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To: Planning Directors of Coastal Cities and Counties
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Planning and Permitting for Electric Vehicle Charging Stations in the Coastal Zone

I. Introduction & Purpose

The transportation sector currently accounts for approximately 40% of California's annual greenhouse gas (GHG) emissions.[1] The shift away from fossil fuel-powered vehicles to cleaner transportation alternatives is a critical step toward meeting statewide goals of carbon neutrality by 2045 (per AB 1279) and addressing the substantial, inequitable effects that extracting, processing, and burning fossil fuels has on environmental justice communities.[2] Promoting the shift to electric vehicles (EVs) will help achieve the state's clean transportation goals, including Executive Order N-79-20's requirement to phase out gas powered vehicle sales by 2045. As more EVs enter the transportation sector, access to EV charging stations becomes more critical, and the efficient permitting of such charging stations becomes an important component of encouraging the shift to clean transportation. As such, there are several recent legislative actions that aim to facilitate expedited permitting and installation of EV charging stations and to improve equitable access for EV owners to any publicly available charging station.

To support alignment of the Coastal Act's coastal resource protection mandates with the intent of this recent legislation, this memo is intended to: 1) describe the circumstances under which a coastal development permit (CDP) may or may not be required (Section III); 2) aid in development of Local Coastal Program (LCP) policies and ordinances that protect coastal resources and maximize public access while expediting review of EV charging stations (Section IV); 3) identify potential coastal resource and public access concerns (Section VI) and related considerations (Section VII) with EV charging station planning and permitting efforts in the coastal zone; and 4) convey the minimum CALGreen Building Code standards pertaining to EV charging stations (Section VIII), including the minimum number of EV charging stations for residential and non-residential development.[3] This memo also provides example Commission actions

[1] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf
[2] Here, the term "environmental justice communities" refers to low-income communities, communities of color, and other underrepresented populations with higher exposure and/or sensitivity to fossil fuel industry activities and climate change impacts due to historical marginalization, discriminatory land use practices, and/or less capacity to mitigate adverse impacts.

(Section V), a list of common terms and definitions (Section IX), and visual examples of EV charging stations (Attachment 1).

Local governments and EV charging station permit applicants should read this memo in conjunction with the California Office of Business and Economic Development's (GO-Biz) Electric Vehicle Charging Station Permitting Guidebook (2023), which provides additional information on how to comply with AB 1236, AB 1100, and AB 970, including best practices for permitting checklists and the general permitting process.

II. Background

Several recent state laws address the need to efficiently permit and install EV charging stations. Specifically:

- Assembly Bill 1236 (Chiu, 2015), which is codified in Government Code Section 65850.7, requires all local governments to approve applications for EV charging stations through the issuance of a building permit or similar nondiscretionary permit, and limits the review of such applications to whether the EV charging station project meets all health and safety requirements of local, state, and federal law. This bill also requires local governments to adopt an ordinance that creates an expedited permitting process for the installation of EV charging stations within their jurisdiction. AB 1236 also requires local governments to adopt and publish a permitting checklist containing all applicable information requirements to facilitate expedited permit processing.[4]
- Assembly Bill 1100 (Kamlager-Dove, 2019), which is codified in Vehicle Code Section 22511.2, requires an EV charging space[5] to count as at least one standard parking space, and an accessible EV charging space with an access aisle to count as at least two standard parking spaces for the purpose of complying with any applicable minimum parking requirements established by a local jurisdiction.
- Assembly Bill 970 (McCarty, 2021), which is codified in Government Code Section 65850.71, builds upon AB 1236 by adding specific binding timelines on review periods for EV charging station permit applications based on the size of the project.[6] The bill also requires local jurisdictions to reduce the number of required parking spaces by the amount necessary to accommodate the EV charging station if the EV charging station and associated equipment in any way impacts the number of parking spaces required for existing uses.

In addition, several recent state laws address the need for expanding equitable access to any publicly available EV charging station, regardless of the system provider:

[4] See AB 1236 for full text.

[5] An EV charging space is a space intended for future installation of EV charging equipment and charging of EVs.

[6] If the local jurisdiction does not find the permit application incomplete and/or does not notify the applicant of necessary changes or specific information required for a review of the project, an application for projects with 1-25 EV charging stations at a single site will be deemed complete after 5 business days then deemed approved after 20 business days; and an application for projects with 26 or more stations at a single site will be deemed complete after 10 business days then deemed approved after 40 business days. See AB 970 for full text.

- Senate Bill 454 (Corbett, 2013), known as the "Electric Vehicle Charging Stations Open Access Act" and codified in Health and Safety Code Section 44268 and 44268.2, requires EV charging station service providers to provide multiple forms of payment options and certain labeling and directional signage, as well as reporting requirements on the station's location, fees, and accepted methods of payment to the National Renewable Energy Laboratory.
- Senate Bill 123 (Committee on Budget and Fiscal Review, 2023), codified in Health and Safety Code Section 44268, 44268.2, and 44268.4, builds on SB 454 to add and clarify form of payment requirements and directs the California Energy Commission (CEC) to update and enforce the EV Supply Equipment Standards adopted by the California Air Resources Board (CARB) pursuant to SB 454.

In the coastal zone, the installation of new, or expansion of existing, EV charging stations constitutes "development" that is subject to the Coastal Act and its CDP requirements (see Coastal Act Section 30106). AB 1236, AB 1100, and AB 970 do not supersede, repeal, or amend the Coastal Act, and their language governs cities and counties, but not state agencies such as the Coastal Commission. Because local governments issuing CDPs are acting under authority of state law (the Coastal Act), and because AB 1236, AB 1100, and AB 970 do not modify Coastal Act requirements, EV charging station projects should still be subject to CDP review under the timelines provided by the Coastal Act and other applicable state law (e.g., Permit Streamlining Act).[7] In addition, any changes to local zoning regulations to reflect the requirements of AB 1236, AB 1100, and AB 970 may require a LCP amendment. At the same time, the Commission and local governments should work to carry out these laws and their goals of facilitating EV charging station installations to the maximum extent feasible while still complying with the Coastal Act.

Several Coastal Act policies directly and indirectly support the development of EV charging stations. Namely, Coastal Act Section 30253 requires new development to be consistent with requirements imposed by the California Air Resources Board, which is generally requiring the reduction of GHGs. Other policies are implicated by climate change's impacts on coastal resources. Section 30270 requires the Commission to take the effects of sea level rise into account in planning and permitting activities. Other policies require the protection of coastal waters, marine resources, and sensitive habitats (Sections 30230, 30231, and 30240) and the maximization of public access to the shoreline (Section 30210). EVs are a critical part of our shift to cleaner transportation that reduces GHG emissions and air pollution, and can thus help reduce the effects that climate change and sea level rise are having on marine resources, public coastal access, and other coastal resources.

Notably, the Commission's Sustainability Principles (2023) encourage permit streamlining opportunities for appropriately sited and designed EV infrastructure, and its

[7] *See* California Governor's Office of Business and Economic Development, *Electric Vehicle Charging Station Permitting Guidebook,* at p. 43 ("A Coastal Development Permit (CDP) may be required to install charging stations located in the coastal zone."), available at https://business.ca.gov/wp-content/uploads/2019/12/GoBIZ-EVCharging-Guidebook.pdf;
Charles A. Pratt Construction Co., Inc. v. Coastal Commission (2008) 162 Cal.App.4th 1068.1070-72.

2021-2025 Strategic Plan— particularly Objective 4.5—calls for Commission actions to protect coastal resources through GHG reduction measures in LCPs, CDPs, and other efforts.

Although EV charging stations play an important role in reducing GHG emissions, they also have the potential for impacts to coastal resources that are protected under the Coastal Act. Thus, it is important for the Commission and local governments to consider these potential impacts in any expedited permit review efforts, creation of permitting checklists, and new or updated LCP policies or ordinances.

III. Expedited Permitting Options for EV Charging Stations in the Coastal Zone

EV charging stations store and transmit electricity, and their installation or expansion typically requires trenching, laying conduit, paving, and erecting solid structures, such as transmitters and electrical panels. Because construction of such facilities qualifies as "development" under the Coastal Act, it requires appropriate Coastal Act authorization. Fortunately, the Coastal Act provides methods for streamlined authorization including exemptions, waivers, administrative permits, local hearing waivers, and immaterial amendments. Applications may be processed pursuant to these methods only where the development meets the prescribed Coastal Act criteria and, for projects in a local government's permitting jurisdiction, where these processes are integrated into the local government's certified LCP. Local governments are encouraged to update their LCPs to support streamlining opportunities where they are not already available for EV charging station projects, and CDP applicants are encouraged to reach out to the permitting agency early on (i.e., before an official application submittal) to facilitate a smooth permitting process. CDP applicants should also consider de-coupling their EV charging station project from other potentially related projects—e.g., a major shopping mall retrofit project that will also include EV charging stations—in order to avoid complicating and delaying the permitting process.[8]

CDP Exemptions: Where EV charging stations are proposed to be installed or expanded as improvements to existing structures, they may be exempt from CDP requirements altogether, whether under the Coastal Act or similar LCP policies. Potentially relevant exemptions include:

- **Improvements to a single-family residence** (see Coastal Act § 30610(a); 14 Cal. Code Regs § 13250). In the past, the Commission has found that the installation of, or improvements to, EV charging stations located in existing, legally permitted areas of single-family residences (e.g., garages) are considered typically associated with a single-family residence and would normally be exempt.
- **Improvements to structures other than single-family residences or public works facilities** (see Coastal Act § 30610(b); 14 Cal. Code Regs § 13253). This exemption could apply to EV charging station projects at multi-family residences,

[8] However, public agencies will need to consider whether analyzing projects separately would be consistent with any applicable legal requirements, such as under the California Environmental Quality Act, to analyze the environmental effects of a project as a whole.

businesses, and privately owned parking structures. Because the exemption does not apply to improvements to public works facilities, the same exemption would not extend to public parking facilities. In all cases where the exemption does not apply, other streamlined approval mechanisms may be available, as described below.

- **Repair and maintenance of existing EV charging stations** (see Coastal Act Section 30610(d); 14 Cal. Code Regs § 13252). This exemption would apply to existing charging stations only. Replacement of fifty percent or more of an existing EV charging station constitutes new development and would not qualify for a repair and maintenance exemption.

Note that the exemptions described above do not apply in some locations where there is a heightened risk of environmental effects or if a prior permit condition disallows the exemption.[9] For example, they do not apply if a project is located in an environmentally sensitive habitat area, in an area designated as highly scenic in a certified LCP, or within 50 feet of the edge of a coastal bluff; if the project is located in an area between the sea and the first public road or within 300 feet of the inland extent of any beach, whichever is greater; if the project involves any significant alteration of landforms, including removal or placement of vegetation, within 50 feet of the edge of a coastal bluff or in environmentally sensitive habitat areas; or if the conditions of a previous permit indicate that future development requires a permit.

Certified LCPs should already include exemptions that reflect the provisions above. Local governments may also consider explicitly listing EV charging stations in their LCPs as a type of improvement that is exempt from CDP requirements if the exemption criteria are met.

CDP Waivers: For EV charging stations that are not exempt, a CDP waiver might be appropriate. The benefit of waivers is twofold. First, the fee for a waiver is significantly less than the fee required for an Administrative Permit or Coastal Development Permit. In addition, waivers may be processed significantly faster because the development is minor in nature, and the project will not be subject to special conditions since there is no potential to adversely impact coastal resources. For development in the Commission's permitting jurisdiction, there are two types of potentially applicable waivers:

- **Standard waivers**: Where a type of development that would normally qualify as an exempt improvement or repair and maintenance is identified as requiring a permit due to its location (see exemption discussion above), the Coastal Commission's Executive Director may waive the requirement for a CDP if they find that the impact of the development on coastal resources would be insignificant (see 14 Cal. Code Regs §§ 13250(c), 13252(e), 13253(c)). This type of waiver requires a brief written description explaining the project and the reasons why the development's impact on coastal resources is insignificant. Waivers must be reported to the Commission at a public hearing to provide an opportunity for interested parties and Commissioners to raise questions or to

[9] 14 Cal. Code Regs §§ 13250(b), 13253(b).

object to the issuance of the waiver. If three or more Commissioners object to issuance of the waiver, a CDP would be required.

- **De minimis waivers**: The Commission's Executive Director may waive the requirement for a CDP for "de minimis" development that has no potential for any individual or cumulative adverse effects on coastal resources and that is consistent with all Chapter 3 policies of the Coastal Act (see Coastal Act § 30624.7; 14 Cal. Code Regs §§ 13238 – 13238.2). This type of waiver is not limited to specific categories of development, so could potentially be used to authorize charging stations at existing or proposed rest stops, publicly owned parking facilities, or other public works facilities where the project is appropriately sited and designed to have no potential adverse effects on coastal resources and to be consistent with Chapter 3 of the Coastal Act or the policies of the certified LCP. De minimis waivers do not take effect until they have been reported to the Commission at the first regularly scheduled hearing following the issuance of the waivers by the Executive Director. At the hearing, the Commissioners may request that the waiver not be effectuated, in which case a CDP would be required.

Local governments may also issue permit waivers for "de minimis" development. However, de minimis waiver provisions must be specifically certified as part of the LCP, and the project site cannot be in the Commission's appeals jurisdiction for this waiver option to apply.[10]

Administrative Permits: Where an EV charging station project does not fit within the criteria allowing for an exemption or waiver, an administrative permit could be used. Section 30624 of the Coastal Act allows for the issuance of administrative permits for certain non-emergency developments, including any improvements to existing structures; any other developments not in excess of one hundred thousand dollars ($100,000) other than any division of land; and any development specifically authorized as a principal permitted use and proposed in the area certified under the LCP. Administrative permits streamline the permitting process by allowing for a staff level of review and approval of a development. However, local governments must have administrative CDP provisions in their certified LCPs in order to issue such permits and are encouraged to incorporate such provisions through an LCP update. Any administrative permit issued by the Commission's Executive Director must be reported to the Commission at its next hearing, and if one third of the Commissioners object to issuing the administrative permit, then it does not become effective and a regular CDP application must be submitted.[11] Similarly, for administrative permits issued by designated local government officials, the permit must be placed on the agenda of the local governing body at its first scheduled meeting after the permit has been issued. This allows for potential objections from interested persons, including the Executive Director of the Coastal Commission, and/or the local governing body.[12] If one third of

[10] See Pub. Res. Code § 30603 for a description of where the Commission's appeals jurisdiction applies.
[11] Pub. Res. Code § 30624(a), (b); 14 Cal. Code Regs §§ 13145 – 13153.
[12] Pub. Res. Code § 30624(c).

the members of the local governing body so request, the administrative permit will not take effect and a regular CDP will be required.

Local Hearing Waivers: The Coastal Act allows for local governments to include a provision in their LCPs to waive the public hearing requirement for certain minor developments. Local governments may waive the requirement for a public hearing for minor development which a local government determines is consistent with its certified LCP, requires no discretionary approvals other than the subject CDP under review, and has no individual or cumulative adverse effect on coastal resources or public access to and along the coast.[13] The local government may only waive the requirement for a public hearing if public notice is provided, consistent with specific public noticing provisions, and if no parties specifically request a hearing.

This public hearing waiver also can be used for qualifying development that is appealable to the Commission (e.g., if the development is located within the Commission's appeals jurisdiction). Thus, this expediting option may be appropriate for EV charging station projects that do not qualify for a CDP waiver or administrative permit. If there are no objections to waiving the public hearing, and the hearing is subsequently waived, local parties may no longer have standing to submit an appeal either at the local level or to the Commission for the subject CDP.[14] It should be noted, however, that the development still qualifies as appealable development, and the Commission's typical appeal period must run to allow for any potential appeals by Coastal Commissioners.

Immaterial CDP Amendments: EV charging stations are often installed at or in existing permitted structures, and in such cases may be processed as a material or immaterial CDP amendment. For an EV charging station to qualify for an immaterial CDP amendment, there must be no potential for adverse impacts, either individually or cumulatively, on coastal resources or public access to and along the shoreline.[15] Immaterial CDP amendment determinations are also made at a staff level with specific noticing and reporting requirements that allow for a more streamlined process than material amendments. Local governments must also have the appropriate provisions within their certified LCP in order to issue such permit amendments.

IV. Planning for EV Charging Stations in the Coastal Zone

Local governments will likely be seeking LCP amendments to address AB 1236, AB 1100, and AB 970 and provide direction for efficiently approving EV charging stations through their certified LCPs. As noted in Section III above, local governments are encouraged to update their LCPs to harmonize the requirements of these laws with the Coastal Act. This may include:

- Explicitly listing EV charging stations in their LCPs as a type of improvement that is exempt from CDP requirements if the exemption criteria are met;

[13] Pub. Res. Code § 30624.9.
[14] Pub. Res. Code § 30624.9.
[15] 14 Cal. Code Regs § 13166(b)

- Providing for de minimis waiver, administrative permit, local hearing waiver, and immaterial CDP amendment permitting processes;
- Defining if or how EV charging spaces, EV capable spaces, or EV ready spaces count towards minimum parking requirements for existing uses pursuant to AB 1100 and AB 970, as described further in Section VII below; and
- Defining the minimum required amount of EV charging stations for new development, as described further in Section VIII below.

AB 1236 specifically requires local jurisdictions to create a permitting checklist containing all applicable information requirements to facilitate expedited review of EV charging station permits. These checklists could be a venue to flag potential Coastal Act applicability for permit applicants. For instance, checklists could include a note that if the proposed project is located within the coastal zone, the permittee must contact the local planning department (if the local government has a certified LCP) or the Coastal Commission local district office to confirm whether a CDP is required. Checklists created by local jurisdictions in the coastal zone could be a standalone document or become part of a certified LCP, but would need to be certified as part of the LCP if the checklist were to include any additional criteria for streamlining CDP review or protecting coastal resources. This is because the LCP is the standard of review for ensuring new development is consistent with the Coastal Act, and any outside documents such as AB 1236 permitting checklists must be certified by the Commission in order to become part of the standard of review.

All LCP amendments are reviewed and certified by the Commission on a case-by-case basis to ensure consistency with the Coastal Act. As such, local governments are also encouraged to contact the appropriate Coastal Commission local district office to discuss EV-related LCP amendment efforts early on, before a formal submittal. Early coordination can help to streamline the LCP amendment review process as well.

V. Examples of Approved Commission Actions

CDP Exemption No. 5-19-0235-X (Long Beach, 2019): Conversion of 22 standard parking spaces to 19 standard electric and 2 ADA-accessible electric charging spaces with EV charging stations and associated electrical and site improvements at an existing commercial parking garage with 2,200 total parking spaces. Approved as exempt pursuant to Coastal Act § 30610(b) as an improvement to a structure other than a single-family residence or public works facility and pursuant to Coastal Act § 30610(d) as exempt repair and maintenance activity.

Waiver No. 5-19-0667-W (Seal Beach, 2019): De minimis waiver for the installation of two dual EV charging stations with associated new conduit equipment which connect to an existing electrical panel to serve four existing parking spaces in an existing apartment complex parking lot. Approved as submitted.

Waiver No. 6-21-0630-W (Imperial Beach, 2021): De minimis waiver for the replacement of existing single port EV charging station with a dual port EV charging station. Approved as submitted.

CDP No. 5-21-0391 (Newport Beach, 2022): Removal and construction of a junior lifeguard building and reconfiguration of the parking lot, including adding EV charging stations. The permit's special conditions state that the applicant shall submit parking lot plans which identify the location and type of EV charging spaces ("EV ready" and "EV capable"). Approved with conditions.

LCP Amendment No. LCP-6-OCN-20-0088-3 (Oceanside, 2022): Amendment to the City of Oceanside's certified Implementation Plan (IP) to incorporate four new sections that implement the City's Climate Action Plan, including Section 2048 (Electric Vehicle Parking and Charging Facilities). Section 2048 requires multi-family residential and non-residential development of a certain scale to provide preferential parking and charging facilities for EVs in exceedance of state law minimum requirements. The LCP amendment was determined to be de minimis. Approved as submitted.

LCP Amendment No. LCP-3-STC-20-0040-2-Part B (Santa Cruz, 2021): Amendment to the City of Santa Cruz's certified IP to eliminate the requirement to obtain a design review permit for new EV charging stations and to modify the definition of EV supply equipment to be consistent with CALGreen. All applications for EV charging stations in the coastal zone would still be required to go through the LCP's coastal permitting procedures (unless excluded or otherwise exempt) to ensure the protection of coastal resources. Approved as submitted.

VI. Coastal Resource Considerations

In determining whether a CDP exemption or waiver applies, whether a CDP may be approved, or whether an EV-related LCP amendment is consistent with the Coastal Act (hereafter collectively referred to as "EV charging station planning and permitting efforts"), the presence of and potential impacts to coastal resources must be considered on a case-by-case basis. The most typical coastal resource concerns for EV charging station planning and permitting efforts include maximizing public access and recreation opportunities; impacts to environmentally sensitive habitat areas (ESHA), coastal waters, and visual resources; avoiding siting infrastructure in hazardous areas; and benefits or impacts to environmental justice communities. The following sections describe how these various concerns may arise and how they may be analyzed and avoided. In all cases, early communication between applicants, the local government, and/or the Coastal Commission local district office is key to identifying and avoiding potential coastal resource impacts and facilitating an expedited review process.

Public Access and Recreation: The Coastal Act requires public coastal access and recreation opportunities to be maximized for all people.[16] As the state transitions away from fossil fuel-based vehicles to EVs, access to EV charging stations on the coast is becoming an increasingly important element of maximizing public access. On the other hand, public access and recreation opportunities may be impacted if EV charging stations installed along the coast limit the availability of non-EV parking in popular public access areas, which would limit opportunities for those who rely on older, gas-powered

[16] See Pub. Res. Code §§ 30210 through 30224.

vehicles to access the coast. Reducing the number of minimum required standard parking spaces in order to accommodate EV charging stations, as called for by AB 1100 and AB 970, may also impact coastal access and recreation opportunities. Lastly, coastal access and recreation opportunities for EV owners may be impacted if charging stations in public parking areas, particularly coastal/beach access parking lots, do not provide for equitable use by a broad range of EV owners.

Thus, several factors may affect whether EV charging station planning and permitting efforts are consistent with Coastal Act or LCP policies requiring the maximization of public access and recreation opportunities. Coastal Act consistency is more likely if there is a balanced supply of EV charging spaces and non-EV parking spaces to meet the general demand for coastal access parking. Vehicular parking may also be less crucial overall if robust transit, bike, or alternative transportation options serve the area. In such areas with sufficient non-EV parking and access opportunities to meet demand and no other coastal resource impacts, it is more likely that EV charging station projects could qualify for a CDP exemption or waiver. Otherwise, EV charging station planning and permitting efforts should be analyzed for how to maximize coastal access and recreation opportunities by considering the following context:

- The area's existing supply of EV charging spaces and standard vehicle parking spaces,
- The current and anticipated demand for all types of parking and EV charging at and near the project site,
- The applicable standard parking requirements associated with the existing or proposed use (if any),
- The adequacy of the parking services available on-site (e.g., the condition of accessways, sidewalks, and parking pavement),
- Opportunities to provide charging access to a broad range of EV users, especially in public parking areas (see the **Environmental Justice** discussion on p. 12 and **Charging Connectors** discussion on p. 14 for more information); and
- Whether alternate forms of transportation (e.g., bicycle and pedestrian paths, bus or shuttle services) are available nearby.

Relatedly, local governments and Commission staff should also consider requiring clear and conspicuous signage as needed for EV charging station projects, which plays a key role in increasing public access. For example, EV charging station projects in public parking areas should include strategically located signage (e.g., near and facing street access points) that publicizes the type of charging station (e.g., Level 2 or 3), what connectors and adapters are available, and what payment options are available.[17]

[17] Note that the EV Charging Stations Open Access Act requires EV charging station service providers to disclose specific information on all publicly available charging station equipment that requires payment for use (including all associated fees for a charging session). This Act also requires EV charging station service providers to report to the National Renewable Energy Laboratory on their existing and new EV charging station inventory, which supports EV charging station mapping efforts including the U.S. Department of Energy's Alternative Fueling Station Locator. See CARB's EV Supply Equipment Standards Regulation (soon to be updated and enforced by the CEC) for more details. Still, additional physical and publicly visible signage can help notify EV users of their ability to use an EV charging station.

ESHA and Coastal Waters: The Coastal Act requires that new development protect ESHA, coastal waters, and coastal water quality, including by limiting the types of development that can occur directly within ESHA and coastal waters, such as wetlands.[18] EV charging stations are unlikely to qualify as a use that is permitted in ESHA or wetlands. However, EV charging stations may be proposed in areas adjacent to ESHA or coastal water bodies, in which case there is the potential for indirect impacts that will need to be considered and addressed. For example, where proposed development is located near ESHA, construction noise and equipment could disrupt breeding or foraging activities of sensitive species. Similarly, construction activities could adversely impact water quality or marine resources through the discharge of contaminated runoff and debris. This may be particularly relevant where local governments are considering the installation of grid-connected EV charging stations with new electrical infrastructure, which would require trenching and paving (as opposed to grid-connected chargers on existing infrastructure, or off-grid and mobile charging stations, which would not require trenching and paving).[19] As such, EV charging station planning and permitting efforts should consider:

- Proximity to any nearby ESHA or coastal waters,
- Evidence of compliance with any applicable buffer requirements for both the proposed project site and any construction staging/storage area,
- Whether any construction best management practices are proposed or needed to provide runoff, erosion, and sediment controls for construction equipment and materials, and
- Whether any ESHA or non-ESHA native vegetation is proposed to be removed, and if this can be avoided by siting the project in a previously disturbed area.

Visual Resources: The Coastal Act requires that new development protect scenic and visual resources.[20] Development of EV charging stations may result in scenic or visual resource impacts depending on the scale of the proposed project and the geographic area in which it is located. While AB 1236 generally disallows requiring aesthetic changes to EV charging stations unless they are addressing a specific health and safety impact,[21] development in the coastal zone requires case-by-case consideration to harmonize Coastal Act protections for visual resources with requirements to streamline EV charging station permits.

To date, most EV charging stations in the coastal zone tend to be small scale developments with a few small EV charging boxes in the case of Level 2 chargers, or a few larger cabinets (4-6 feet tall) and a utility hub container for Direct Current Fast Charging (DCFC) stations. The National Electric Code calls for indoor charging stations to be mounted 18 to 48 inches above the floor, and for outdoor stations to be mounted at least 24 inches above grade.[22] Outdoor charging stations are typically mounted at a

[18] See Pub. Res. Code §§ 30230, 30231, 30233, 30240.
[19] GO-Biz Electric Vehicle Charging Station Permitting Guidebook, Second Edition, 2023, pp. 16 and 49.
[20] See Pub. Res. Code § 30251.
[21] See GO-Biz's EV charging station permit streamlining fact sheet on aesthetics and screening, at https://business.ca.gov/wp-content/uploads/2019/12/GoBIZ-EVCharging-Guidebook.pdf.
[22] https://www.pge.com/includes/docs/pdfs/about/environment/pge/electricvehicles/ev5pt3.pdf

height of three to six feet in order to minimize trip hazards, avoid physical damage to the equipment, and facilitate connection to the EV. Most stations are also sited in developed areas and existing parking lots. See **Attachment 1** at the end of this memo for visual examples. However, as EV use expands, charging station projects may increase in scale and geographic reach (e.g., in more rural and scenic areas where they are most needed). Thus, visual resource impacts may become more pronounced, for example by blocking or altering views to or along the ocean or other scenic coastal areas. To help ensure protection of scenic and visual resources along the coast, EV charging station planning and permitting efforts should consider:

- Proximity to any designated scenic and visual resource areas,
- Siting and design modifications as necessary to avoid obstruction of any designated scenic and visual resources and to improve visual compatibility with the character of the surrounding area (e.g., height adjustments, co-locating infrastructure in existing or proposed developed areas),
- Siting and design modifications as necessary to minimize alteration of natural landforms, including grading and vegetation removal,
- Undergrounding equipment if feasible,[23]
- Evidence of compliance with any applicable design criteria or height requirements, and
- Supporting visual impact analyses (e.g., project renderings) if necessary.

Hazards: The Coastal Act requires new development to minimize risks to life and property in areas of high geologic, flood, and fire hazards.[24] Whether the EV charging stations will be in areas of high geologic, flood, and fire hazards at any point during the life of the development must therefore also be considered. For instance, if underground electrical wiring is needed, rising groundwater may pose risk of water damage to the EV charging station components. However, in general, this review should only extend to the increased risk the charging infrastructure may add, not the underlying risk that may be experienced by the existing roadway, parking lot, or other location. To help minimize hazard risks, EV charging station planning and permitting efforts should consider:

- Proximity to any environmental hazard areas, including but not limited to flood, tsunami, sea level rise, fire, seismic, landslide, or liquefaction risk areas,
- The project's vulnerability and resiliency to any environmental hazard areas over the project's full design life, including as may be exacerbated by sea level rise,
- Evidence of compliance with any required hazard setbacks,
- Siting and design modifications to minimize risks to life and property over the project's full design life (e.g., siting above the base flood elevation, waterproofing/floodproofing, secure anchoring), and

[23] Feasibility of undergrounding equipment may be affected by space constraints caused by existing underground infrastructure, accessibility issues, and overall costs.
[24] See Pub. Res. Code § 30253.

- The need for special conditions related to minimization of risk if a project will be located in a hazardous area, such as assumption of risk and future relocation or removal of threatened development based on identified triggers or thresholds.

Environmental Justice: The Coastal Act provides the Commission with authority to consider and advance environmental justice through its decision-making.[25] As defined in Section 30107.3(a) of the Coastal Act, "environmental justice" means "the fair treatment and meaningful involvement of people of all races, cultures, incomes and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Environmental justice communities are more likely to live near industrial and commercial facilities and major transportation infrastructure (e.g., freeways, ports) that produce traffic, emissions, and noise. As a result of this proximity, environmental justice communities experience increased health impacts like premature deaths, asthma, and mental health issues associated with respiratory disease.[26] Thus, environmental justice communities may benefit greatly from the shift away from fossil fuel-powered vehicles to clean transportation, including EVs, multi-modal, and public transportation, and the associated improvements to environmental and public health.

However, shifting to EVs also has the potential to exacerbate environmental justice concerns. For example, the equitable distribution of environmental benefits and the displacement of standard public parking spaces by EV charging spaces may have adverse impacts if environmental justice and equity are not thoroughly considered in the planning and permitting process. Environmental justice communities may not have equitable access to the many benefits of EV charging stations due to the limited availability and locations of public charging stations, which can be compounded by the cost of retrofitting homes and apartments with EV chargers for residents.[27] The current cost of purchasing an EV is also an environmental justice barrier, though more affordable EVs are increasingly available and EV maintenance and fueling costs are substantially lower than for gas-powered vehicles. To address these concerns, the following are examples of environmental justice issues to consider for EV charging station planning and permitting efforts:

- **Location:** Will the EV charging station(s) be located in or near an environmental justice community in need of charging stations, or in a public location that is equitably accessible?[28] Are there sufficient standard parking spaces available for non-EV owners? Are there any siting or design modifications needed to improve equitable and safe access to the charging stations, such as lighting or multi-lingual signage?

[25] See Pub. Res. Code §§ 30013 and 30604(h).
[26] Environmental Protection Agency. (2021, July). Environmental Justice Primer for Ports: Impacts of Port Operations and Goods Movement. US EPA
[27] There are a number of state and federal initiatives that prioritize installation of EV charging stations in environmental justice communities, including the Justice40 Initiative, Caltrans' National Electric Vehicle Infrastructure Program (NEVI), CARB's Sustainable Transportation Equity Project (STEP), and CALeVIP's Golden State Priority Project. The US Department of Energy compiled a list of additional California laws and incentives related to alternative fuels and vehicles, advanced technologies, or air quality here: https://afdc.energy.gov/laws/all?state=CA.
[28] Oftentimes, EV charging stations are located in higher-end shopping areas that may be difficult or inconvenient to reach for middle- to lower-income consumers.

- **Price & Payment:** What is the price of the charging station in comparison to home charging rates? Can free charging be offered, or public charging that does not include private mark-ups or subscriptions to companies? Is the proposed location appropriate for lower-cost Level 2 charging or higher-cost Level 3 charging, or some combination thereof? Are there multiple options for form of payment (e.g., credit cards, debit cards, prepaid cards, smartphone applications)?
    - Note that pursuant to the EV Charging Stations Open Access Act, publicly available EV charging stations (as defined) cannot require subscription fees or memberships in order to use the station without also providing, at a minimum, both 1) a contactless payment method that accepts major credit and debit cards and 2) a toll-free number that allows initiation of payment for a charging session.
- **Coastal Access:** Is the project proposed at a beach or coastal recreation area that serves environmental justice communities travelling from a distance inland? If so, does the project maintain a sufficient amount of standard parking spaces to meet the needs of those who cannot afford EVs? How does that balance with the current or future demand for low-cost charging to support coastal recreation at the project location?
- **Community Engagement:** What are the EV charging station needs of the local community? Is the local community provided with opportunities to be meaningfully engaged in the planning of EV charging stations throughout their community (e.g., public hearings, project notifications, outreach)? Meaningful community engagement and outreach may be most appropriate for LCP updates and regional planning efforts to learn where and how the community would benefit from EV charging stations (e.g., access to charging stations, local job opportunities resulting from installing and maintaining charging stations) and how potential impacts to environmental justice communities can be avoided.

Other Coastal Resource Considerations: The Coastal Act also requires protection of other types of coastal resources that are less likely to be impacted by EV charging stations. This includes protections for agricultural lands (Coastal Act Sections 30241 and 30242), timberlands (Coastal Act Section 30243), and cultural resources (Coastal Act Section 30244). However, these resources still must be considered and protected, especially where an EV charging station project involves grading in a previously undisturbed area. Furthermore, visual, biological, and other coastal resources may qualify as tribal cultural resources, so projects that may have impacts on such resources may trigger the need for tribal consultation, as outlined in the Commission's 2018 Tribal Consultation Policy. To address these concerns, EV charging station planning and permitting efforts should consider a project's proximity to agricultural lands, timberlands, and cultural resources; whether a project site may impact tribal cultural resources; and whether tribal consultation is necessary.

VII. Additional Considerations

Parking Spaces vs. EV Charging Spaces: An EV does not need to charge every time it is parked. In fact, Section 22511.1(a) of the California Vehicle Code prohibits the parking of vehicles in EV charging spaces "unless the vehicle is connected for electric

charging purposes." Relatedly, one EV charging station may be able to charge more than one EV at any given time by serving two or more EV charging spaces. Therefore, in most cases, public EV charging stations provide EV charging spaces and not standard parking spaces. However, pursuant to AB 1100, Section 22511.2 of the California Vehicle Code designates "a parking space served by electric vehicle supply equipment or a parking space designated as a future electric vehicle charging space…as at least one standard automobile parking space for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction." Section 22511.2 of the California Vehicle Code also states that "an accessible parking space with an access aisle served by electric vehicle supply equipment or an accessible parking space with an aisle designated as a future electric vehicle charging space shall count as at least two standard automobile parking spaces for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction." It is not clear whether these provisions govern minimum parking space requirements in LCPs, as LCP policies embody state law and are not established solely by a local jurisdiction. However, jurisdictions can likely comply with the letter and spirit of these laws, as well as the Coastal Act, by considering an EV charging space, EV capable space, or EV ready space to count towards minimum parking requirements, so long as it does not create public access or other coastal resource issues. To help clarify, local governments should define in their zoning code whether EV charging spaces count as one or more standard parking spaces to ensure that the installation of EV charging stations does not create a zoning compliance issue.

Charging Connectors: There are multiple types of EV charging connectors dependent on the type of charging station and the type of charge port on the EV. Generally speaking, Level 1 charging requires a charging cable called a J1772 connector that can plug into any regular outlet and is typically provided with EV purchase; Level 2 charging uses a J1772 or a North American Charging Standard (NACS, originally proprietary to Tesla) connector; and Level 3 (DCFC) charging uses either a Combined Charging System (CCS), CHAdeMO,[29] or NACS connector.[30] Charging adapters that allow for connection between EVs and incompatible types of charging connectors are often provided with EV purchase or are generally available for purchase. However, technological and automotive industry advancements currently underway will likely change the need to provide or purchase multiple types of charging connectors and adaptors. Currently, CCS is the most common non-Tesla type of connector in the U.S., but virtually all major EV automakers operating in the U.S. have announced they are adopting Tesla's NACS charging port in new versions of their EVs by 2025 or 2026 in a movement towards a more unified industry standard.[31] As these changes are still rolling out as of 2024 and as EV technology continues to develop, permit applicants and the permitting authority should consider the most current technology available to support the broadest EV charging access possible, especially if the project site is a public charging area. In the case of Tesla charging stations, this may mean ensuring site design and cable lengths support non-Tesla vehicle usage and that CCS connectors or

[29] CHArge de Move (CHAdeMO) connectors are most common for Japanese manufactured vehicles but overall are less common than EV models with CCS and NACS ports.
[30] https://afdc.energy.gov/fuels/electricity_infrastructure.html
[31] https://evstation.com/tesla-nacs-charger-adoption-tracker/

adapters[32] are available during the interim period before NACS charging ports are widely implemented. For non-Tesla charging stations, this may mean ensuring NACS connectors or adapters are available along with CCS connectors.

EV Installation Costs: EV charger installation costs can vary depending on the project location, available electrical capacity, equipment type (e.g., kilowatts of chargers), and labor. For example, a Level 1 AC charger providing up to 2 kilowatts of power can cost between $500 to $1,000, while a public Level 2 AC charging station providing 10-20 kilowatts of power can cost $3,000 to $6,500, and a Level 3 DCFC providing 20-30 kilowatts of power can cost $10,000 to $40,000.[33] Generally, for nonresidential development, "initial construction costs to install raceway and panel capacity to support dedicated branch circuits for Level 2 chargers ranges from $870-960 for each EV Capable parking space," while EV charging infrastructure is typically "between one and four percent of the initial construction cost per parking space."[34] Overall, "it is extremely cost-effective to install EV charging infrastructure in new buildings relative to the significant retrofit costs to install infrastructure in existing buildings."[35] Installation costs also vary depending on the requirements placed on the infrastructure, e.g., whether multiple charging standards, touch screens, and credit card payment screens are required, or whether the station can rely on charging adapters to provide access to multiple standards and existing software connections to handle payment.

Setback Requirements: Local governments often specify setback requirements for new structures to maintain a safe, ADA-accessible distance between new structures and the edge of a property line or right-of-way. Setback requirements typically vary depending on the zoning district and often include specific provisions or exceptions for what types of improvements can be made within the setback area. Such setback requirements may or may not apply to EV charging stations depending on the applicable LCP regulations. Local governments are encouraged to explicitly state if and how setback requirements apply to EV charging stations in their certified LCPs to help clarify and facilitate the permit process.

Futureproofing: When reviewing EV charging station planning and permitting efforts, the Commission and local governments should also consider opportunities for future expansion and upgrading of EV charging stations, known as futureproofing. For example, hotels and other large development projects could be required to develop EV charging stations and EV charging spaces ("EV space")[36] beyond the minimum California Green Building Standards Code (CALGreen) requirements as a condition of development approval. For instance, in the City of Long Beach, it is required that for buildings containing three or more dwelling units, or a hotel that is constructed, demolished, or rebuilt, at least twenty-five percent of the total number of parking spaces

[32] https://www.tesla.com/support/supercharging-other-evs#vehicles
[33] See Table 13 in Advanced Clean Fleets - Cost Workgroup Cost Data and Methodology Discussion Draft prepared by the California Air Resources Board (December 4, 2020). https://ww2.arb.ca.gov/sites/default/files/2020-12/201207costdisc_ADA.pdf
[34] See Part 5 (Cost Analysis) in EV Charging Infrastructure: Nonresidential Building Standards prepared by the California Air Resources Board (November 2019). https://ww2.arb.ca.gov/sites/default/files/2020-08/CARB_Technical_Analysis_EV_Charging_Nonresidential_CALGreen_2019_2020_Intervening_Code.pdf
[35] *ibid.*
[36] EV charging space ("EV Space"): A space intended for future installation of EV charging equipment and charging of electric vehicles.

must be EV spaces capable of supporting future EV supply equipment, while five percent of the total number of parking spaces (and not less than one space) must have EV chargers installed.[37] Similarly, in the City of Santa Cruz, new multifamily dwellings on sites with five or more units are required to provide twelve percent of total parking spaces as EV charging stations, while new nonresidential structures are required to provide between four and six percent of the total parking spaces as EV charging stations.[38] In any event, local governments must comply with the minimum standards for EV charging stations, accessibility, and parking spaces required by CALGreen (Title 24, Part 11), as discussed further below.

VIII. California Building Code Standards for EV Infrastructure

Development of EV charging spaces and related infrastructure must comply with the minimum standards contained within the California Green Building Standards Code (CALGreen, Title 24, Part 11),[39] which sets requirements for installing EV charging station infrastructure, including minimum ratios for **EV Capable** and **EV Ready** parking spaces (see Section IX below for definitions) in new residential and nonresidential development.[40] Minimum accessibility requirements for EV charging stations are contained in the California Building Code, Chapter 11B. Local governments may include these exact standards or more stringent requirements in LCPs to harmonize these state building code requirements with the Coastal Act. It should be noted that other state standards not covered in this memo may also apply to EV infrastructure (e.g., California Department of Food and Agriculture Division of Measurement standards, California Air Resources Board regulations).[41] Below is a summary of 2022 CALGreen and accessibility standards to consider in EV charging station permitting and planning efforts. Refer to the full CALGreen text for further details and exceptions to the standards, and refer to the California Building Standards Commission website for future changes to the 2022 standards cited below.

CALGreen Residential Mandatory Measures

Section 4.106.4 of the 2022 CALGreen Building Code provides for the minimum standards pertaining to new one- and two- family dwellings, new multifamily dwellings, townhouses, and new residential parking facilities. Although housed in the "Residential Mandatory Measures" chapter, CALGreen combines the EV charging requirements for multifamily developments with hotels and motels. These standards are summarized in the table below.

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[37] See City of Long Beach municipal code 21.41.232, or https://documents.coastal.ca.gov/reports/2018/10/W11a/w11a-10-2018-report.pdf

[38] See City of Santa Cruz municipal code 24.12.241

[39] CALGreen is updated every three years as part of the triennial California Building Code update, and these mandatory standards are subject to change. At the time of this memorandum, the most recent standards available are found in the 2022 CALGreen with July 2024 Supplement (effective July 1, 2024). This most recent code version currently requires minimum standards for EV charging stations and EV parking spaces in new residential and nonresidential development in Divisions 4.1 and 5.1.

[40] Note that as of January 1, 2023, AB 2097 prohibits public agencies from imposing minimum parking requirements for certain types of development projects within a half-mile of a major transit stop. As stated in the Commission's memo on Implementation of AB 2097 Relating to Minimum Parking Requirements Near Major Transit Stops (2023), AB 2097 does not prohibit public agencies from imposing requirements for EV charging equipment parking spaces if those requirements would have otherwise applied to the development (Gov. Code § 65863.2(f)). Accordingly, the Commission and local governments may continue to require EV charging infrastructure for development located within one-half mile of a major transit stop. However, the number of spots limited to EV parking should be considered in the context of the overall parking availability at a location to ensure that adequate parking remains for all as the state transitions to more affordable and accessible EVs for all Californians.

[41] https://calevip.org/sites/default/files/docs/calevip/California_EVCS_Regulations_Guide.pdf

Section	Description
All New Residential	
4.106.4 EV charging for new construction	New construction shall comply with Section 4.106.4.1 or 4.106.4.2. Electric vehicle supply equipment (EVSE) shall comply with the California Electrical Code. 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 substantial 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 adversely impact the construction cost of the project. 2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities.
New One- and Two-Family Dwellings and Townhouses	
4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages	Install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit (i.e., provide one EV Capable space to accommodate a future Level 2 EV charging receptacle per new dwelling unit). The service panel and raceway termination location shall be identified as "EV Capable." (See full text for details.) 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.
New Multifamily Dwellings, Hotels and Motels, and New Residential Parking Facilities	
4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities	Parking spaces shall meet the requirements of Section 4.106.4.2.2 when parking is provided. (See full text for details on exceptions.)
4.106.4.2.2 Multifamily dwellings, hotels and motels	**EV ready parking spaces with receptacles:** 40 percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles for hotels and motels and multifamily parking facilities. **EV ready parking spaces with EV chargers:** 10 percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. At least 50 percent of the required EV chargers shall be equipped with J1772 connectors for hotels and motels and multifamily parking facilities. (See full text for details and exemptions.)
4.106.4.2.2.1.1 EV charging stations spaces with EV chargers installed; dimensions and location	The minimum length of each EV charging station space shall be 18 feet. The minimum width of each EV charging station space shall be 9 feet. One in every 25 EV charging station spaces, but not less than one, shall also have an 8-foot-wide minimum aisle. A 5-foot-wide minimum aisle shall be permitted provided the minimum width of the

	EV charging station space is 12 feet. (See full text for details and exemptions.)
4.106.4.2.2.1.2 Accessible EV charging station spaces	In addition to the requirements in section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EV charging stations in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.
4.106.4.2.5 EV ready space signage	EV ready spaces shall be identified by signage or pavement markings in compliance with Caltrans Traffic Operations Policy Directive 13-01 or its successor(s).
Additions and Alterations of Parking Facilities Serving Existing Multifamily Buildings	
4.106.4.3 EV charging for additions and alterations of parking facilities serving existing multifamily buildings	Where new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, 10 percent of the total number of parking spaces added or altered shall be EV capable spaces to support future Level 2 EVSE. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as “EV CAPABLE.”

CALGreen Nonresidential Mandatory Measures

Division 5.1, Sections 5.106.5.3 through 5.106.5.6 of the 2022 CALGreen Building Code provide the minimum standards for EV infrastructure and charging in nonresidential development, such as new shopping centers (excluding hotels and motels as described above), as summarized in the table below.

Section	Description
5.106.5.3 EV charging	Construction to provide EV infrastructure and facilitate EV charging shall comply with Section 5.106.5.3.1 EV capable spaces, Section 5.106.5.3.2 EV charging stations and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 EV charging stations (EVCS)— power allocation method and associated Table 5.106.5.3.6 and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code. (See full text for details on exceptions.)
5.106.5.3.1 EV capable spaces	EV capable spaces shall be provided in accordance with Table 5.106.5.3.1 and in accordance with specific requirements regarding raceways, service panels, subpanels and the electrical system. (See full text for details.)
5.106.5.3.2 EV charging stations	EV capable spaces shall be provided with EVSE to create EV charging stations in the number indicated in Table 5.106.5.3.1. The EV charging stations required by Table 5.106.5.3.1 shall be provided Level 2 EVSE or DCFC as permitted in Section 5.106.5.3.2.1. At least one Level 2 EVSE shall be provided. (See full text for details.)
5.106.5.3.3 Use of automatic load management systems (ALMS)	ALMS shall be permitted for EV charging stations. When ALMS is installed, the required electrical load capacity specified in Section 5.106.5.3.1 for each EV charging station may be reduced when serviced by an EVSE controlled by an ALMS. (See full text for details.)

5.106.5.3.4 Accessible EV charging stations	When EVSE is installed, accessible EV charging stations shall be provided in accordance with the California Building Code Chapter 11B Section 11B-228.3.
5.106.5.3.5 EV charging station signage	EV charging stations 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).
5.106.5.3.6 EV charging stations—power allocation method	The power allocation method may be used as an alternative to the requirements in Section 5.106.5.3.1, Section 5.106.5.3.2 and associated Table 5.106.5.3.1. (See full text for details.)
5.106.5.4 Additions or alterations to existing buildings or parking facilities	Existing buildings or parking facilities being modified by one of the following shall comply with Section 5.106.5.4.1 or 5.106.5.4.2. When EVSE is installed, accessible EVCS shall be provided in accordance with the California Building Code, Chapter 11B, Section 11B-228.3. 1. When the scope of construction work includes an increase in power supply to an electric service panel as part of a parking facility addition or alteration. 2. When a new photovoltaic system is installed covering existing parking spaces. 3. When additions or alterations to existing buildings are triggered pursuant to code Section 301.3 and the scope of work includes an increase in power supply to an electric service panel. (See full text for details on exemptions.)
5.106.5.4.1 Existing buildings or parking areas without previously installed EV capable infrastructure	When EV capable infrastructure does not exist at an existing parking facility or building, and the parking facility or building undergoes an addition or alteration listed in Section 5.106.5.4, construction shall include EV charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 for the total number of actual parking spaces being added or altered.
5.106.5.4.2 Existing buildings or parking areas with previously installed EV capable infrastructure	When EV capable infrastructure is available at an existing parking facility or building, and the parking facility or building is undergoing an addition or alteration listed in Section 5.106.5.4, construction shall include EV charging in compliance with either Section 5.106.5.3 and associated Table 5.106.5.3.1, or Section 5.106.5.3.6 and associated Table 5.106.5.3.6 utilizing the existing EV capable allocated power and infrastructure for the total number of actual parking spaces being added or altered. If the area being added or altered exceeds the existing EV capable capacity, allocated power and infrastructure, provide additional EV charging as needed to comply with this section.
5.106.5.5 EV charging: medium-duty and heavy-duty	Construction shall comply with Section 5.106.5.5.1 to facilitate future installation of EVSE. Construction for warehouses, grocery stores and retail stores, office buildings, and manufacturing facilities with planned off-street loading spaces shall also comply with Section 5.106.5.5.1 for future installation of medium- and heavy-duty EVSE. (See full text for details and exemptions.)

5.106.5.6 EV charging at public schools and community colleges	EV infrastructure and EV charging stations shall comply with Section 5.106.5.6 and shall be provided in accordance with regulations in the California Building Code and the California Electrical Code. (See full text for details and exemptions.)

Table 5.106.5.3.1 of the 2022 CALGreen Building Code (copied below) describes the minimum quantity requirements for EV capable spaces and EV charging stations in non-residential development.[42]

Table 5.106.5.3.1

Total Number of Actual Parking Spaces	Number of Required EV Capable Spaces	Number of EV Charging Stations (EV Capable Spaces provided with EVSE)[2, 3]
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% of actual parking spaces[1]	25% of EV capable spaces[1]

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

Accessibility Standards

EV charging is a service provided by a public entity or private facility owner whereby the service must be accessible to individuals with disabilities. These accessibility standards differ from accessibility requirements for standard parking spaces. EV charging spaces must provide for minimum accessibility, as described in the California Building Code, Chapter 11B. The 2022 California Access Compliance Advisory Reference Manual prepared by the State of California Department of General Services (DGS)[43] provides for additional guidance on accessibility requirements. In general, a percentage of the EV charging spaces provided in new development must be ADA-accessible. Table 11B-228.3.2.1 from the 2022 California Access Compliance Advisory Reference Manual (copied below) lists the number of van-accessible spaces (minimum 216 inches long, 144 inches wide with an adjacent access aisle), standard-accessible spaces (minimum 216 inches long, 108 inches wide with an adjacent access aisle), and ambulatory spaces (minimum 216 inches long, 120-inches wide with no adjacent access aisle) needed based on the total number of EV charging stations, not the total number of EV

[42] These requirements do not apply to public schools and community colleges, which have separate requirements provided in Table 5.106.5.6.1.
[43] This manual is updated every three years following the triennial adoption of the California Building Code update. Refer to DGS's Access Compliance Reference Materials website for the most up to date information.

charging spaces. This is because an EV charging station may be able to accommodate (and charge) multiple EVs at any given time.

TABLE 11B-228.3.2.1

ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE AND COMMON USE

TOTAL NUMBER OF EVCS AT A FACILITY[1]	MINIMUM NUMBER (by type) OF EVCS REQUIRED TO COMPLY WITH SECTION 11B-812[1]		
	Van Accessible	Standard Accessible	Ambulatory
1 to 4	1	0	0
5 to 25	1	1	0
26 to 50	1	1	1
51 to 75	1	2	2
76 to 100	1	3	3
101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100	3, plus 1 for each 50, or fraction thereof, over 100

1. Where an EV charger can simultaneously charge more than one vehicle, the number of EVCS provided shall be considered equivalent to the number of electric vehicles that can be simultaneously charged.

IX. Common Terms & Descriptions

Below are common EV-related terms, acronyms, and definitions. Terms with an asterisk (*) are definitions from the 2022 CALGreen Building Code and are subject to change.

- **Alternating current (AC):** A type of electrical current whose flow of electrons regularly switches back and forth. This type of current is used in Level 1 and 2 chargers, power lines, and residential electricity coming from a wall outlet.
- **Direct current (DC):** A type of electrical current whose flow of electrons travels consistently in one direction. This type of current is used in DCFC stations and is present in appliances using batteries.
- ***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 (EV) charger**: Off-board[44] charging equipment used to charge an electric vehicle.
- ***Electric vehicle charging space (EV Space)**: A space intended for future installation of EV charging equipment and charging of electric vehicles.
- ***Electric vehicle (EV) charging station (EVCS)**: One or more EV charging spaces served by EV supply equipment (EVSE) or receptacle(s).
- ***Electric vehicle (EV) ready space:** 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.

[44] Meaning not located on the car.

- ***Electric vehicle supply equipment (EVSE)**: The conductors, including the ungrounded, grounded and equipment grounding conductors and the electric vehicle connectors, attachment plugs, personnel protection system, and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises' wiring and the electric vehicle.
- **Battery electric vehicle (BEV):** A vehicle that uses only batteries to run on an electric motor and plugs into an electricity source to charge the batteries.
- **Plug-in electric vehicle (PEV):** PEV is an umbrella term including both 100% battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), which run primarily on batteries but have a back-up tank of gasoline. For the purpose of this memorandum, the PEV acronym also includes BEVs that charge wirelessly using inductive charging.
- **Plug-in hybrid electric vehicle (PHEV):** Vehicle that uses batteries to run on an electric motor for limited mileage (e.g., up to 40 miles) but primarily relies on a tank of gasoline to power an internal combustion engine.
- **Zero emission vehicle (ZEV):** A zero emission vehicle is any type of vehicle that has no tailpipe emissions. These cars run on electric motors and are powered by electricity delivered from batteries or hydrogen and fuel cells. In contrast to conventional internal combustion vehicles, ZEVs help reduce air pollution and GHG emissions, and help integrate renewable energy into the transportation sector. There are two kinds of ZEV: plug-in electric vehicles (PEVs) and hydrogen fuel cell electric vehicles.[45]

There are several types of EV charging stations which operate at different charging speeds. The type of EV charging station proposed will depend on the setting, anticipated charging demand, and the existing or required electrical infrastructure.

- ***Level 1 EV charging receptacle**: A 120-volt 20-ampere minimum branch circuit and a receptacle.
    - This equipment provides the slowest charging speed, adding about 4-5 miles of range per hour. Level 1 charging is the equivalent of plugging into an everyday outlet (i.e., 120-volt AC outlet) and is best suited for where a car will be parked for a long period of time, such as at home or at the workplace. Level 1 charging usually has no installation cost and is usually offered for free.
- ***Level 2 EV charger:** A 208/240-volt 30-ampere minimum EV charger connected to the premises electrical system capable of charging EVs.
    - This equipment provides a medium charging speed, adding about 14-35 miles of range per hour. Level 2 charging stations provide faster AC charging than Level 1 through 240-volt (residential) or 208-volt (commercial) outlets. Level 2 charging is the equivalent of plugging into a

[45] It is important to note that "zero emission" in this context is referring to operational emissions, which are the emissions generated during the operation of an asset (e.g., the driving of an EV). However, EVs will have operational emissions if the electricity used for charging is not generated from renewable energy sources. EVs also have embodied (or embedded) emissions related to the manufacturing process (which vary depending on the source and type of materials and energy being used and the distance of transport to distribution centers), and end-of-life emissions related to battery disposal or recycling. Thus, EVs are not truly zero emission—rather, they do not have tailpipe emissions as with gas-powered vehicles.

dryer or other large appliance outlet and is best suited for locations where a car will be parked for a medium to long period of time, such as at residences, workplaces, hotels, and public charging areas (e.g., theaters, shopping centers, public transit hubs, public recreation areas). Level 2 charging does not require major electrical upgrades or new infrastructure, and can take the form of small boxes or just thick cables and 240-volt outlets. Level 2 chargers are quite inexpensive to install and can therefore offer lower cost charging or often free charging.

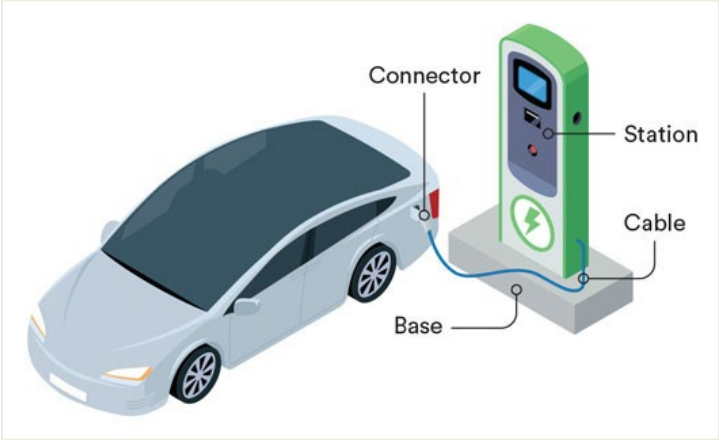
- **Direct Current Fast Charging (aka Level 3 chargers, or "Superchargers" for Tesla-owned charging stations)**: Direct current fast charging (DCFC) is the fastest charging currently available, utilizing DC power over 480 volts. DCFCs currently add about 180-240 miles of range per hour, depending on the charger speed, battery temperature, and state of charge of the battery, as well as whether the station has a shared connection. DCFC charging stations generally require new electrical infrastructure including designated stalls with 4- to 6-foot-tall power chargers and a power distribution cabinet box, often the size of small shed or shipping container. DCFC charging stations are best suited for and commonly located in areas where cars may need to be charged quickly, such as at rest stops, adjacent to or near gas station locations, shopping malls adjacent to highways, and other locations along highways and other heavy-traffic corridors. DCFC charging stations may also be suitable at public settings like parking garages and shopping centers and private settings like business parks or hotels. A recent trend includes lower-speed (e.g. 50-75 KW/hour) DCFC chargers at parking garages in urban areas that allow a full charge while visiting downtown shops or restaurants. DCFC chargers are quite expensive to install and therefore usually charge a price based on the price of electricity plus some margin. Most plug-in hybrid electric vehicles (PHEVs) and some older model, lower-range battery electric vehicles (BEVs) are not equipped with DCFC ports.
- **Raceway:** The enclosed conduit that forms the physical pathway for electrical wiring to protect it from damage.

Attachment 1: Examples of EV Chargers and Charging Stations

Level 1 charger

Level 2 charger

Level 3 charger (DCFC)



Typical EV Charging Station Components