

**INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
REGARDING THE AMENDMENT OF THE
2013 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN)
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11
(HCD 05/13)**

The Administrative Procedure Act (APA) requires an Initial Statement of Reasons to be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE AND BENEFITS:

(Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment or repeal, the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment or repeal is reasonably necessary to carry out the purpose, including the problem the agency intends to address, for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.)

1) The Public Problem, Administrative Requirement, or Other Circumstance Addressed

Administrative Requirement: Health and Safety Code Section 17921 directs the Department of Housing and Community Development (HCD) to propose adoption, amendment or repeal of building standards for the protection of public health, safety and general welfare.

2) Specific Purpose

The specific purpose of these regulations is to amend the 2013 California Green Building Standards Code (CALGreen), Title 24, Part 11 of the California Code of Regulations (CCR) for the following programs:

- a) State Housing Law: relative to residential occupancies, buildings or structures accessory thereto and as provided in Health and Safety Code Section 17921.2.
- b) Employee Housing Act: relative to any building or structure or outdoors on premises or property in accordance with Health and Safety Code Section 17040.
- c) Factory-Built Housing Law: relative to residential buildings, dwellings or portions thereof, or building components, or manufactured assemblies in accordance with Health and Safety Code Section 19990.

3) Rationale for Necessity

The 2013 California Green Building Standards Code (CALGreen) became effective on January 1, 2014. HCD has developed amendments to the 2013 CALGreen Code to incorporate updates and corrections to regulations, which will benefit the health, safety and general welfare of California residents by continuing to reduce greenhouse gas emissions, promote a reduction in detrimental environmental impacts, and continue the Administration's directive to adopt green building standards for residential, commercial, and public building construction as part of the building code adoption process with an emphasis on zero-emission vehicles and supporting infrastructure.

The proposed changes to the 2013 CALGreen Code are necessary to provide clarity and consistency for enforcement and application with regard to statewide needs and to address conditions unique to California.

Specific Proposed Regulatory Actions:

HCD proposes to amend the 2013 CALGreen Code. The rationale for each amendment is listed below.

1. CHAPTER 1 ADMINISTRATION

SECTION: 104.1 Scope.

Rationale: HCD proposes to amend the above referenced section by adding a title to the section and deleting an outdated reference to the Matrix Adoption Table. This proposal is consistent with the format of prior proposals related to section titles and deletion of references to the Matrix Adoption Tables in the Building Standards Codes. There is no intended change in regulatory effect.

2. CHAPTER 2 DEFINITIONS

SECTION: 202 Definitions.

Rationale: HCD proposes to amend the definition of “ELECTRIC VEHICLE (EV)” by adding electric motorcycles to the list of automotive-type vehicles for on-road use. This proposal would provide consistency in definitions between the 2013 CALGreen Code and the 2013 California Electrical Code.

HCD proposes to adopt the definition “ELECTRIC VEHICLE CHARGING STATION(S) (EVCS)”. The term is used in Sections 4.106.4.2 and A4.106.8.2 to define a common-use area that is intended to facilitate future common-use electric vehicle charging.

HCD also proposes to adopt a definition for “SMALL SOLAR PHOTOVOLTAIC (PV) SYSTEM”, which is referenced in the proposed new Section A4.107.2. The definition informs the code user as to the maximum electrical output capacity in kW of the PV system referenced in the proposed new section.

3. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

SECTION: 4.106.4 Electric vehicle (EV) charging for new construction.

Rationale: HCD proposes to adopt the above referenced section bringing forward provisions from Section A4.106.8 (voluntary measures) as a mandatory requirement with additional revisions.

HCD’s proposed regulations facilitate implementation of the Governor’s Executive Order B-16-2012 and benchmark of putting over 1.5 million zero-emission vehicles on California roadways by 2025. In addition, the Governor’s Interagency Working Group on Zero-Emission Vehicles, “2013 ZEV Action Plan,” designates HCD as the lead agency for considering amendments to the California Building Standards Code to ensure new residential buildings are ZEV-ready and requiring multi-unit buildings to dedicate a portion of their parking lots for EV charging.

HCD’s proposal facilitates EV charging capability (infrastructure) incentivizing the purchase and use of EVs for transportation purposes. Requiring infrastructure reduces impediments such as a lack of ability to quickly charge EVs at home. The HCD proposal will result in significant cost savings for homeowners and mitigate retroactive installation of supply equipment in existing dwellings. This can be seen positively by a consumer and increase confidence in the decision to purchase an EV. To meet the Administration’s goals, multifamily developments will need to accommodate tenants who require EV charging services. This proposal will result in similar benefit and savings in multifamily dwellings.

Additionally, the California Air Resources Board’s “Cleaner Transportation – Proposed First Update to the Climate Change Scoping Plan: Building on the Framework” states that California’s transportation system accounts for approximately 38 percent of California’s greenhouse gas (GHG) emissions and is the primary source of smog-forming and toxic air pollution in the State. The Plan further states that part of reducing California’s GHG emission goals will require improving vehicle efficiency and developing zero emission

technologies, planning and building communities to reduce vehicular GHG emissions, and provide more transportation options. HCD's proposed regulations help to further these goals.

Research on California's readiness for EV charging was conducted with funding from the California Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program. This funding enabled HCD to establish a steering committee to develop scope of work, hire a subcontractor (ConSol) to conduct research, compile and evaluate data, and formulate conclusions on EV charging technology, code requirements, costs for various levels of installations, and identify conditions which may not support EV charging. This information is included in a report called the "Electric Vehicle Readiness Study" (as prepared for HCD). The report is available on HCD's website at:

http://www.hcd.ca.gov/codes/calgreen/EV_Readiness_Report_Complete.pdf.

Cost information used for this ISOR will be derived from the study unless otherwise indicated.

HCD proposes to adopt Section 4.106.4, mandatory EV charging requirements in new construction. Section 4.106.4 references the California Electrical Code, Article 625, which addresses requirements for installation of electrical equipment associated with EV charging.

HCD proposes three exceptions. The exceptions were identified by stakeholders and the Electric Vehicle Readiness Study prepared for HCD by ConSol. Exceptions will need continued evaluation based upon advances in technology and as public charging opportunities increase.

Exception 1 is proposed in response to a comment from Pacific Gas and Electric Company to narrow the focus of exemptions ("opt-out" clauses). As an example, "homes without electric utility service," appears to be a logical exemption from installation of infrastructure for EV charging.

Exception 2 is proposed to address areas or conditions in which the use of plug-in electric vehicles is not feasible. This may be related to the isolated or rural nature of the dwelling or community and travel distances to adjoining communities or workplaces and lack of public charging services to support EV use along these transportation routes. Use of this exception may be reduced as EV technology advances and additional public EV charging services become available.

Exception 3 provides a \$400.00 cost threshold for additional costs related to EV charging infrastructure on the utility side of the meter. As identified in the Electric Vehicle Readiness Study, there are some cases of new construction in which EV charging may not be practical or cost effective. For example, new subdivisions or secondary customers located at the end of the electrical service main may require extension of the electrical service and upgrade of the utility infrastructure. New subdivisions located at the end of substations electrical lines served by a dedicated substation may not have sufficient capacity to accommodate a large increase in load due to Level 2 chargers and increasing the capacity of or building a new substation would be very costly. To illustrate, the cost of one pad-mounted transformer is approximately \$6,500 and it serves about 12 homes. If two additional transformers are needed (to serve 24 homes), the additional cost would be over \$500 per home, which is not acceptable to the building industry and appears contrary to HCD's mission to safeguard affordability. HCD proposes a temporary \$400.00 cap as an interim stop-gap measure negotiated with stakeholders. Real-life testing and application of the necessity for this exception will be monitored during the 18-month effective period of the updated 2013 CALGreen Code. Based on the degree of application, this exception may not be carried forward in its current form into the 2016 CALGreen Code.

4. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

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

Rationale: HCD proposes to adopt the above referenced section bringing forward provisions from Section A4.106.8.1 (voluntary elective) as a mandatory requirement with additional revisions. Proposed Section 4.106.4.1 is a mandatory requirement in residential new construction, which also includes townhouses with attached private garages; specifies the voltage of the future branch circuit as 208/240-volt; and specifies that the service panel or subpanel shall have sufficient space and capacity to accommodate a 40-ampere minimum dedicated branch circuit, including an overcurrent protective device (circuit breaker).

The proposed EV charging requirement for one- and two-family dwellings and townhouses with attached private garages is only for a raceway (no wiring) with a specified minimum size. The minimum size ensures that conductors (wiring) of up to 80 amperes may be accommodated if desired by the EV user or for EV vehicles capable of faster recharge rates. This raceway-only requirement is being proposed to accommodate situations in which a resident selects EV use several years after the structure is built. Although comments have been received that the size of EV batteries may not change considerably during the effective period of the 2013 CALGreen, the buildings are intended to last much longer. The raceway option literally provides a conduit for supporting appropriately sized conductors when EV charging becomes a need for the resident. In addition, the conduit also facilitates easy replacement of any conductors that have been installed if the conductors are damaged or need to be upgraded. A raceway-only installation eliminates concerns for live unused wires or wasted copper wiring. The service panel or subpanel requirements ensure that the panel or subpanel will have sufficient space for the overcurrent protective devices and ampacity to support future EV charging of at least 40-ampere minimum.

Cost analysis: The raceway-only option has minimal cost with minor variations depending on distances from the panel to the proposed location of EV charging. HCD's proposal only requires installation of the raceway (conduit); and sufficient panel electrical capacity (amperage) and physical capacity to accommodate a 40-ampere minimum branch circuit and overcurrent protective device (circuit breaker). An electrical panel is already required pursuant to the 2013 California Electrical Code for purposes of controlling circuits for a building. The panel will be selected according to the service load to the dwelling and the number of spaces required for the number of branch circuits and associated overcurrent protective devices. The EV charging infrastructure requirements would not, in most cases, require upsizing of a panel from a typical 200-ampere panel. Since the 2013 California Electrical Code no longer limits the number of spaces in panels (42 spaces maximum in prior codes), a panel with the appropriate amperage and number of spaces would be selected to accommodate the planned circuits, overcurrent protective devices, extra space for solar zone if required by the California Energy Code, and the circuit and overcurrent protective devices designated for future EV charging. The EV raceway would be part of the electrical plan, bid and permit for the residence. Based on all of the above, HCD estimates some components costs for a single-family home to be approximately \$50.00 as illustrated in the table below. It should be noted that costs may be lower depending on quantity discounts for materials.

Item	Cost	Quantity	Total
1" conduit 10' long	6.77	2	13.54
1" set screw, pack of 10; \$4.23 per box	.43	1	.43
2-1/8" deep, 4-11/16" square box, pack of 25, \$91.25 per box, \$3.65 each	3.65	1	3.65
1" threadless compression conduit connector	6.60	2	13.20
4" box cover plate/50 amp plate	1.20	1	1.20
Labor to mount j-box and run conduit ¼ hour @ 73.00 per hour	18.25	1	18.25
			53.15
Source: ConSol, 2013, "Electric Vehicle Readiness Study," as prepared for Dept. of Housing & Community Department.			

HCD recognizes that full implementation for EV charging, which will include plug-in ready components, will necessitate additional costs, including permit fees, labor costs for installation of conductors, receptacles and overcurrent protective devices. However, the proposed installation of conduit and panel sizing has the potential to result in significant cost savings compared to retroactive installation of this infrastructure for EV charging as detailed by ConSol's report. Some builders have offered EV charging capability as a separate \$250.00 option for new homes. The typical cost to facilitate EV charging (Level 2 @ 40 amperes) after construction of the home has been estimated at approximately \$3,500.00; however, the cost could be higher depending on the need to increase the utility service to the dwelling, panel upgrades, distances from the panel to the vehicular area, need for removing materials and pulling wiring through enclosed spaces, possible trenching, possible costs related to inadequate utility infrastructure, etc.

**5. CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

SECTION: 4.106.4.1.1 Identification.

Rationale: HCD proposes to adopt the above referenced section. This section requires identification of the proposed or reserved overcurrent protective device (circuit breaker) space(s) assigned to the EV charging circuit at the service panel or subpanel as “EV CAPABLE.” Identification is also required at the termination point. The title of this section has been changed from “Labeling requirement,” in the existing voluntary measure to differentiate it from the formal “labeling” by organizations or manufacturers. There is minimal cost impact for implementation (e.g., permanent ink marker or durable pencil) due to existing requirements in the California Electrical Code, Sections 110.22 and 408.4, which, in part, requires identification at the circuit directory in panels or subpanels to be durably marked without requiring a specific method or material. A similar method of identification could also be used at the raceway termination point.

**6. CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

SECTION: 4.106.4.2 New multifamily dwellings.

Rationale: HCD proposes to adopt the above referenced section bringing forward provisions from Section A4.106.8.2 (voluntary) as a mandatory requirement with additional revisions. In addition to the background information discussed for Section 4.106.4, Assembly Bill 1092 (Chapter 410/Statutes of 2013) directed HCD to propose mandatory building standards for installation of future EV charging infrastructure for parking spaces in multifamily dwellings. The statute directed HCD to use existing measures in CALGreen (Section A4.106.8 as corrected) as a “starting point” for the proposed standards. The proposed building standards would be available for adoption in the next triennial edition (2016 version effective January 1, 2017) of the building standards code; therefore, HCD’s current proposal is in advance of the statutory directive.

Section 4.106.4.2 clarifies application to only projects with 17 or more multifamily dwelling units. This section requires the number of electric vehicle charging stations (EVCS) to be based on 3 percent of the total number of all parking spaces in all types of parking facilities. A design minimum of one EVCS is required.

This section clarifies that EVCS are to be provided in addition to the number of parking spaces required by local parking regulations. Parking space provisions may also be addressed in local zoning ordinances, development agreements or other similar local policies.

It is important to note that HCD’s proposal does not mandate construction of the EVCS or installation of an EV charger. The primary intent is to provide infrastructure to facilitate EV charging, as a service, to multifamily dwellings. Multifamily dwellings accommodate 34 percent of Californians and are faced with unique criteria related to EV charging including parking access, electrical service access, installation and operation costs and agreements between property owners/managers and tenants. (Source: November 2013, California Plug-In Electric Vehicle Collaborative, “Plug-in Electric Vehicle Charging Infrastructure Guidelines for Multi-unit Dwellings.”)

**7. CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

SECTION: 4.106.4.2.1 Electric vehicle charging station (EVCS) dimensions and slope.

Rationale: HCD proposes to adopt the above referenced section, which clarifies minimum dimensions for EVCS.

The HCD proposal requires EVCS to have a length of 18 feet to provide adequate distance for working space in front of the vehicle and the charging equipment. A minimum width of 9 feet is required (wider than standard smaller parking space size) to provide EV users sufficient room to detach the EV connector from the charger, attach/detach it to and from the vehicle, and reattach it to the charger unit. Depending on the EV being charged, the charge ports may be located on either side, towards the front or rear, or directly on the front of the vehicle. This uncertainty is compounded by the unknown width of the EV being charged, which may be as wide as 6 feet

10 inches. Therefore, HCD believes the 9-foot width is the minimum to facilitate usability, especially since the trend is for mid-sized or larger EVs.

HCD proposes that one in every 25 EVCS, but not less than one space, be a wider location than the “standard” EVCS capable of being used by all users. For this EVCS, an adjacent 5-foot aisle is required, making the total EVCS width, including the aisle, 14 feet. Additionally, HCD’s proposal requires this universal EVCS, including the aisle, have a slope of not greater than 2.083 percent which is capable of being used by all users. This EVCS would provide persons with or without disabilities the same opportunity to use the EV charger. The proposed ratios for the larger EVSC vs. “standard” EVCS were recommendations from ECOTality North America’s 2011 document “EV Project: Accessibility at Public EV Charging Locations”, which considered design requirements from the 2010 Americans with Disabilities Act.

**8. CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

SECTION: 4.106.4.2.2 Electric vehicle charging station (EVCS) locations.

Rationale: HCD proposes to adopt the above referenced section, which identifies additional considerations and requirements when EV chargers (off-board) are installed in EVCS complying with Section 4.106.4.2.1, including aisle and slope requirements. At least one EVCS is required to be located and available for use by all residents in common use areas. An EVCS requiring aisle and slope requirements shall be located on an accessible route; preferably adjacent to an accessible parking space, which would facilitate use of the charger from the accessible parking space or universal EVCS.

HCD’s proposal provides access to both persons with or without disabilities pursuant to requirements of Fair Housing laws (Federal Fair Housing Act, State Fair Employment and Housing Act, and the Unruh Civil Rights Act design requirements) because the housing development would be on private property and not open to the general public. If an EVCS is located in compliance with Item 1, the EV charger, when installed, would be usable from the accessible parking space, however, the adjacent EVCS would also have the dimensions, including access aisle, and slope to accommodate persons with disabilities. Therefore, two locations would be available for use of the EV charger. If an EVCS is located in compliance with Item 2, the EVCS would be located on an accessible route meeting CBC Chapter 11A requirements. HCD believes that the proposal provides access, as the EVCS would be available to the first person present to use the EVCS. The EVCS discussed in this section would be available for all EV users, therefore, would not require any special signage as required by CBC, Chapter 11A.

This section does not require the actual construction of EVCS in the common use location. This section only requires that construction documents demonstrate that the EVCS can be accommodated on the site when it becomes fully functional with an EV charger installed. This section also does not mandate that the EV charger be installed, but only provides requirements if and when the EV charger is installed. There are no fiscal impacts associated with implementation of this section.

**9. CHAPTER 4
RESIDENTIAL MANDATORY MEASURES**

SECTION: 4.106.4.2.3 Single EVCS required.

Rationale: HCD proposes to adopt the above referenced section, which requires only a raceway, as specified, for future EV charging purposes when only a single charging location is required. This section clarifies that approved construction plans would indicate the location of the termination of the raceway. The service panel or subpanel requirements ensure that the panel or subpanel will have sufficient space for the overcurrent protective device(s) and amperage to support future EV charging at a 40-ampere minimum level.

Cost analysis: The raceway-only option has minimal cost with minor variations depending on distances from the panel to the proposed location of the EV charging service. HCD's proposal only requires installation of the raceway (conduit); and sufficient panel electrical capacity (amperage) and physical capacity to accommodate a 40-ampere minimum branch circuit and overcurrent protective device (circuit breaker). An electrical panel is already required pursuant to the 2013 California Electrical Code for purposes of controlling circuits for a building. The panel will be selected according to the service load to the area of the proposed EV charging service and the number of spaces required for the number of branch circuits and associated overcurrent protective devices. The 2013 California Electrical Code no longer limits the number of spaces in panels (42 spaces maximum in prior codes), a panel with the appropriate amperage and number of spaces would be selected to accommodate the planned circuits, overcurrent protective devices, extra space for solar zone if required by the California Energy Code, and the circuit and overcurrent protective devices designated for future EV charging. The EV raceway would be part of the electrical plan, bid and permit for the multifamily building.

Based on all of the above, HCD estimates some components costs for a single installation (not per dwelling unit) as \$110.00 with components similar to those discussed for Section 4.106.4.1 (1- and 2-family dwellings), with a possibility of longer raceway runs and possibly requiring a dedicated panel depending on the number of installations.

In rare cases, EV charging loads may necessitate additional transformers with sub-surface transformers having twice the impact of pad-mounted transformers. However, according to ConSol's EV Readiness Study, the addition of Level 2 EV chargers (mid-Level 2 is 40 amperes) will have minimal cost impact to the utility infrastructure. The main cost would result from updating electrical service from 200 amperes to 400 amperes; however, this should not be necessary for only one EVCS. Depending on the number of these installations, a dedicated panel may be required. Costs may be lower than identified depending on quantity discounts for materials.

HCD recognizes that full implementation for EV charging services, which will include plug-in ready components, will necessitate additional costs, including permit fees, labor costs for installation of conductors, receptacles and overcurrent protective devices. However, the proposed installation of conduit and panel sizing has the potential to result in significant cost savings compared to retroactive installation of this infrastructure for EV charging as detailed by ConSol's report. This proposal also reduces some impediments for EV charging such as might be faced by residents in multifamily dwellings, especially if EV charging services are requested by a small number of residents in existing buildings.

Some builders have offered EV charging capability as a separate \$250.00 option for new homes. The typical cost to facilitate EV charging (Level 2; 40 amperes) after construction of the home has been estimated at approximately \$3,500.00; however, the cost could be higher depending on the need to increase levels of service to the dwelling, panel upgrades, distances from the panel to the vehicular area, need for removing materials and pulling wiring through enclosed spaces, possible trenching, possible costs related to inadequate utility infrastructure, etc.

10. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

SECTION: 4.106.4.2.4 Multiple EVCS required.

Rationale: HCD proposes to adopt the above referenced section, which requires specified criteria to be included in construction documents to ensure infrastructure will be capable of supporting future EV chargers and simultaneous EV charging at full amperage of the EVSE at all EVCS. This section requires plan design to be based on a 40-ampere minimum branch circuit and that construction documents indicate the location of the termination of the raceway. This section requires that only raceways and related components (underground, overhead, through firewalls) are required to be installed at the time of construction to avoid future retrofit costs, e.g., trenching or tunneling in surfaced areas or demolition.

EV and EV charging technology is rapidly evolving so much so that charger technology, capability and demand may change by the time that an actual EV charger is installed on a building site. It is acknowledged that due to these rapidly changing technologies, codes cannot address every possible design configuration or type of equipment, e.g., multi-port EV chargers. The code authorizes enforcing agencies some discretion for these situations with the ability to evaluate each situation on a case-by-case application.

Cost analysis: Unlike the previous section, this section requires installation of raceways when they are planned to be installed underground, inaccessible, or within concealed areas and spaces for final installation of EV chargers. This helps avoid additional costs associated with installing these components after construction of a paved parking lot, landscaping or structural/architectural elements.

This section primarily focuses on ensuring that the multifamily building has sufficient electrical capacity to facilitate EV charging for all required EVCS. The configuration of these buildings varies considerably from low rises (up to three stories) or high rises (above 3 stories) with parking underground, parking on an adjacent lot, parking in a separate single story or multistory structure, on-street parking, etc.

HCD recognizes that full implementation for EV charging services, which will include plug-in ready components, will necessitate additional costs, including permit fees, labor costs for installation of conductors, receptacles and overcurrent protective devices. The typical cost to facilitate EV charging (Level 2; 40 amperes) after construction has been estimated at approximately \$3,500.00; however, the cost could be higher depending on the need to increase levels of service to the dwelling, panel upgrades, distances from the panel to the vehicular area, need for removing materials and pulling wiring through enclosed spaces, possible trenching, possible costs related to inadequate utility infrastructure, etc.

11. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

SECTION: 4.106.4.2.5 Identification.; and "Notes"

Rationale: HCD proposes to adopt the above referenced section. The section requires identification of the proposed or reserved overcurrent protective device (circuit breaker) space(s) assigned to the EV charging circuit at the service panel or subpanel as "EV CAPABLE." The title of this section has been changed from "Labeling requirement," in the existing voluntary measure, to differentiate it from the formal "labeling" by organizations or manufacturers. There is minimal cost impact for implementation (e.g., permanent ink marker or durable pencil) due to existing requirements in the California Electrical Code, Sections 110.22 and 408.4, which, in part, requires identification at the circuit directory in panels or subpanels to be durably marked without specificity for method or material.

HCD also proposes to adopt the above referenced "Notes" at the end of Section 4.106.4, directly following Section 4.106.4.2.5, providing resources related to EV charging signage, guidelines, accessibility recommendations, etc. These Notes are a listing of resources only. There is no cost for implementation.

12. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

TABLE 4.504.3 VOC Content Limits for Architectural Coatings

Rationale: HCD proposes to amend the above referenced Table 4.504.3 by deleting the column with an outdated effective date of January 1, 2012, deleting references to effective dates, and changing the VOC content limits for "rust preventative coatings" and "specialty primers, sealers, and undercoaters" to reflect current requirements. There is no fiscal impact since proposed changes are editorial and standards are currently in effect.

13. CHAPTER 4 RESIDENTIAL MANDATORY MEASURES

SECTION: 4.504.4 Resilient flooring systems.

Rationale: HCD proposes to amend the above referenced section to clarify the criteria used by the Collaborative for High Performance Schools (CHPS) as the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350). There is no intended change in regulatory effect or fiscal impact.

The changes also reflect a name change from GREENGUARD Children & Schools program to UL GREENGUARD Gold. This is a name change only that occurred in early 2013; however, the standards on which certification is based remain the same. (The GREENGUARD Gold Certified products also must comply with the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350). According to UL, manufacturers have three years to comply with the change. There is no intended change in regulatory effect. There is no fiscal impact due to the proposed regulation although there may be costs related to UL's requirement for manufacturers to use the new designation.

14. APPENDIX A4 RESIDENTIAL VOLUNTARY MEASURES

SECTION: A4.106.8 Electric vehicle (EV) charging for new construction.

Rationale: HCD proposes to repeal existing Section A4.106.8, which provides a summary of requirements for voluntary measures related to EV charging.

HCD proposes to adopt a new Section A4.106.8, which clarifies application to new construction and provides general requirements and a reference to the California Electrical Code, specifically Article 625, addressing EV charging. This section is an introduction to the voluntary EV charging measures available for adoption by local agencies and has no mandatory fiscal effect.

15. APPENDIX A4 RESIDENTIAL VOLUNTARY MEASURES

SECTION: A4.106.8.1 New one- and two-family dwellings and townhouses with attached private garages.

Rationale: HCD proposes to repeal existing Section A4.106.8.1 addressing raceway-only installation for future EV charging purposes in one- and two-family dwellings. This repeal is related to the new mandatory residential provisions for EV charging in the proposed new Section 4.106.4.1. This repeal has no mandatory fiscal effect since it was a voluntary measure available for adoption by local agencies.

HCD proposes to adopt a new Section A4.106.8.1, which provides a Tier 1 and Tier 2 prerequisite measure for EV charging for one- and two-family dwellings and townhouses with attached private garages. This Tier 1/Tier 2 measure, if adopted by a local enforcing agency, will require a 208/240-volt dedicated branch circuit of 40-ampere minimum and associated overcurrent protective device. Panel sizing will be pursuant to the California Electrical Code to accommodate the required dedicated branch circuit and overcurrent protective device. This section also clarifies that other related electrical components to EV charger use be installed in accordance with the California Electrical Code.

This is a voluntary measure available for adoption by local agencies and has no mandatory fiscal effect. (See Section 4.106.4 for additional history.)

**16. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.106.8.1.1 Identification.

Rationale: HCD proposes to amend the above referenced section requiring the identification of the overcurrent protective device for the branch circuit at the service panel or subpanel as “EV READY” and also at the receptacle or blank cover. The title of this section has been changed from “Labeling requirement,” in the existing voluntary measure, to differentiate it from the formal “labeling” by organizations or manufacturers. There is minimal cost impact for implementation (e.g., permanent ink marker or durable pencil) due to existing requirements in the California Electrical Code, Sections 110.22 and 408.4, which, in part, requires identification at the circuit directory in panels or subpanels to be durably marked without specificity for method or material. A similar method could also be used for identification at the receptacle or blank cover, whichever is used.

**17. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.106.8.2 New multifamily dwellings,; and “Notes”

Rationale: HCD proposes to amend the above referenced section addressing EV charging services for multifamily dwellings, which includes a requirement for 3 percent of parking spaces, but not less than one, to be capable of supporting EV charging equipment. HCD proposes to identify this section as a Tier 1 and Tier 2 measure and to increase the required percentage of EVCS to 5 percent of total parking spaces. This section would reference the similar mandatory Section 4.106.4.2 for additional requirements. This amendment has no mandatory fiscal effect since it was and will remain a voluntary measure available for adoption by local agencies.

HCD also proposes to adopt the above referenced “Notes” at the very end of Section A4.106.8 providing resources related to EV charging signage, guidelines, accessibility recommendations, etc. These Notes are a listing of resources only. There is no cost for implementation.

**18. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.106.8.2.1 Single charging space required.

Rationale: HCD proposes to repeal existing Section A4.106.8.2.1 addressing a single charging space. This repeal is related to the new mandatory residential provisions for EV charging in proposed new Section 4.106.4.2.3. This repeal has no mandatory fiscal effect since it was a voluntary measure available for adoption by local enforcing agencies.

**19. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.106.8.2.2 Multiple charging spaces required.

Rationale: HCD proposes to repeal existing Section A4.106.8.2.2 addressing multiple charging spaces. This repeal is related to the new mandatory residential provisions for EV charging in proposed new Section 4.106.4.2.4. This repeal has no mandatory fiscal effect since it was a voluntary measure available for adoption by local enforcing agencies.

**20. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.106.8.2.3 Labeling requirement.

Rationale: HCD proposes to repeal the above referenced section. This repeal is related to the mandatory residential provisions for EV charging in proposed new Section 4.106.4.2.5. There is no mandatory fiscal effect since it was a voluntary measure available for adoption by local agencies.

**21. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.107 SOLAR PHOTOVOLTAIC (PV) SYSTEMS

SECTION: A4.107.1 General.

SECTION: A4.107.2 Small solar photovoltaic (PV) systems streamlined permitting process.

Rationale: HCD proposes to renumber existing Section A4.107 to Section A4.108 and adopt new Sections A4.107, A4.107.1 and A4.107.2, which introduce Tier 1 and Tier 2 requirements for a streamlined permitting and inspection process for Small Solar Photovoltaic (PV) Systems as defined in Chapter 2. Certain provisions are based upon the recommendations in the *California Solar Permitting Guidebook*, published June 2012, which was developed by the Governor's Office of Planning and Research (OPR), Solar Permitting Work Group.

Jurisdictions that adopt Tier 1 have a choice of either developing their own local streamlined permitting process, which contains some of the elements in the *California Solar Permitting Guidebook*, or they may choose to adopt the streamlined permitting process and forms contained in the *California Solar Permitting Guidebook*. Adoption of Tier 1 will require jurisdictions to implement 3 basic elements of permit streamlining, which include: a standard checklist identifying the required documentation to be submitted with the permit application; a standard plan for describing the proposed solar PV system; and an inspection checklist identifying all elements of the solar PV system to be inspected before final approval.

Jurisdictions that adopt Tier 2 will have an additional requirement to implement a web-based permit application and issuance system and a streamlined inspection process of their own design, or based upon the *California Solar Permitting Guidebook*.

This is a voluntary measure available for adoption by local agencies and has no mandatory fiscal effect.

**22. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.108 INNOVATIVE CONCEPTS AND LOCAL ENVIRONMENTAL CONDITIONS

SECTION: A4.108.1 Innovative concepts and local environmental conditions.

Rationale: HCD proposes to renumber existing Sections A4.107 and A4.107.1 to new Sections A4.108 and A4.108.1 to accommodate the adoption of new Section A4.107 "Solar Photovoltaic (PV) Systems", which contains provisions for photovoltaic systems and is more appropriately located after Section A4.106 "Site Development". This is an editorial renumbering only.

**23. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.504.2 Resilient flooring systems.

Rationale: HCD proposes to amend the above referenced section to clarify the criteria used by the Collaborative for High Performance Schools (CHPS) as the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).

The changes also reflect a name change from GREENGUARD Children & Schools program to UL GREENGUARD Gold. This is a name change only that occurred in early 2013; however, the standards on which certification is based remain the same. (The GREENGUARD Gold Certified products also must comply with the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350). According to UL, manufacturers have three years to comply with the change. There is no intended change in regulatory effect. There is no fiscal impact due to the proposed regulation although there may be costs related to UL's requirement for manufacturers to use the new designation.

**24. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.504.3 Thermal insulation.

Rationale: HCD proposes to amend the above referenced section to clarify the criteria used by the Collaborative for High Performance Schools (CHPS) as the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).

The changes also reflect a name change from GREENGUARD Children & Schools program to UL GREENGUARD Gold. This is a name change only that occurred in early 2013; however, the standards on which certification is based remain the same. (The GREENGUARD Gold Certified products also must comply with the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350).

According to UL, manufacturers have three years to comply with the change. There is no intended change in regulatory effect. There is no fiscal impact due to the proposed regulation although there may be costs related to UL's requirement for manufacturers to use the new designation.

**25. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.601.4.2 Prerequisite and elective measures for Tier 1.

Rationale: HCD proposes to amend the above referenced section to reflect proposed changes for Tier 1 measures for EV charging in Section A4.106.8 and solar photovoltaic streamlined permitting in Section A4.107.2. Section A4.601.4.2 provides a listing of Tier 1 requirements as specified in Appendix A4.

This section is only a listing of voluntary measures available for adoption by local agencies and has no mandatory fiscal effect.

**26. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.601.5.2 Prerequisite and elective measures for Tier 2.

Rationale: HCD proposes to amend the above referenced section to reflect the adoption of Tier 1 measures for EV charging in Section A4.106.8. Listing of these measures in Tier 2 provisions would ensure that Tier 2 includes the EV charging measures although they are the same as for Tier 1.

HCD also proposes to amend the above referenced section to reflect proposed changes for a Tier 2 measure for solar photovoltaic streamlined permitting in Section A4.107.2. This section provides a listing of Tier 2 requirements as specified in Appendix A4.

This section is only a listing of voluntary measures available for adoption by local agencies and has no mandatory fiscal effect.

**27. APPENDIX A4
RESIDENTIAL VOLUNTARY MEASURES**

SECTION: A4.602 RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST

Rationale: HCD proposes to amend the above referenced checklist. The Residential Occupancies Application Checklist is being updated to reflect changes made in both the mandatory provisions of Chapter 4 and voluntary provisions of Appendix A4. The Residential Occupancies Application Checklist is a reference document and may be modified and used as a template by local enforcing agencies. This checklist reflects mandatory and Tier 1 and Tier 2 prerequisites and is not by itself a regulatory document.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

(Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).)

HCD and a subcontractor, ConSol, have completed a feasibility study for electric vehicle charging in California. The report, "Department of Housing and Community Development Electric Vehicle Readiness Study", was funded by the California Energy Commission.

STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS

(Government Code Section 11346.2(b)(4) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment or prescriptive standards are required.)

HCD is statutorily required to adopt by reference model building codes, which contain prescriptive standards. Prescriptive standards provide the following: explicit guidance for certain mandated requirements; consistent application and enforcement of building standards while also establishing clear design parameters; and ensure compliance with minimum health, safety and welfare standards for owners, occupants and guests.

Performance standards are permitted by state law; however, they must be demonstrated to the satisfaction of the proper enforcing agency.

In the case of the California Green Building Standards Code (CALGreen), there is no model code to be adopted. However, Health and Safety Code Section 17928 mandates HCD to review relevant green building guidelines and to propose green building features that are cost effective and feasible as mandatory building standards.

CONSIDERATION OF REASONABLE ALTERNATIVES

(Government Code Section 11346.2(b)(5)(A) requires a description of reasonable alternatives to the regulation and the agency's reason for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered an alternative. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.)

None. There were no alternatives available to HCD. HCD is required by statute to propose green building features that are cost effective and feasible as mandatory building standards.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

(Government Code Section 11346.2(b)(5)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.)

None. There were no alternatives available to HCD. HCD is required by statute to propose green building features that are cost effective and feasible as mandatory building standards.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS

(Government Code Section 11346.2(b)(6)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.)

HCD has determined that this regulatory action would have no significant adverse economic impact on California business enterprises and individuals, including the ability of California businesses to compete with businesses in other states.

ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS THAT IMPACT HOUSING

(Government Code Section 11346.2(b)(6)(B) states if a proposed regulation that is a building standard impacts housing, the Initial Statement of Reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.)

- No increased cost of compliance for those regulations that make technical, nonsubstantive or clarifying changes.
- The estimated cost of compliance related to infrastructure for future installation of electric vehicle charging station equipment (EVSE) is expected to be less than \$500 per dwelling unit; however, since costs are spread across the different types of residential housing affected by this rulemaking package (i.e., single-family, multifamily dwelling units), \$100 per unit is a more likely estimate.
- See Item Numbers 4, 9 and 10 above for additional cost analysis information.
- Potential benefits include providing the groundwork for new green technology, encouraging use of electric vehicles, cost savings to homeowners who choose to use EVs for transportation, reduction of greenhouse gas emissions and preservation of natural resources.
- Protection of public health and safety, worker safety and the environment.
- General welfare of California residents.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

(Government Code Section 11346.2(b)(7) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment.)

These regulations do not duplicate nor conflict with federal regulations.