shall have a thermal resistance of R-49 or greater for the insulation alone. Recessed downlight luminaires in the ceiling shall be covered with insulation to the same depth as the rest of the ceiling. Luminaires not rated for insulation contact must be replaced or fitted with a fire-proof cover that allows for insulation to be installed directly over the cover.</p> <p>Exception: In buildings where existing R-30 is present and existing recessed downlight luminaires are not rated for insulation contact, insulation is not required to be installed over the luminaires.</p>
E5	<p>Duct Sealing: Air seal all space conditioning ductwork to meet the requirements of the 2022 Title 24 Section 150.2(b)1E. The duct system must be tested by a HERS Rater no more than three years prior to the Covered Single Family Project permit application date to verify the duct sealing and confirm that the requirements have been met. This measure may not be combined with the New Ducts and Duct Sealing measure in this Table.</p>
E6	<p>New Ducts + Duct Sealing: Replace existing space conditioning ductwork with new R-8 ducts that meet the requirements of 2022 Title 24 Section 150.0(m)11. This measure may not be combined with the Duct Sealing measure in this Table. To qualify, a preexisting measure must have been installed no more than three years before the Covered Single Family Project permit application date.</p>
E7	<p>Windows: Replace all existing windows with high performance windows with an area-weighted average U-factor no greater than 0.32.</p>
E8	<p>R-13 Wall Insulation: Install wall insulation in all exterior walls to achieve a weighted U-factor of 0.102 or install wall insulation in all exterior wall cavities that shall result in an installed thermal resistance of R-13 or greater for the insulation alone.</p>

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E9	Reserved for future use
E10	Cool Roof: Install a cool roof on at least 50% of the roof area of steep sloped roof (ratio of rise to run greater than 2:12). Install a roofing product rated by the Cool Roof Rating Council to have an aged solar reflectance equal to or greater than 0.25, and a thermal emittance equal to or greater than 0.75.
Fuel Substitution Measures	
FS1	Heat Pump Water Heater (HPWH): Replace all existing electric resistance and natural gas storage water heaters with heat pump water heaters.
FS2	High Efficiency Heat Pump Water Heater (HPWH): Replace all existing electric resistance and natural gas storage water heaters with heat pump water heaters with a Northwest Energy Efficiency Alliance (NEEA) Tier 3 or higher rating.
FS3	HVAC Heat Pump: Replace all existing gas space heating system and existing electric resistance heating systems with electric heat pump systems.
FS4	High Efficiency HVAC Heat Pump: Replace all existing gas space heating system and existing electric resistance heating systems with electric heat pump systems with a SEER rating of 21 or greater and an HSPF rating of 11 or greater.
FS5	Heat Pump Clothes Dryer: Replace all existing electric resistance clothes dryers with heat pump dryers with no resistance element and cap the gas lines.
FS6	Induction Cooktop: Replace all existing gas and electric resistance stove tops with inductive stove tops and cap the gas lines.
Solar PV and Electric-Readiness Measures	
ER1	<p>PV+ Electric Ready Pre-Wire: For New PV Systems: Install a new solar PV system that meets the requirements of 2022 Title 24 Section 150.1(c)14 and upgrade the service panel to meet the requirements of ER2.G. and install any two of the other measures from ER2.A – ER2.F.</p> <p>For Existing PV Systems: If the home already has an existing PV system, to claim credit for this measure, ER1, upgrade the service panel to meet the requirements of ER2.G. and install any two of the other measures from ER2.A – ER2.F.</p>
ER2	<p>Electric Readiness Measures:</p> <p>To claim credit for Item ER1, in addition to the solar PV system installed, upgrade the panelboard to meet the requirements of Item ER2.G and install any two of the other measures ER2.A – ER2.F, below to allow for installation of electric appliances at a future date.</p> <p>If the service panel is being upgraded, install any two of the other measures below. If the laundry room is being remodeled, comply with Item ER2.D and upgrade the panelboard to meet the requirements of Item ER2.G.</p>

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If the kitchen is being remodeled, comply with Item ER2.C and upgrade the service panel to meet the requirements of Item ER2.G.

- A. Heat Pump Water Heater Ready, as specified in Section 150.0(n)1.
- B. Heat Pump Space Heater Ready, as specified in Section 150.0(t).
- C. Electric Cooktop Ready, as specified in Section 150.0(u).
- D. Electric Clothes Dryer Ready, as specified in Section 150.0(v).
- E. Energy Storage Systems (ESS) Ready, as specified in Section 150.0(s).
- F. EV Charger Ready. Install a listed raceway for an EV charger, that meets the requirements of the California Green Building Standards Code (Title 24, Part 11) Section A4.106.8.1, Tier 1 and 2, which otherwise applies to new construction.
- G. Upgrade the panelboard serving the individual dwelling to either:
 - (i) a minimum 200 amp panel with a minimum 225 amp busbar rating to accommodate future connection of electric appliances, including heat pump water heaters, heat pump space heaters, electric cooktops, electric clothes dryers as specified in California Energy Code Section 150.0 (n), (t), (u) and (v) and Level 2 electric vehicle supply equipment; or,
 - (ii) provide electrical load calculations and appliance specifications for serving all of these end-uses with a minimum 100-amp panel.

Exception: If an electrical permit is not otherwise required for the project other than compliance with this Item, ER2.

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370 **19.04.150 Incentives for compliance.**

371 In addition to the required standards for compliance, the Board of Supervisors may
372 establish by resolution, financial or application processing incentives and/or award or
373 recognition programs to encourage higher levels of green building compliance for a
374 project.

375 **19.04.160 Administrative procedures.**

376 The procedures for compliance with the provisions of this chapter shall include, but
377 not be limited to the following:

- 378 (a) *Project design.* Applicants for a covered project are strongly encouraged to
379 involve a qualified green building rater in the initial design phases of the project
380 in advance of submittal of an application to determine applicable green building
381 compliance thresholds and the most cost effective and appropriate means of
382 achieving compliance.
- 383 (b) *Planning applications.* If a discretionary planning application is required for a
384 covered project, applicants should be prepared to identify expected green
385 building measures to be included in the project to achieve the compliance
386 thresholds. Applicants should identify any anticipated difficulties in achieving
387 compliance and any exemptions from the requirements of this chapter that may
388 be requested.
- 389 (c) *Building plan check review.* Upon submittal of an application for a building
390 permit, building plans for any covered project shall include a green building
391 program description and completed checklist. The checklist shall be
392 incorporated onto a separate full-sized plan sheet included with the building
393 plans. Evidence that the project, as indicated by the project plans and green
394 building program description, will achieve the standards for compliance
395 outlined in Section 19.04.140, shall be provided prior to issuance of a building
396 permit.
- 397 (d) *Changes during construction.* During the construction process, alternate green
398 building measures may be substituted, provided that documentation of the
399 proposed change and the project's continued ability to achieve the standards
400 for compliance to the chief building official shall be provided.
- 401 (e) *Final building inspection.* Prior to final building inspection and occupancy for
402 any covered project, evidence that project construction has achieved the
403 required compliance set forth in the standards for compliance outlined in
404 Section 19.04.140 shall be provided. The chief building official shall review the
405 documentation submitted by the applicant, and determine whether the project
406 has achieved the compliance threshold as set forth in the standards for
407 compliance outlined in Section 19.04.140. If the chief building official
408 determines that the applicant has met these requirements, the final building
409 inspection may proceed.

410 (f) *Conflict with other laws.* The provisions of this chapter are intended to be in
411 addition to and not in conflict with other laws, regulations and ordinances
412 relating to building construction and site development. If any provision of this
413 chapter conflicts with any duly adopted and valid statutes or regulations of the
414 federal government or the state of California, the federal or state statutes or
415 regulations shall take precedence.

416 **19.04.170 Exemptions.**

- 417 (a) The provisions of this chapter shall not apply to:
- 418 (1) Buildings which are temporary (such as construction trailers).
- 419 (2) Building area which is not or is not intended to be conditioned space.
- 420 (3) Any requirements of this chapter which would impair the historic integrity
421 of any building listed on a local, state or federal register of historic
422 structures, as determined by the chief building official and as regulated by
423 the California Historic Building Code (Title 24, Part 8). In making such a
424 determination, the chief building official may require the submittal of an
425 evaluation by an architectural historian or similar expert.
- 426 (b) As outlined in the 2022 CALGreen code, section 4.106.4 and 5.106.5.3,
427 applicants may be exempted from the electric vehicle charging requirements
428 on a case-by-case basis where the local enforcing agency has determined EV
429 charging and infrastructure are not feasible based upon one or more of the
430 following conditions:
- 431 (1) Where there is no commercial power supply or the local utility is unable to
432 supply adequate power.
- 433 (2) Where there is evidence suitable to the local enforcing agency
434 substantiating that additional local utility infrastructure design
435 requirements, directly related to the implementation of section 4.106.4,
436 5.106.5.3, and 5.106.5.4 may adversely impact the construction cost of
437 the project.
- 438 (3) ADUs and JADUs without additional parking facilities.
- 439 (4) Parking spaces accessible only by automated mechanical car parking
440 systems are not required to comply with CALGreen Code section
441 5.106.5.3
- 442 (c) Hardship or infeasibility exemption. If an applicant for a covered project
443 believes that circumstances exist that make it a hardship or infeasible to meet
444 the requirements of this chapter, the applicant may request an exemption as
445 set forth below. In applying for an exemption, the burden is on the applicant to
446 show hardship or infeasibility.
- 447 (1) *Application.* The applicant shall identify in writing the specific requirements
448 of the standards for compliance that the project is unable to achieve and

449 the circumstances that make it a hardship or infeasible for the project to
450 comply with this chapter. The applicant may not petition for relief from any
451 requirement of the 2022 California Energy Code (Title 24, Part 6) and
452 referenced standards, or the 2022 California Green Building Standards
453 (Title 24, Part 11) of the California Building Standards Code.
454 Circumstances that constitute hardship or infeasibility shall include, but
455 are not limited to the following:

- 456 a. There is a conflict between the provisions of the applicable green
457 building rating system and the California Building Standards Code,
458 other state code provisions, other requirements of this title or
459 conditions imposed on the project through a previously approved
460 planning application;
- 461 b. There is a lack of commercially available green building materials
462 and technologies to comply with the green building rating system;
- 463 c. That the cost of achieving compliance is disproportionate to the
464 overall cost of the project;
- 465 d. That physical conditions of the project site make it impractical to
466 incorporate necessary green building measures or achieve the
467 standards for compliance;
- 468 e. That compliance with certain requirements would impair the historic
469 integrity of buildings listed on a local, state or federal list or register of
470 historic structures as regulated by the California Historic Building
471 Code (Title 24, Part 8).

472 (2) *Granting of exemption.* If the chief building official determines that it is a
473 hardship or infeasible for the applicant to fully meet the requirements of
474 this chapter and that granting the requested exemption will not cause the
475 building to fail to comply with the 2022 California Energy Code (Title 24,
476 Part 6) and referenced standards, or the 2022 California Green Building
477 Standards (Title 24, Part 11) of the California Building Standards Code,
478 the chief building official shall determine the maximum feasible threshold
479 of compliance reasonably achievable for the project. In making this
480 determination, the chief building official shall consider whether alternate,
481 practical means of achieving the objectives of this chapter can be
482 satisfied, such as reducing comparable energy use at an off-site location
483 within the county. If an exemption is granted, the applicant shall be
484 required to comply with this chapter in all other respects and shall be
485 required to achieve the threshold of compliance determined to be
486 achievable by the chief building official.

487 (3) *Denial of exception.* If the chief building official determines that it is
488 reasonably possible for the applicant to fully meet the requirements of this
489 chapter, the request shall be denied, and the applicant shall be notified of

490 the decision in writing. The project and compliance documentation shall be
491 modified to comply with the standards for compliance.

492 (4) *Appeal.* Any aggrieved applicant or person may appeal the determination
493 of the chief building official regarding the granting or denial of an
494 exemption or compliance with any other provision of this chapter. An
495 appeal of a determination of the chief building official shall be filed in
496 writing and processed in accordance with the provisions of Section
497 19.04.028 of this code.

498

499 **19.04.180 Revocable building and infrastructure exemptions.**

500 Notwithstanding the requirements of this chapter and the greenhouse gas emissions
501 and other public health and safety hazards associated with natural gas infrastructure,
502 minimally necessary and specifically tailored natural gas infrastructure shall be allowed
503 in a newly constructed or new construction building on a revocable basis limited to the
504 duration of time during which the conditions set forth below are satisfied and the
505 building continues occupancy as the original design specified in the construction
506 drawings permitted by the county as a newly constructed or new construction building.

507 If the conditions are no longer satisfied, the natural gas infrastructure shall either be
508 capped, otherwise terminated, or removed in a manner pursuant to all applicable Codes
509 in this subchapter. The following uses are subject to this exemption:

510 (a) A newly constructed or new construction building meeting the definition of
511 "food service establishment" in §19.04.120(17). The scope of the exemption
512 extends to the preparation of food only, not HVAC, or water heating
513 appliances.

Marin's Model Reach Code Policy Summary

New Construction All-Electric for All Residential and Nonresidential Buildings

Proposed Policy Description	Proposed Qualified/Covered Project
Key Policy Components	
<p><u>Require all-electric for newly constructed buildings</u> As per “Newly Constructed Building” and “All-electric Building” definitions below</p>	<p>All building types (residential and commercial) whole or partly in jurisdictional boundaries</p>
<p><i>Definition: Newly Constructed Building</i></p>	<p><i>Building that has never before been used or occupied for any purpose.</i></p>
<p><i>Definition: All-electric Building or Design definition</i></p>	<p><i>A building that uses a permanent supply of electricity as the source of energy for all space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances, and has no natural gas or propane plumbing installed in the building. An all-electric building also includes solar thermal collectors.</i></p>
<p><u>Accessory Dwelling Units (ADU)</u> New ADUs and Junior ADUs (JADUs) built on existing property is considered newly constructed building</p>	<p>Detached: only new and existing ADUs and JADUs.</p> <p>Attached: New and existing ADUs/JADUs that are attached or wholly within existing mixed-fuel residential building are exempted and may utilize natural gas appliances.</p>
<p><u>Prohibits Conversion from Electric to Gas</u> For applications submitted on or after effective date of the chapter goes into effect</p>	<p>Applicants are ineligible to apply for and the building official may not grant permits that would convert an all-electric building to a mixed-fuel building.</p>
<p><u>Electric Readiness/Future Proofing if Gas Permitted as per exceptions allowed</u> Electric capacity for future electrification. Panel/Subpanel installed to accommodate future electrification of all appliances in the building.</p>	<p>All - State minimum standards already make everything electric ready</p>

Exception/Exemptions	
<p><u>Hardship/Infeasibility Exemption or Waiver</u> Exemption to projects outside the projects scope and budget. The Burden of Proof is on project applicant. The building official makes the determination.</p>	<ol style="list-style-type: none"> 1. Conflicts with State Standards, OR 2. Compliance disproportionate to overall project cost, OR 3. Lack of commercially available technologies, OR 4. Physical conditions make it installing measures impractical, OR 5. Measures impair a listed historic structure
<p><u>Permits issued prior to effective date</u></p>	<p>Development projects for which all building and related permits have been issued and remain valid prior to January 1, 2023 can have gas.</p>
<p><u>Vested Rights</u></p>	<p>Development projects that have obtained vested rights prior to the effective date of this chapter pursuant to a preliminary affordable housing project, development agreement, a vesting tentative map, or pursuant to applicable statutory or case law.</p>
<p><u>Emergency Back-up power and industrial process</u></p>	<p>Emergency electrical generation only for essential services, multifamily developments, and/or an approved industrial process for essential services buildings (ostensibly means gas fuel can be used).</p>
<p><u>Portable propane Appliances</u> For use outside of the building envelope</p>	<p>Applies to outdoor cooking, refrigeration, and outdoor heating appliances.</p>
<p><u>Attached ADUs and JADUs</u> Creating a new unit of housing for independent living</p>	<p>All attached ADUs.</p>
<p><u>Food Service Establishments</u></p>	<p>Commercial Kitchens and Cooking equipment serving food on or off-site.</p> <p>Can be revoked or natural gas infrastructure capped if use changes (e.g changes from restaurant to retail).</p>

Marin's Model Reach Code Policy Summary

Existing Single-Family Residential Building Renovations

Proposed Policy Description	Proposed Qualified/Covered Project
Key Policy Components	
<p><u>Performance Pathway: State's Flexible Measures Compliance Tool</u> Choose AND/OR mandate from a combination of energy efficiency, solar, battery storage, and electrification measures from a comprehensive menu that achieves a minimum/floor target score based on energy use savings</p> <ol style="list-style-type: none"> 1. Offers flexible choice AND mandates low-hanging fruit options such as lighting and electric readiness 2. Saves Energy and GHGs 3. Must be proven cost effective 	<p>For existing Single-Family Homes (One- and Two-Family Homes, Townhomes with Private Garages) permitted for construction before 12/31/2010, modifying 750 square feet (sf) or larger of conditioned space</p> <p><i>*As per the State, projects permitted after 1/1/2011 were constructed during a period when energy efficiency measures progressed rapidly. Hence, cost-effective studies and the tool were not conducted for building stock after this date.</i></p>
<p><u>Electric Readiness/Future Proofing</u> Panel/subpanel upgrade (typically 200 amps) to accommodate future electrification of all appliances in the residence. Driven by the electrical demand of heat pumps, induction stoves, and/or EV Charging infrastructure.</p>	<p>Mandatory for kitchen remodels and/or laundry remodels, and/or panel upgrades for all permitted projects.</p>
<p><u>Cumulative remodels</u></p>	<p>Over any one-year period shall be considered as a single covered project, and subject to the highest compliance threshold based on the cumulative project size or valuation (County language).</p>

Exception/Exemptions	
<p><u>Hardship/Infeasibility Exemptions or Waiver</u> Exemption to projects outside the projects scope and budget.</p> <p>The Burden of Proof is on project applicant.</p> <p>Building official makes the determination.</p> <p>Building official can make adjustments to flexible path tools target scores if technical and economically infeasible</p>	<ol style="list-style-type: none"> 1. Conflicts with State Standards, OR 2. Compliance disproportionate to overall project cost, OR 3. Lack of commercially available technologies, OR 4. Physical and/or technical conditions make installing measures impractical, OR 5. Measures impair a listed historic structure
<p><u>Attached ADUs and JADUs</u> Remodeling your space and creating a new unit of housing for independent living</p>	<p>All attached</p>
<p><u>Mobile Homes, Manufactured Housing, or Factory-built housing</u></p>	<p>All</p>
<p><u>Income Qualification</u></p>	<p>Based on CARE or FERA utility program for low-income renters or owner(s) of a property</p>
<p><u>Portable propane appliances</u> For use outside of the building envelope</p>	<p>Outdoor cooking, refrigeration, and outdoor heating appliances</p>
<p><u>Attached ADUs and JADUs</u> Creates a new unit of housing for independent living.</p>	<p>All attached ADUs</p>
<p><u>Food Service Establishments</u></p>	<p>Commercial Kitchens and Cooking equipment serving food on or off-site</p> <p>Can be revoked or natural gas infrastructure capped if use changes (e.g changes from restaurant to retail space).</p>

Marin's Model Electric Vehicle Reach Code Policy Summary

New Construction

	Proposed Policy Description	Proposed Qualified/Covered Project	Requirement Level
Residential	Be EV Ready 1. Raceway with 208/240-volt branch circuit 2. Service Panel and/or Subpanel 40 amp Capacity and Space(s) 3. Electrical conforms to CA electrical code incl. a receptacle or blank cover	Single Family Homes: One- and Two-Family Homes, Townhomes with Private Garages	CALGreen Reach Tier 1/Tier 2
	1. EV Capable 10% of parking spaces 2. EV Ready 35% of parking spaces w/ Low Power Level 2 Receptacles	MultiFamily Dwellings, Hotels and Motels (<20 units)	CALGreen Reach Tier 1
	1. EV Capable 10% of parking spaces 2. EV Ready 35% of parking spaces w/Low Power Level 2 Receptacles 3. EV Chargers 10% of parking spaces require level 2 EVSE	Multifamily Dwellings, Hotels and Motels, (>20 units)	CALGreen Reach Tier 1
Nonresidential	1. EV Capable 0, 20-50% depending on # of parking spaces 2. EVSE Installed 0, 7-33% depending on # of parking spaces) w/any combination of Level 2 and DC Fast Charger (DCFC), except at least one level 2 EVSE 3. Each installation of DCFC reduces number of required EV Capable spaces w/out EVSE by five and reduce proportionally the required load capacity to the service panel and subpanel. 4. # of required EVCS spaces counts toward total # of EV Capable spaces	All Nonresidential (If planning light-duty vehicle spaces)	CALGreen Reach Tier 1
	Raceway conduit and panel power requirements that facilitates future installation of EVSE . Size the service panel and/or subpanel at a 200 or 400 amp capacity requirement based on a method (table). Table sizes panel based on: (i) building size in sqft., AND, (ii) # of off-street loading spaces.	All Nonresidential (If Planning medium-heavy-duty vehicle off-site spaces including Grocery, Retail, Warehouse)	State minimum Standard

Marin's Model Electric Vehicle Reach Code Policy Summary

Renovations

	Proposed Policy Description	Proposed Qualified/Covered Project	Requirement Level
Residential	If the project is upgrading the main electrical service panel, be EV Ready	Single Family Homes: One- and Two-Family Homes, Townhomes with Private Garages	CALGreen Reach Tier 1/Tier 2
	<p>If the service panel is modified: add designated electrical capacity for 20% of onsite parking spaces to be EV Capable.</p> <p>When parking lot surface is modified (paving material and curbing removed):</p>	All Multifamily + All Nonresidential	Reach: Alternative to CALGreen Specific to Marin County
Nonresidential	<p>(i) add raceway/conduit to a minimum of 50% of exposed parking spaces, OR</p> <p>(ii) install at minimum 5% EVCS to parking spaces requiring any combination of Level 2 and Direct Current Fast Charging EVSE, except at least one one Level 2 EVSE shall be provided.</p>		

Overview

Peninsula Clean Energy (PCE), Silicon Valley Clean Energy (SVCE), and East Bay Community Energy (EBCE) provide recommended amendment language to the 2022 Title 24 Part 11 California Green Building Standards Code (CALGreen) sections covering Electric Vehicle (EV) Charging Infrastructure. The code intends to reach beyond the EV charging infrastructure requirements in the 2022 CALGreen. Additions are underlined, ~~deletions are stricken through~~.

These amendments are meant to be adopted in lieu of EV charging infrastructure requirements within a local zoning code. Please visit BayAreaReachCodes.Org to review related information.

Version Date	Summary of Updates
May 11, 2022	1st draft
July 8, 2022	1. Updated multifamily new construction requirements to have a high-power option of 15% EVCS and 85% Low Power Level 2 EV Ready. 2. Consolidated affordable housing requirements, including an exemption for \$400 customer-side cost per space 3. Added requirements to convert Level 1 Capable spaces to Level 1 Ready spaces for Existing Buildings for applicable occupancies.

A comparison of the EV related code section outlines between the 2022 CALGreen and the proposed amendments is presented here for reader orientation. The rest of the document lays out the recommended code amendments for the Definition, Scope, Residential Mandatory Measures, and Nonresidential Mandatory Measures sections respectively.

Outline Comparison

Section Headings for Base 2019 CALGreen

RESIDENTIAL MANDATORY MEASURES

4.106.4 Electric vehicle (EV) charging for new construction.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages.

4.106.4.1.1 Identification.

4.106.4.2 New multifamily dwellings.

4.106.4.2.1 Electric vehicle charging space (EV space) locations.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions.

4.106.4.2.3 Single EV space required.

4.106.4.2.4 Multiple EV spaces required.

4.106.4.2.5 Identification.

4.106.4.3 New hotels and motels.

4.106.4.3.1 Number of required EV spaces.

- 4.106.4.3.2 Electric vehicle charging space (EV space) dimensions.
- 4.106.4.3.3 Single EV space required.
- 4.106.4.3.4 Multiple EV spaces required.
- 4.106.4.3.5 Identification.
- 4.106.4.3.6 Accessible EV spaces.

NONRESIDENTIAL MANDATORY MEASURES

- 5.106.5.3 Electric vehicle (EV) charging.
 - 5.106.5.3.1 Single charging space requirements.
 - 5.106.5.3.2 Multiple charging space requirements.
 - 5.106.5.3.3 EV charging space calculation.
 - 5.106.5.3.4 Identification.
 - 5.106.5.3.5 Future charging spaces.

Section Headings as Recommended

RESIDENTIAL MANDATORY MEASURES

- 4.106.4 Electric vehicle (EV) charging
 - 4.106.4.1 One- and two-family dwellings and town-houses with attached private garages
 - 4.106.4.1.1 New Construction
 - 4.106.4.1.2 Existing Building
 - 4.106.4.2 Multifamily dwellings with residential parking facilities.
 - 4.106.4.2.1 New Construction
 - 4.106.4.2.2 Existing Buildings
 - 4.106.4.3 Electric vehicle charging Stations
 - 4.106.4.3.1 Location
 - 4.106.4.3.2 Dimensions
 - 4.106.4.4 Direct current fast charging stations

NONRESIDENTIAL MANDATORY MEASURES

- 5.106.5.3 Electric vehicle (EV) charging
 - 5.106.5.3.1 Nonresidential Occupancy Class B Offices
 - 5.106.5.3.1.1 New Construction
 - 5.106.5.3.1.2 Existing Buildings
 - 5.106.5.3.2 Hotel and Motel Occupancies – Shared Parking Facilities
 - 5.106.5.3.2.1 New Construction
 - 5.106.5.3.2.1 Existing Buildings
 - 5.106.5.3.3 All Other Nonresidential Occupancies – Shared Parking Facilities
 - 5.106.5.3.3.1 New Construction
 - 5.106.5.3.3.2 Existing Buildings

5.106.5.3.4 Direct Current Fast Charging Stations

5.106.5.4 EV readiness.

5.106.5.4.1 Warehouses, grocery stores and retail stores with planned off-street loading spaces.

CHAPTER 2 DEFINITIONS

Section 202 DEFINITIONS

...

AFFORDABLE HOUSING. Residential buildings that entirely consist of units below market rate and whose rents or sales prices are governed by local agencies to be affordable based on area median income.

...

AUTOMATIC LOAD MANAGEMENT SYSTEM (ALMS). A control system designed to manage load across one or more electric vehicle supply equipment (EVSE), circuits, panels and to share electrical capacity and/or automatically manage power at each connection point. ALMS systems shall be designed to deliver no less than 3.3 kVa (208/240 volt, 16-ampere) to each EV Capable, EV Ready or EVCS space served by the ALMS, and meet the requirements of California Electrical Code Article 625. The connected amperage to the building site for the EV charging infrastructure shall not be lower than the required connected amperage per California Green Building Standards Code, Title 24 Part 11.

DIRECT CURRENT FAST CHARGING (DCFC). A parking space provided with electrical infrastructure that meets the following conditions:

- i. A minimum of 48 kVa (480 volt, 100-ampere) capacity wiring.
- ii. Electric vehicle supply equipment (EVSE) located within three (3) feet of the parking space providing a minimum capacity of 80-ampere.

ELECTRIC VEHICLE CHARGING STATION (EVCS). A parking space that includes installation of electric vehicle supply equipment (EVSE) at an EV Ready space. An EVCS space may be used to satisfy EV Ready space requirements. EVSE shall be installed in accordance with the California Electrical Code, Article 625.

ELECTRIC VEHICLE (EV) READY SPACE. [HCD] A vehicle space which is provided with a branch circuit; any necessary raceways, both underground and/or surface mounted; to accommodate EV charging, terminating in a receptacle or a charger.

ELECTRIC VEHICLE (EV) CAPABLE SPACE. A vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). 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 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 EV CAPABLE. A parking space provided with electrical infrastructure that meets the following requirements:

- i. Conduit that links a listed electrical panel with sufficient capacity to a junction box or receptacle located within three (3) feet of the parking space.
- ii. The conduit shall be designed to accommodate at least 8.3 kVa (208/240 volt, 40-ampere) per parking space. Conduit shall have a minimum nominal trade size of 1 inch inside diameter and may be sized for multiple circuits as allowed by the California Electrical Code. Conduit shall be installed at a minimum in spaces that will be inaccessible after construction, either trenched underground or where penetrations to walls, floors, or other partitions would otherwise be required for future installation of branch circuits, and such additional elements deemed necessary by the Building Official. Construction documents shall indicate future completion of conduit from the panel to the parking space, via the installed inaccessible conduit.
- iii. The electrical panel shall reserve a space for a 40-ampere overcurrent protective device space(s) for EV charging, labeled in the panel directory as "EV CAPABLE."
- iv. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.
- v. The parking space shall contain signage with at least a 12" font adjacent to the parking space indicating the space is EV Capable.

LEVEL 1 EV READY. A parking space that is served by a complete electric circuit with the following requirements:

- i. A minimum of 2.2 kVa (110/120 volt, 20-ampere) capacity wiring.
- ii. A receptacle labeled "Electric Vehicle Outlet" or electric vehicle supply equipment located

within three (3) feet of the parking space. If EVSE is provided the minimum capacity of the EVSE shall be 16-ampere.

- iii. Conduit oversized to accommodate future Level 2 EV Ready (208/240 volt, 40-ampere) at each parking space.

LEVEL 2 EV READY. A parking space that is served by a complete electric circuit with the following requirements:

- i. A minimum of 8.3 kVa (208/240 volt, 40-ampere) capacity wiring.
- ii. A receptacle labeled "Electric Vehicle Outlet" or electric vehicle supply equipment located within three (3) feet of the parking space. If EVSE is provided the minimum capacity of the EVSE shall be 30-ampere.

...

LOW POWER LEVEL 2 EV READY. A parking space that is served by a complete electric circuit with the following requirements:

- i. A minimum of 4.1 kVA (208/240 Volt, 20-ampere) capacity wiring.
- ii. A receptacle labeled "Electric Vehicle Outlet" or electric vehicle supply equipment located within three (3) feet of the parking space. If EVSE is provided the minimum capacity of the EVSE shall be 16-ampere.
- iii. Conduit oversized to accommodate future Level 2 EV Ready (208/240 volt, 40-ampere) at each parking space.

~~**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.~~

OFF-STREET LOADING SPACES. An area, other than a public street, public way, or other property (and exclusive of off-street parking spaces), permanently reserved or set aside for the loading or unloading of motor vehicles, including ways of ingress and egress and maneuvering areas. Whenever the term "loading space" is used, it shall, unless the context clearly requires otherwise, be construed as meaning off-street loading space. This excludes designated passenger loading/unloading.

CHAPTER 3 GREEN BUILDING

SECTION 301 GENERAL

301.1 Scope. ... (No change to existing California amendment.)

301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration. (No change to existing California amendment.)

The mandatory provisions of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.2.3 for application.

The mandatory provisions of Section 5.106.5.3 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing nonresidential buildings.

NOTE: Repairs including, but not limited to, resurfacing, restriping, and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.

CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

DIVISION 4.1, PLANNING AND DESIGN

SECTION 4.106 SITE DEVELOPMENT

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

Exceptions:

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 local utility power supply or the local utility is unable to supply adequate power.
 - 1.2. 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 4.106.4, may increase construction cost by an average of \$4,500 per parking space for market rate housing or \$400 per parking space for affordable housing. EV infrastructure shall be provided up to the level that would not exceed this cost for utility service. ~~adversely impact~~

~~the construction cost of the project.~~

2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities ~~and without electrical panel upgrade or new panel installation.~~ ADUs and JADUs without additional parking but with electrical panel upgrades or new panels must have reserved breakers and electrical capacity according to the requirements of 4.106.4.1.
3. Multifamily residential R-2 building projects that have approved entitlements before the code effective date.

4.106.4.1 ~~New~~ One- and two-family dwellings and town-houses with attached private garages.

4.106.4.1.1 New Construction. ~~One parking space provided shall be a Level 2 EV Ready space. If a second parking space is provided, it shall be provided with a Level 1 EV Ready space. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The race shall originate at a 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.~~

~~**Exception:** A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the *California Electrical Code*.~~

4.106.4.1.1 Identification. ~~The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV-CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV-CAPABLE".~~

4.106.4.1.2. Existing Building. Parking additions or electrical panel upgrades must have reserved breaker spaces and electrical capacity according to the requirements of 4.106.4.1.1.

...

4.106.4.2 ~~New~~ Multifamily dwellings with ~~new~~ residential parking facilities.

[HIGH POWER OPTION] 4.106.4.2.1 New Construction. Fifteen percent (15%) of dwelling units with parking spaces shall be EVCS with Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. Eighty-five percent (85%) of dwelling units with parking spaces shall be provided with a Low Power Level 2 EV Ready space. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A. EVCS shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B.

Commented [FF1]: Staff: Choose only one of the High or Low power options. Delete the unused option.

Alternatively, the Low Power option could be designated for Affordable Housing due to lower costs.

[LOW POWER OPTION] 4.106.4.2.1 New Construction. Forty percent (40%) of dwelling units with parking spaces shall be EVCS with Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. Sixty percent (60%) of dwelling units with parking spaces shall be provided with at minimum a Level 1 EV Ready space. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A. EVCS shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B.

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. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a 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.

~~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.~~ The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

~~1. **EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.~~

~~The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code*.~~

Exceptions:

- ~~1. When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV-capable spaces.~~
- ~~2. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV-capable spaces, the number of EV-capable spaces required may be reduced by a number equal to the number of EV chargers installed.~~

Notes:

- ~~a. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.~~
- ~~b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.~~

~~2. **EV Ready.** Twenty five (25) 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.

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. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

1. **EV Capable.** Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.

The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code*.

Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.

Notes:

a. Construction documents shall show locations of future EV spaces.

b. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use.

2. **EV Ready.** Twenty five (25) 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.

3. **EV Chargers.** Five (5) 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.

When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, 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 EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.

4.106.4.2.2 Existing Buildings.

1. When 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 percent (10%) of the total number of parking spaces added or altered shall be EVCS. Any existing EV Capable spaces on the building property required by the locally adopted codes at the time of building permit shall be upgraded to a minimum of Level 1 EV Ready. Upgrades shall be required at currently designated vehicle parking spaces. Upgrades shall be required for remaining parking spaces after meeting the accessibility requirements of California Building Code Chapters 11A and 11B.
2. When new parking facilities are added and ALMS is installed, the ALMS system must be designed to deliver no less than 2.2 kVa (110/120 volt, 20-ampere).

4.106.4.3.2.1 Electric vehicle charging stations (EVCS). Electric vehicle charging stations required by Section 4.106.4.2.2 shall comply with Section 4.106.4.3.2.1.

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.

4.106.4.3.2.1.1 Location. EVCS shall comply with at least one of the following options:

1. The charging 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 charging 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 4.106.4.3.2.1.1 and Section 4.106.4.3.2.1.2.

4.106.4.3.2.1.2 Electric vehicle charging stations (EVCS) dimensions. The charging spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
 - a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

Exception: Where the City's Municipal or Zoning Code permits parking space dimensions that are less than the minimum requirements stated in this section 4.106.4.3.2, and the compliance with which would be infeasible due to particular circumstances of a project, an exception may be granted while remaining in compliance with California Building

Code Section Table 11B-228.3.2.1 and 11B-812, as applicable.

4.106.4.2.2.1.3 Accessible EV spaces. In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when 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.

4.106.4.4 Direct current fast charging stations. One DCFC may be substituted for up to five (5) EVCS to meet the requirements of 4.106.4.1 and 4.106.4.2. Where ALMS serve DCFC stations, the power demand from the DCFC shall be prioritized above Level 1 and Level 2 spaces.

4.106.4.2.3 EV space requirements.

1. **Single EV space required.** Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. 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 enclosure in close proximity to the location or the proposed location of the EV space. Construction documents shall identify the raceway termination point, receptacle or charger location, as applicable. The service panel and/or subpanel shall have a 40-ampere minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space, at the time of original construction in accordance with the *California Electrical Code*.

2. **Multiple EV spaces required.** Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles, or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location or the proposed location of the EV space at the time of original construction in accordance with the *California Electrical Code*.

4.106.4.2.4 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV

CAPABLE" in accordance with the *California Electrical Code*.

4.106.4.2.5 Electric Vehicle Ready Space Signage. Electric vehicle ready spaces shall be identified by signage or pavement markings, in compliance with Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings. When 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 spaces) capable of supporting future Level 2 EVSE.

Notes:

1. ~~Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.~~

~~There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.~~

CHAPTER 5 NONRESIDENTIAL MANDATORY MEASURES

SECTION 5.106 SITE DEVELOPMENT

5.106.5.3 Electric vehicle (EV) charging. Construction to provide electric vehicle infrastructure and facilitate electric vehicle charging shall comply with Section 5.106.5.3 and shall be provided in accordance with regulations in the *California Building Code* and the *California Electrical Code*. Accessible EVCS shall be provided in accordance with the *California Building Code Chapter 11B Section 11B-228.3*. For EVCS signs, refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

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:
 - a. Where there is no local utility power supply.
 - b. Where the local utility is unable to supply adequate power.
 - c. 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 increase construction cost by an average of \$4,500 per parking space. EV infrastructure shall be provided up to the level that would not exceed this cost for utility service. ~~adversely impact the construction cost of the project.~~

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

5.106.5.3.1 Nonresidential Occupancy Class B Offices – Shared Parking Space.

5.106.5.3.1.1 New Construction. Twenty percent (20%) of parking spaces shall be EVCS with Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. Thirty percent (30%) of parking spaces provided shall be Level 2 EV Capable.

5.106.5.3.1.2 Existing Buildings. When 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 percent (10%) of the total number of parking spaces added or altered shall be EVCS with Level 2 EV Ready. Any existing EV Capable spaces on the building property required by the locally adopted codes at the time of building permit shall be upgraded to a minimum of Level 1 EV Ready. Upgrades shall be required at currently designated vehicle parking spaces. Upgrades shall be required for remaining parking spaces after meeting the accessibility requirements of California Building Code Chapters 11A and 11B.

5.106.5.3.1 — EV capable spaces. ~~[N]~~ EV capable spaces shall be provided in accordance with Table 5-106.5.3.1 and the following requirements:

1. Raceways complying with the *California Electrical Code* and no less than 1" diameter shall be provided and shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the EV-capable space and into a suitable listed cabinet, box, enclosure or equivalent. A common raceway may be used to serve multiple EV-capable spaces.
2. A service panel or subpanel(s) shall be provided with panel space and electrical load capacity for a dedicated 208/240 volts, 40-ampere minimum branch circuits for each EV-capable space, with delivery of 30-ampere minimum to an installed EVSE at each EVCS.
- 3 The electrical system and any on-site distribution transformers shall have sufficient capacity to supply full rated amperage at each EV-capable space.

4. ~~(Formerly 5.106.5.3.4 [N] Identification)~~ The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) as "EV-CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV-CAPABLE".

Note: (Relocated from Section 5.106.5.3.5 and edited) A parking space served by electric vehicle supply equipment or designed as a future EV charging space as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by an enforcement agency. See Vehicle Code Section 22511.2 for further details.

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

TABLE 5.106.5.3.1

TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CAPABLE SPACES	NUMBER OF EVCS (EV CAPABLE SPACES PROVIDED WITH EVSE)²
0-9	0	0
10-25	4	0
26-50	8	2
51-75	13	3
76-100	17	4
101-150	25	6
151-200	35	9
201 and over	20 percent of total ¹	25 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.

...

5.106.5.3.2 Electric vehicle charging stations (EVCS). EV capable spaces shall be provided with EVSE to create EVCS in the number indicated in Table 5.106.5.3.1. The EVCS required by Table 5.106.5.3.1 may be provided with EVSE in any combination of Level 2 and Direct Current Fast Charging (DCFC), except that 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 5.106.5.3.1 for each EV capable space is accumulatively supplied to the EV charger.

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

5.106.5.3.2 Hotel and Motel Occupancies – Shared Parking Facilities.

5.106.5.3.2.1 New Construction. Five percent (5%) of parking spaces provided shall be EVCS with Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. Twenty-five percent (25%) of parking spaces provided shall be Low Power Level 2 EV Ready space. Ten percent (10%) of parking spaces provided shall be Level 2 EV Capable.

5.106.5.3.2.2 Existing Buildings. When 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 percent (10%) of the total number of parking spaces added or altered shall be EVCS with Level 2 EV Ready. Any existing EV Capable spaces on the building property required by

the locally adopted codes at the time of building permit shall be upgraded to a minimum of Level 1 EV Ready. Upgrades shall be required at currently designated vehicle parking spaces. Upgrades shall be required for remaining parking spaces after meeting the accessibility requirements of California Building Code Chapters 11A and 11B.

5.106.5.3.3 All Other Nonresidential Occupancies – Shared Parking Facilities.

5.106.5.3.3.1 New Construction. Ten percent (10%) of parking spaces provided shall be EVCS with Level 2 EV Ready. ALMS shall be permitted to reduce load when multiple vehicles are charging. Ten percent (10%) of parking spaces provided shall be Level 2 EV Capable.

5.106.5.3.3.2 Existing Buildings. When 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 percent (10%) of the total number of parking spaces added or altered shall be EVCS with Level 2 EV Ready. Any existing EV Capable spaces on the building property required by the locally adopted codes at the time of building permit shall be upgraded to a minimum of Level 1 EV Ready. Upgrades shall be required at currently designated vehicle parking spaces. Upgrades shall be required for remaining parking spaces after meeting the accessibility requirements of California Building Code Chapters 11A and 11B.

5.106.5.3.3 Use of automatic load management systems (ALMS). ALMS shall be permitted for EVCS. ~~When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.3.1 for each EVCS may be reduced when serviced by an EVSE controlled by an ALMS. Each EVSE controlled by an ALMS shall deliver a minimum 30 amperes to an EV when charging one vehicle and shall deliver a minimum 3.3 kW while simultaneously charging multiple EVs.~~

5.106.5.3.4 Direct current fast charging stations. One DCFC may be substituted for up to five (5) EVCS to meet the requirements of 5.106.5.3.1, 5.106.5.3.2, and 5.106.5.3.3. Where ALMS serve DCFC stations, the power demand from the DCFC shall be prioritized above Level 1 and Level 2 spaces.

5.106.5.3.4 Accessible 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).

5.106.5.4 Electric vehicle (EV) charging readiness. Construction shall comply with Section 5.106.5.4.1 to facilitate future installation of electric vehicle supply equipment (EVSE). Construction for warehouses, grocery stores and retail stores with planned off-street loading spaces shall also comply with Section 5.106.5.4.1 for future installation of medium- and heavy-duty EVSE. Accessible

EVCS shall be provided in accordance with the *California Building Code Chapter 11B Section 11B-228.3*. For EVCS signs, refer to Caltrans Traffic Operations Policy Directive 13-01 (Zero Emission Vehicle Signs and Pavement Markings) or its successor(s).

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:
 - a. Where there is no local utility power supply.
 - b. Where the local utility is unable to supply adequate power.
 - c. 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 increase construction cost by an average of \$4,500 per parking space. EV infrastructure shall be provided up to the level that would not exceed this cost for utility service. ~~adversely impact the construction cost of the project.~~

5.106.5.4.1 Electric vehicle charging readiness requirements for warehouses, grocery stores and retail stores with planned off-street loading spaces. 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 5.106.5.4.1.1 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 5.106.5.4.1.1.
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 EVs as shown in Table 5.106.5.4.1.1.

TABLE 5.106.5.4.1.1, Raceway Conduit and Panel power Requirements for Medium-and-Heavy-Duty EVSE

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

Building type	Building Size (sq. ft.)	Number of Off-street loading spaces	Additional capacity Required (kVa) for Raceway & Busway and Transformer & Panel
		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