

Exhibit A								
2013 Title 24, Part 11, California Green Building Code Summary Table								
	MANDATORY MEASURES <i>(effective July 1, 2015)</i>		VOLUNTARY MEASURES TIER 1		VOLUNTARY MEASURES TIER 2		CONTRA COSTA COUNTY MANDATORY MEASURES	
One-and Two-Family w/attached private garages	For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit							
Multi-family	17+ multifamily units, <b>3 percent</b> of total parking spaces (minimum 1 space) shall be capable of supporting future electric vehicle charging stations (EVCS)		17+ multifamily units, <b>5 percent</b> of total parking spaces (minimum 1 space) shall be capable of supporting future electric vehicle charging stations (EVCS)			<b>5 percent</b> of total parking spaces (minimum 1 space) shall <i>install fully operational</i> (minimum Level 2 or higher1) electric vehicle charging stations (EVCS)		
Non-Residential	Construction shall facilitate future installation of electric vehicle supply equipment (EVSE)							
	MANDATORY		TIER 1		TIER 2		MANDATORY	
	TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES	TOTAL NUMBER OF PARKING SPACES	TIER 1 NUMBER OF REQUIRED EV CHARGING SPACES	TOTAL NUMBER OF PARKING SPACES	TIER 2 NUMBER OF REQUIRED EV CHARGING SPACES	TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
							<u>1-10</u>	<u>1</u>
							<u>11-25</u>	<u>2</u>
	0-50	0	0-50	1	0-50	2	<u>26-50</u>	<u>3</u>
	51-75	1	51-75	2	51-75	3	51-75	<u>5</u>
	76-100	2	76-100	3	76-100	4	76-100	<u>6</u>
	101-200	3	101-200	5	101-200	7	101-200	<u>12</u>
	201+	3%*	201+	4%*	201+	6%*	201+	<u>6%*</u>
	*Calculation for spaces shall be rounded up to the nearest whole number.							

1 Dedicated 208/240-volt branch circuit; service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device

**EXHIBIT B**  
**FINAL DRAFT ELECTRIC**  
**VEHICLE CHARGING**  
**ORDINANCE AMENDMENTS FOR**  
**COUNTY ADOPTION**

**ORDINANCE NO. 2015-\_\_ (DRAFT)**

(Amendment of 2013 California Green Building Standards Code)

The Contra Costa County Board of Supervisors ordains as follows (omitting the parenthetical footnotes from the official text of the enacted or amended provisions of the County Ordinance Code):

**SECTION I. Summary.** This ordinance amends the 2013 California Green Building Standards Code, including the July 1, 2015 supplement, to establish electric vehicle parking and charging station standards. This ordinance is adopted pursuant to Health and Safety Code sections 17922, 17958, 17958.5, and 17958.7, and Government Code sections 50020 through 50022.10.

**SECTION II.** Section 74-4.006 is hereby added to Chapter 74-4 of the Ordinance Code to read:

**74-4.006 Amendments to the Green Building Standards Code.** The 2013 California Green Building Standards Code, including the July 1, 2015 supplement, is amended by the changes, additions, and deletions set forth in this chapter and Division 72. Section numbers used below are those of the 2013 Green Building Standards Code, including the July 1, 2015 supplement.

(a) Section 4.106.4.2 of Chapter 4 of the Green Building Standards Code is amended to read:

**4.106.4.2 New multifamily dwellings.** For any new multifamily dwelling other than a dwelling type specified in Section 4.106.4.1, at least five percent of the total number of parking spaces provided for all types of parking facilities, but in no case no less than one parking space, shall be electric vehicle charging stations (EVCS). Each EVCS shall be equipped with fully operational electric vehicle supply equipment (EVSE). The location of each EVCS shall be identified on construction documents. Calculations to determine the number of EVCS shall be rounded up to the nearest whole number.

- (b) Table 5.106.5.3.3 in Chapter 5 of the Green Building Standards Code is amended to read:

TABLE 5.106.5.3.3	
TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
1-10	1
11-25	2
26-50	3
51-75	5
76-100	6
101-200	12
201 and over	6%*
*Calculation for spaces shall be rounded up to the nearest whole number	

**SECTION III. Effective Date.** This ordinance becomes effective 30 days after passage, and within 15 days of passage shall be published once in the Contra Costa Times, a newspaper published in this County. This ordinance shall be published in a manner satisfying the requirements of Government Code section 25124, with the names of supervisors voting for and against it.

Passed on \_\_\_\_\_, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST: David Twa,  
Clerk of the Board of Supervisors  
and County Administrator

\_\_\_\_\_  
Board Chair

By: \_\_\_\_\_  
Deputy

[SEAL]

SMS

H:\Client Matters\Building Inspection\2015 Green Building Code Ord\2015 Green Building Code Ord - Draft 2.doc

**ORDINANCE NO. 2015-\_\_ (DRAFT)**

**EXHIBIT C**  
**CALIFORNIA GREEN BUILDING**  
**STANDARDS CODE**  
**ELECTRIC VEHICLE**  
**MANDATORY MEASURES**

## RESIDENTIAL MANDATORY MEASURES

**4.106.4. Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

**Exceptions:** 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. Where there is no commercial power supply.
2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per dwelling unit.

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

For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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

**4.106.4.2 New multifamily dwellings.** Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations (EVCS) capable of supporting future EVSE and shall be identified on construction documents. Calculations for the number of EVCS shall be rounded up to the nearest whole number.

**Note:** Construction documents are intended to demonstrate the project’s capability and capacity for facilitating future EV charging. There is no requirement for EVCS to be constructed or available until EV chargers are installed for use.

**4.106.4.2.1 Electric vehicle charging station (EVCS) locations.** Construction documents shall indicate the location of proposed EVCS. At least one EVCS shall be located in common use areas and available for use by all residents.

When EV chargers are installed, EVCS required by Section 4.106.2.2, Item 3, shall comply with at least one of the following options:

1. The EVCS shall be located adjacent to an accessible parking space meeting the requirements

of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.

2. The EVCS shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

**4.106.4.2.2 Electric vehicle charging station (EVCS) dimensions and slope.** The EVCS shall be designed to comply with the following:

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

**4.106.4.2.3 Single EVCS required.** Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EVCS. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

**4.106.4.2.4 Multiple EVCS required.** Construction documents shall indicate the raceway termination point and proposed location of future EVCS and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EVCS at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

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

**Notes:**

1. The California Department of Transportation adopts and publishes the “California Manual on Uniform Traffic Control Devices (California MUTCD)” to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle

Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: [www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm](http://www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm).

2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: [http://opr.ca.gov/docs/ZEV\\_Guidebook.pdf](http://opr.ca.gov/docs/ZEV_Guidebook.pdf).
4. The Governor's Office of Planning and Research (OPR) has developed draft guidelines, "Plug-In Electric Vehicles: Universal Charging Access Guidelines and Best Practices", addressing physical accessibility standards and design guidelines for EVs. Website: [http://opr.ca.gov/docs/PEV\\_Access\\_Guidelines.pdf](http://opr.ca.gov/docs/PEV_Access_Guidelines.pdf).

## NONRESIDENTIAL MANDATORY MEASURES

**5.106.5.3 Electric vehicle (EV) charging.** [N] Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows:

**5.106.5.3.1 Single charging space requirements.** [N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:

1. The type and location of the EVSE.
2. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.
3. The raceway shall not be less than trade size 1."
4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.
5. The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.

**5.106.5.3.2 Multiple charging space requirements.** [N] When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:

1. The type and location of the EVSE.



2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.
3. Plan design shall be based upon 40-ampere minimum branch circuits.
4. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.
5. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

**5.106.5.3.3 EV charging space calculation.** [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.

**Exceptions:** On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

1. Where there is insufficient electrical supply.
2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

<b>TABLE 5.106.5.3.3</b>	
<b>TOTAL NUMBER OF PARKING SPACES</b>	<b>NUMBER OF REQUIRED EV CHARGING SPACES</b>
0-50	0
51-75	1
76-100	2
101-200	3
201 and over	3%*
*Calculation for spaces shall be rounded up to the nearest whole number	

**5.106.5.3.4 [N] Identification.** The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”

**5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking.**

**Notes:**

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. [www.dot.ca.gov/hq/traffops/policy/13-01.pdf](http://www.dot.ca.gov/hq/traffops/policy/13-01.pdf).
2. See Vehicle Code Section 22511 for EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents and businesses. [www.opr.ca.gov/docs/ZEV\\_Guidebook.pdf](http://www.opr.ca.gov/docs/ZEV_Guidebook.pdf).

**CALIFORNIA GREEN BUILDING  
STANDARDS CODE  
ELECTRIC VEHICLE  
RESIDENTIAL TIER 1 AND 2**

## RESIDENTIAL VOLUNTARY MEASURES

**A4.106.8 Electric vehicle (EV) charging for new construction.** New construction shall comply with Sections A4.106.8.1 and A4.106.8.2 to facilitate future installation and use of electric vehicle chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

### **A4.106.8.1 New one- and two-family dwellings and townhouses with attached private garages.**

**Tier 1 and Tier 2.** For each dwelling unit, a dedicated 208/240-volt branch circuit shall be installed in the raceway required by Section 4.106.4.1. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum. Other electrical components, including a receptacle or blank cover, related to this section shall be installed in accordance with the California Electrical Code.

**A4.106.8.1.1 Identification.** The service panel or subpanel circuit directory shall identify the overcurrent protective device designated for future EV charging purposes as “EV READY” in accordance with the California Electrical Code. The receptacle or blank cover shall be identified as “EV READY.”

### **A4.106.8.2 New multifamily dwellings.**

**Tier 1 and Tier 2.** Where 17 or more multifamily dwelling units are constructed on a building site, 5 percent of the total number of parking spaces provided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging stations (EVCS) capable of supporting future EVSE and shall be identified on construction documents. Calculations for the number of EVCS shall be rounded up to the nearest whole number.

See Section 4.106.4.2 for additional requirements related to EVCS for multifamily dwellings.

Notes:

1. The California Department of Transportation adopts and publishes the “California Manual on Uniform Traffic Control Devices (California MUTCD)” to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: [www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm](http://www.dot.ca.gov/hq/traffops/signtech/signdel/policy.htm).
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor’s Office of Planning and Research (OPR) published a “Zero-Emission Vehicle Community Readiness Guidebook” which provides helpful information for local governments, residents and businesses. Website: [http://opr.ca.gov/docs/ZEV\\_Guidebook.pdf](http://opr.ca.gov/docs/ZEV_Guidebook.pdf).

4. The Governor's Office of Planning and Research (OPR) has developed draft guidelines, "Plug-In Electric Vehicles: Universal Charging Access Guidelines and Best Practices", addressing physical accessibility standards and design guidelines for EVs. Website: [http://opr.ca.gov/docs/PEV\\_Access\\_Guidelines.pdf](http://opr.ca.gov/docs/PEV_Access_Guidelines.pdf).

**CALIFORNIA GREEN BUILDING  
STANDARDS CODE  
ELECTRIC VEHICLE  
NON-RESIDENTIAL TIER 1 AND 2**

## NONRESIDENTIAL VOLUNTARY MEASURES

**A5.106.5.3 Electric vehicle (EV) charging.** Construction shall comply with Section A5.106.5.3.1 and A5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code Section 406.9, the California Electrical Code and as follows:

**A5.106.5.3.1 Tier 1.** Table A5.106.5.3.1 shall be used to determine if single or multiple charging space requirements apply for future installation of EVSE. When a single charging space is required per Table A5.106.5.3.1, refer to Section 5.106.5.3.1 for design requirements. When multiple charging spaces are required, refer to Section 5.106.5.3.2 for design requirements.

**A5.106.5.3.2 Tier 2.** Table A5.106.5.3.2 shall be used to determine the number of multiple charging spaces required for future installation of EVSE. Refer to Section 5.106.5.3.2 for design space requirements.

<b>TABLE A5.106.5.3.1</b>	
<b>TOTAL NUMBER OF PARKING SPACES</b>	<b>TIER 1 NUMBER OF REQUIRED EV CHARGING SPACES</b>
0-50	1
51-75	2
76-100	3
101-200	5
201 and over	4%*
*Calculation for spaces shall be rounded up to the nearest whole number	

<b>TABLE 5.106.5.3.2</b>	
<b>TOTAL NUMBER OF PARKING SPACES</b>	<b>TIER 2 NUMBER OF REQUIRED EV CHARGING SPACES</b>
0-50	2
51-75	3
76-100	4
101-200	7
201 and over	6%*
*Calculation for spaces shall be rounded up to the nearest whole number	

**A5.106.5.3.3 Identification.** The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as “EV CAPABLE.” The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”

**A5.106.5.3.4** Future charging spaces qualify as designated parking as described in Section A5.106.5.1 Designated parking.

**Notes:**

1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. [www.dot.ca.gov/hq/traffops/policy/13-01.pdf](http://www.dot.ca.gov/hq/traffops/policy/13-01.pdf).
2. See Vehicle Code Section 22511 EV charging spaces signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents and businesses. [www.opr.ca.gov/docs/ZEV\\_Guidebook.pdf](http://www.opr.ca.gov/docs/ZEV_Guidebook.pdf).