



Pub. Comment to DSAAC 01/15

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September 25, 2015

California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833
ATTN: Jim McGowan, Executive Director

Re: Comments on Proposed Changes to the California Building Code, California Code of Regulations, Title 24, Part 2 Related to the Accessibility Provisions of the 2016 California Building Code

Dear Mr. McGowan:

Plug In America drives change. We are working to accelerate the shift to plug-in vehicles powered by clean, affordable, domestic electricity to reduce our nation's dependence on petroleum and improve the global environment. As the organization representing the millions of potential future consumers of plug-in hybrids and fully electric vehicles, we submit the following comments on the proposed changes to the California Building Code, California Code of Regulations, Title 24, Part 2.

Plug In America has worked extensively in assisting consumers, businesses, municipalities, and state governments on PEV infrastructure and installation. PIA wrote the ADA guidelines for the State of Hawaii (included here as Appendix 1). We have learned several key facts over the past ten years about charging spaces and parking spaces. First, if the requirements for EVCSs in accessible parking only spaces are too high, there is a high probability of property owners deciding not to offer any public PEV charging spaces if they need to add another accessible parking space which also requires an EVCS. Second, it is important that the code define the act of "charging". If you examine the appendix we have provided it can clarify these definitions.

With a clear definition local agencies and property owners can then enforce consistently if needed. California AB475 (Butler-2011) makes it clear that if a person is not connected for charging, they should not be in a charging space. Finally, we recommend that charging stations really should be treated as an "accessible element", not the parking space and that electricity is defined as a fuel in Chapter 11C. Any new regulations on PEV charging should not deviate far and above what is required for existing liquid fuel dispensers and card readers. (Please see Appendix 2 – Bay Area Climate Collaborative Ready Set Charge Guide, pp 25-28)

Overall we support the DSA-AC proposal, in Section 11B-228.3.2, Exception 1, to exclude from these requirements "*EVCS not available to the general public and intended for use by a designated vehicle or driver...*" We also support maintaining the clarifying language within this exception, which reads "*Examples include, but are not limited to, EVCS serving public or private fleet vehicles and EVCS assigned to an employee.*"

We support the DSA's proposed thresholds in Table 11B-228.3.2.1, specifically the proposal to require 1 van-accessible EVCS for every 1 to 4 EVCS and 1 van- and 1 standard-accessible EVCS for every 5 to 25 EVCS.

Retrofits -- As written, the current regulations apply to both new EVCS construction and retrofit operations to install EVCS in existing facilities. We urge BSC to consider exempting retrofit projects from these new regulations or exempting retrofit projects for small parking lots (such as parking lots with 10 or fewer parking spaces). Small parking lots present great challenges if EVCS-enabled parking spots require a second van-accessible ADA. A ten parking space parking lot (at a state park or small local historical destination, for example,) can become a 3 to 5 space parking lot. These regulations will decrease the amount of EVCS retrofit projects due to the valid concern that property owners have about losing parking spots in order to meet the accessible EVCS requirements. If retrofit operations cannot be exempted from the regulations, then we urge BSC to consider the sharing concept.

"Sharing Concept" -- Sharing is when an existing handicapped-only van-accessible parking space is used both as a van-accessible EVCS and as a traditional handicapped-only van-accessible parking space.

Currently, the DSA's proposed regulations neither explicitly allow nor prohibit "sharing." However, the regulations are worded such that it would be basically impossible to "share" an accessible spot. In order to ensure that retrofit projects remain feasible, we request for sharing to be explicitly allowed. Specifically, we request that in retrofit situations, an exemption for shared spots from the "EV CHARGING ONLY" surface marking requirement in 11B-812.9.

Sharing seeks to solve the space problem associated with retrofit projects because the accessible and non-accessible parking spots that would be retrofitted into EVCS already exist in the parking lot. Please see PIA's charging station guidelines diagrams in the attached appendix which show how a single charging station can be shared between a dedicated disabled parking space and a public PEV charging space (differentiated from a public parking space).

One final note, with the current challenges of harmonizing State and Federal regulations, it may be worthwhile to view this set of changes with a short to medium term view, implementing the changes for immediate needs in California and then allow the various jurisdictions to work out their proposals over the next 18 months before considering longer term solutions.

We thank you for the opportunity to submit our comments on this proposed action.

Sincerely,



Jay Friedland
Senior Policy Advisor

cc: Joel Levin, Plug In America Executive Director

Accessible Chargers

The Federal Americans with Disabilities Act (ADA) applies to Electric Vehicles Charging Stations installed in parking lots. However, there are no established criteria for Charging Stations in the current ADA Guidelines. To establish good faith efforts to comply with ADA, the Hawaii State Energy Office strongly recommends that private (commercial) entities arrange for one of the Charging Stations to comply with these guidelines:

- An accessible charging station should be close to, but no farther than 200 feet from the primary building entrance or to an accessible pedestrian entrance of the parking facility.
- An accessible charging station should not displace an existing accessible parking space that is required to be nearest a primary building entrance (as defined by Hawaii Administrative Rules, Title 11, Chapter 19).
- Unless an accessible charging station is intended solely for persons with disabilities, it does not require signs, markings or an “International Symbol of Access” designating the space as reserved for persons with disabilities as defined by the Hawaii Administrative Rules, Title 11, Chapter 19.
- The area in front of the charger should be level (or less than a 2 percent slope), as is presently required for accessible fuel pumps in gas stations. To meet minimum maneuverability and clearance requirements for persons with disabilities, the clear width between the parked EV and the accessible charger controls and/or cord handle, as well as the unobstructed path of travel to the equipment should be no less than 3 feet.



This accessible EV charging station features an unobstructed path of travel to the charger, and accessible controls. Raised curbing and wheel stops protect charging equipment from vehicle damage.

- A minimum 5-foot clear area to turn a wheel chair near the accessible chargers is desired in existing public parking facilities and should be provided in new construction.
- Protective guard posts (bollards) should not encroach upon the minimum clear width of 3 feet. Accessible controls, and/or the cord handle, should be installed between 36 and 48 inches above the level surface (parking surface) in front of the charger, and no greater than 10 inches behind the face of a raised island or curb.
- Accessible electric vehicle charging equipment (the charger) should comply with the Americans with Disabilities Act Accessibility Guidelines, Section 309 Operable Parts (note these guidelines apply to equipment that has been approved for public use by Underwriters Laboratories (UL) or other third party safety certification and labeling laboratories, and approved by the National Electric Code, Section 625).
- An accessible route should be provided from an accessible EV parking stall to the accessible EV charging equipment. An accessible EV charging station should connect to an accessible route to the accessible building entrance. Accessible routes shall comply with ADAAG Chapter 4.
- A parking stall and access aisle serving an EV charging station should be 192 inches wide combined. The parking stall at an accessible EV charging station should comply with ADAAG Section 302. Access aisles must take into consideration use from either side to accommodate differences in location of charging inlets across vehicles. The differences in charging inlets across vehicle and the design of the vehicles may require the driver, both able bodied or with a disability, to back into the parking space.
- In new parking facility construction, the first charging station should be fully accessible and be designed to accommodate wheelchair lift equipment in an adjacent access aisle. In new and existing parking facilities, consultation should be made with the local building and permitting departments on how to provide charger accessibility and other reasonable accommodations.
- Because the “accessible element” is the charger, and given that electric vehicles have charging inlets on the front, rear or either side of the vehicle, it is not recommended to install painted or marked access aisles or paths of travel on either side of the charging station.

Public entities in Hawaii installing charging stations at state or county facilities are required to consult with the State of Hawaii, Disability and Communication Access Board per Hawaii Revised Statutes 103-50. Phone: (808) 586-8121; Email: dcab@doh.hawaii.gov .

Sacramento Electric Vehicle Association
Supporting the Adoption and Use of Electric Vehicles

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3.5.2 AMERICANS WITH DISABILITIES ACT (ADA) AND REASONABLE ACCOMMODATIONS

The ADA became federal law in 1990 with the intent to prohibit discrimination of individuals on the basis of disabilities. Title I of the ADA prohibits private employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions, and privileges of employment. The ADA covers employers with 15 or more employees, including state and local governments.

An employer is required to make a reasonable accommodation to the known disability of a qualified applicant or employee if it would not impose an “undue hardship” on the operation of the employer’s business. Reasonable accommodations are adjustments or modifications provided by an employer to enable people with disabilities to enjoy equal employment opportunities. The Equal Employment Opportunity Commission (EEOC) is the enforcing agency for Title I.

Title II of the ADA addresses State and local government services,

and Title III addresses places of public accommodation and commercial facilities. Under titles II and III of the ADA, the Access Board develops and maintains accessibility guidelines for buildings, facilities, and transit vehicles and provides technical assistance and training on these guidelines. The Department of Justice (DOJ) is the enforcing agency for Title II, and the Department of Transportation, along with the DOJ are the enforcing agencies for Title III.

3.5.2.1 ACCESSIBLE ELECTRIC VEHICLE CHARGING STATIONS

Since public charging stations offer a service to the general public, the ADA prohibits discrimination of individuals on the basis of disabilities. Accessibility standards specific to public chargers do not currently exist in California except in some fashion through Chapter 11C of the California Building Code—*Standards for Card Readers at Gasoline Fuel-Dispensing Facilities*.⁴⁰ The interpretation of the 11C Standard is that it applies to card readers not only on liquid fuel pumps, but also on charging stations, because it lists electricity as a motor fuel.

There also exists a State of California Internal Policy 97-03⁴¹—Interim Disabled Access Guidelines for Electrical Vehicle Charging

	New Construction ¹	Existing Parking Facility
1st EVCS	The first EVCS shall be accessible, and be installed in an existing van-accessible parking space or in a new 17-foot wide EVCS meeting all requirements of a van-accessible parking space. If in a new space it does not have to be designated with D9-6/R7-8b signs (disabled parking symbol/VAN-accessible) or contain a striped access aisle.	The first EVCS should be accessible, and may be installed in the existing van-accessible space, in an existing accessible parking space, in a standard parking space (9-foot wide minimum) adjacent to an “access aisle”, or in a standard parking space with a 3-foot wide (minimum) unstriped path of travel between the battery charging station and the vehicle inlet.
2nd EVCS	The second EVCS should be accessible and be installed in an existing accessible parking space or in a new 14-foot wide charger meeting all requirements of an accessible parking space. If in a new space it does not have to be designated with a D9-6 (disabled parking sign) or contain a striped access aisle ² . The first two accessible chargers may share the same access aisle.	The second EVCS should be accessible, and may be installed in a standard parking space (9-foot wide minimum) with a 3-foot wide (minimum) un-striped path of travel ² . The first two accessible EVCS may share the same path of travel.
3rd EVCS	The third EVCS and beyond may be installed in a standard parking space no less than 9-foot wide.	The third EVCS and beyond may be installed in a standard parking space no less than 9-foot wide.

Table D - Installation Options for Accessible EVCS

¹ Includes existing facilities increased in size by 50% or greater or by 30 parking spaces or greater (percentage size increase or number of parking spaces to be determined by local agency)

² If the first battery charging station can simultaneously charge two PEVs, the card-reading device would qualify as accessible for each vehicle

Stations that was developed in 1997 (last revised 2-10-2005) by the State Department of General Services. The Policy was developed to provide guidance for the installation of charging equipment on state-owned parking lots, including public schools. It states that local agencies are granted latitude to adopt similar methods of administering code requirements. While the Policy references the California Building Standards Code, it does not reference the California Electrical Code, Fire Code, Vehicle Code, or Manual on Uniform Traffic Control Devices; all of which must be considered when providing safe, accessible and enforceable public charging infrastructure.

The inconsistencies and incompleteness of both the standard for card-reading devices on fuel dispensers and the State's internal policy on accessible chargers has resulted in local agencies developing broad interpretations of the documents. The result has been widespread confusion and inconsistent applications of policy across the State, as well as across the nation. Until such time that a federal or State standard is developed that takes into consideration all necessary codes and modern equipment with varying charging levels, the guidelines below are being made available as a resource for local jurisdictions to consider using when designing, reviewing, installing and operating electric vehicle supply equipment. They should not be interpreted to dictate the manner in which a public agency chooses to administer the installation of public and restricted charging infrastructure.

An important objective of these guidelines is to ensure that accessibility provisions are met whenever possible and feasible. The guidelines take into consideration that planning EVI in new construction allows architects and engineers to match up the source and level of power supply, building use(s), and parking lot design with desired EVCS locations and charging levels. The guidelines also take into consideration the installation challenges in existing parking facilities such as uneven topography, use of existing electrical service, location of power supply, or space limitations. Because there are no definitive standards for the design and installation of EVCS, careful planning and consultation with local building officials is highly recommended before proceeding in both new and existing developments. In all cases the agency having jurisdictional authority will make the ultimate determination on permitted installations.

These guidelines identify the "battery charging station" as the accessible element, or as the point of service (see Appendix 8.1). It is recognized that in conforming existing public parking facilities at least one van-accessible space already exists. By locating the first battery charging station within a van-accessible parking space, the requirement that the first battery charging station be accessible would likely be met. In doing so however, it would likely result in the van-accessible space closest to the building entrance having a very low turnover rate and less overall availability to disabled users that depend upon lift equipment, because of the long periods of time needed to charge electric vehicles. It may also result in unexpect-

ed "cable management" and tripping concerns as van-accessible parking is often on the shortest pedestrian route to the main building entrance.

Provisions for accessible card-reading equipment in the Chapter 11C standard apply to battery charging station installations as they do to liquid fuel pumps, because the standard defines electricity as a motor fuel. Chapter 11C requires that the card-reading controls of the first two dispensers of any type of motor fuel need to be accessible in new or existing facilities.

For the next several years it is expected the vast majority of public EVCS will be installed in existing private surface lots. Therefore, EVCS will likely take the place of existing standard parking spaces (assumed 9'-0" wide). The first EVCS should have accessible equipment, thus a path of travel (see Appendix 8.1) is required on either side of the space leading to the battery charging station. It is here where some agencies may require a path of travel as wide as an 8'-0" access aisle so as to accommodate an electric van with lift equipment. However, lack of definitive standards for the installation of accessible battery charging equipment is resulting in some agencies authorizing the minimum 3'-0" path of travel between the equipment and vehicle inlet.



Figure 5 - Example of an accessible liquid fuel dispenser

Until such time as Accessible EVCS installation standards are developed and adopted by the State, two courses of action may be considered by local agencies; one for new construction and one for existing parking facilities (see Table D). As local agencies eventually adopt ordinances, codes, private & public development standards and regulations, every effort should be made to update these guidelines to reflect current laws and regulations.

3.5.2.2 EQUIPMENT REACH AND APPROACHABILITY

Key challenges facing property owners, engineers, architects, contractors and others are how to place charging equipment near a convenient and sufficient power source, protect the equipment from possible vehicle damage, and still ensure that the equipment is accessible for persons with disabilities. These guidelines identify the battery charging station as the accessible element. Below is a summary of the primary design requirements in Chapter 11C⁴² for accessible fuel-dispensing equipment as revised to coordinate with Title 24 and ADA Standards and other recommendations in the document:

- At each parking site, card readers serving the first two EVCS must be accessible (a battery charging station that can simultaneously charge two or more PEVs from one card reader would qualify to meet this requirement)
- A level accessible area (see definitions) measuring no less than 30-inches by 48-inches (with the long dimension being parallel to and centered in front of the equipment, plus or minus 9-inches on either side) must exist.
- If on a raised surface, the face of the card-reading controls must be within 10 inches in plan view from the face of curb and be no higher than 54-inches from the level accessible area in front of the controls. The 2010 ADA Standard lowers height reach ranges to 48 inches maximum, except that the operable parts of fuel dispensers shall be permitted to be 54 inches maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.
- Where protective posts or other guard devices are provided they shall not obstruct accessible EVCS paths of travel or other accessible routes and shall not be located within 3-feet of the battery charging station controls and connector handle(s).
- In new construction a path of travel (see Appendix 8.1) no less than 3-feet in width must exist between the level accessible area in front of the charging station and an exterior accessible route of travel to the main building entrance.
- The electric cable and connector may cross over the level accessible area when inserted in the vehicle charging inlet.

Figure 5, a gasoline dispenser with two hoses, protected by guard posts provides an illustration of the front of the controls where the gas handle and card-reader are situated, with a recessed curb centered beneath the card-reading device.

Figures 6, 7, and 8 and accompanying comments that follow provide guidance for accessible electric vehicle charging stations in various parking lot configurations. The examples are based upon conventional parking lot designs, review of ADA design standards,

Chapter 11C of the CBC and the State's internal Policy 97-03. If a local jurisdiction in California finds that compliance with accessibility and building standards would make the specific work of the project affected by the building standard unfeasible due to one or more factors cited under "unreasonable hardships" section of the State Building Code, the details of the hardship should be recorded and entered in the files of the enforcing agency.

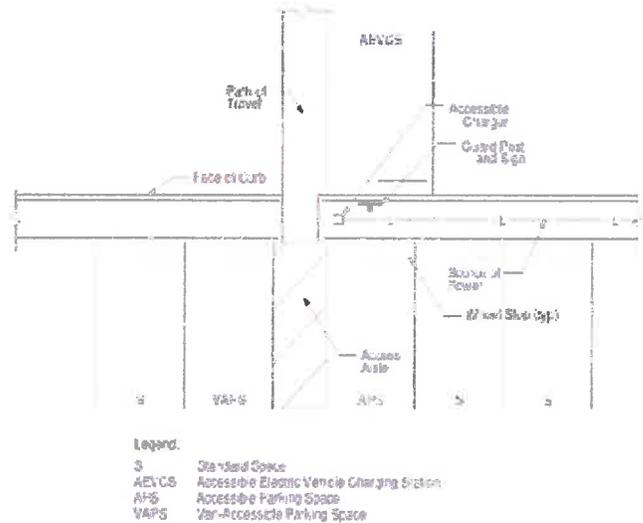


Figure 6 - Example of first EVCS in Existing Parking Facility

Dual Port Charging Station on Extended Island Configuration: This example illustrates how placement of dual port charging station in an existing parking facility can accommodate an accessible EVCS on one side of an island, as well an accessible parking space on the opposite side. Any vehicle displaying a Disabled Person (DP) placard or DP license plates may occupy the Dual Port Charging Station on Extended Island Configuration: This example illustrates how placement of dual port charging station in an existing parking facility can accommodate an accessible EVCS on one side of an island, as well an accessible parking space on the opposite side. Any vehicle displaying a Disabled Person (DP) placard or DP license plates may occupy the accessible parking space including a PEV that could utilize the accessible battery charging station. Signs identifying the accessible parking space as an "Electric Vehicle Charging Station" would be added to the existing ADA signage. The accessible EVCS must meet the reach, height, clearance and slope requirements of accessible fuel-dispensing equipment (Chapter 11C, CBC) and ADA standards. This figure is patterned after Sonoma County EVCS Program and Installation Guidelines.⁴³

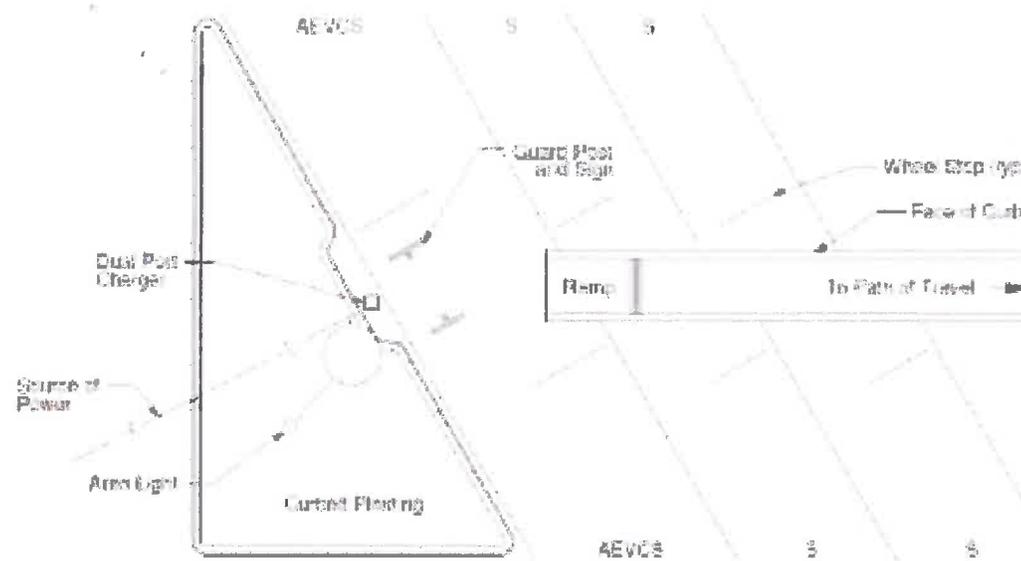


Figure 7 - Example of First Two EVCS in Existing Parking Facility

Dual Port Charging Station on Planted Island Configuration: This example in an existing parking facility takes advantage of a planted island at the end of a parking bay, where a dual port charging station is installed in a recessed section behind the curb line. The two accessible EVCS are a minimum of 12 feet wide (9' for parking and 3' for maneuverability), and have an unobstructed route from any side of the vehicle to the charger and to the ramp leading to the path of travel. Because the charging station is installed at the same elevation as the parking lot surface, guard posts containing signage are installed to protect the equipment and keep the ramp clear. This figure is patterned after Sonoma County EVCS Program and Installation Guidelines.⁴⁵

Charging Stations on Paved Area Configuration: Figure 8 illustrates an accessible EVCS adjacent to a wide level paved area between the EVCS and sidewalk, where the sidewalk serves as the path of travel. Two EVCS are also shown. This figure is patterned after Sonoma County EVCS Program and Installation Guidelines.⁴⁴

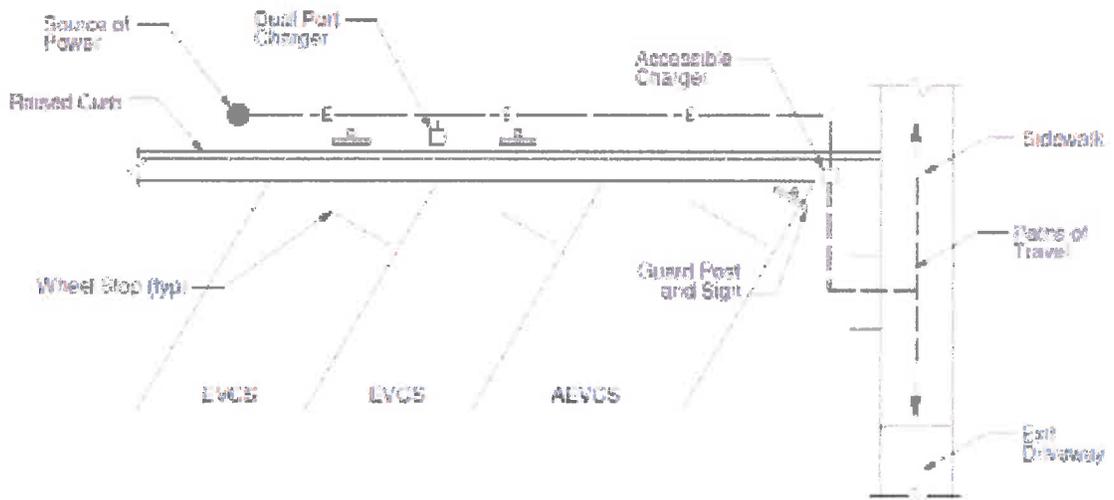


Figure 8 - Example of Accessible EVCS and Two EVCS

- Legend
- EVCS Electric Vehicle Charging Station
 - AEVCS Accessible Electric Vehicle Charging Station