

Electric Vehicle Infrastructure Requirements for New Multi-Family and Nonresidential Buildings



As of March 22nd, 2017, builders are required to provide the following levels of plug-in electric vehicle (PEV) infrastructure in all new multi-family and nonresidential buildings, including design for compliance with state Americans with Disabilities Act (ADA) requirements for PEV infrastructure. The new requirements are designed to accelerate the installation of vehicle chargers to address demand.

Table 1. New multi-family buildings with 3 or more units or non-residential buildings

| | 1 parking space | 2-10 parking spaces | 11-15 parking spaces | 16-20 parking spaces | More than 20 parking spaces |
|--------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|
| Full Circuit | 1 parking space | 2 parking spaces | 2 parking spaces | 2 parking spaces | 10% of parking spaces (rounded up) |
| Inaccessible Conduit Installed | Not applicable | Not Applicable | 1 parking space | 2 parking spaces | Multi-Family Buildings: Remaining 90% of parking spaces Non-Residential Buildings: Additional 10% |
| Electric Panel Capacity | Sufficient to supply 1 parking space | Sufficient to supply 2 parking spaces | Sufficient to supply 3 parking spaces | Sufficient to supply 4 parking spaces | Sufficient to supply 20% of spaces* |

*Note: Full circuits are counted towards the panel capacity requirement. Panel capacity may be dispersed among up to 100 percent of spaces at lower amperage (see Definitions below) with a voluntary load management system.

Definition of Terms

Full Circuit — Full circuits are “ready to go” with the addition of an EV charging station. Full circuit installations include 208/240V 40-amp panel capacity, conduit, wiring, receptacle, and overprotection devices. The endpoint of the system must be near the planned EV charger location.

Inaccessible Conduit— Conduit that will be difficult to access or alter after construction (e.g. enclosed within walls or pavement, etc.). Accessible conduit must be installed during new construction to avoid expensive and intrusive retrofits when additional EV charging capacity is needed in the future.

Electric Panel Capacity — Panels must have space and electrical capacity to accommodate simultaneous charging on a 40-amp circuit per the required number of EV parking spaces in Table 1.

Load Management Technology — Whether via hardware or software, can be used to efficiently allocate electric current drawn by multiple electric vehicle charging stations (EVCS) by either directing full current to each EVCS in use (i.e., 40 amps per vehicle) or, when more vehicles than the maximum that can be served at 40 amps each are charging simultaneously, reducing the current drawn by each vehicle.

Plan Check

The City of Oakland does not require an Electrical Plan to be prepared; however, it is advised that the builder request a **Plan Check Review** to ensure compliance with the new PEV requirements and ADA design requirements before construction begins.

Labeling

Clear and permanent labeling is necessary to complete additional projects with full circuits in the future.

- Service panels must identify full circuits available for EV charging as "EV Ready"
- Service panels designated for future additional EV charging must be identified as "EV Capable"
- Conduit endpoints must be marked as "EV READY" (for full circuits) and "EV CAPABLE" (for empty conduit)

Four Levels of EV preparedness



Required Documentation

Construction documents for all projects must contain the following:

Electrical Panel:

- Verify panel allowable capacity
- Verify electrical system (including an on-site transformer if applicable) has sufficient capacity for charging

Conduit:

- Wiring schematics
- Conduit type
- Conduit termination point
- Proposed location of future EV spaces and EV charging stations

ADA Design:

- Plan for ADA-accessible parking spaces as required per standards in Table 2 (See below)

Exceptions

Case-by-case basis if EV charging infrastructure is not feasible due to:

Residential:

- If the requirements will result in modifications to the local utility infrastructure, and the costs borne by the homeowner or developer are more than \$400 per dwelling unit and \$400 per parking space, the building must maximize EV charging infrastructure compliance while remaining below the cost threshold.

Non-Residential:

- Insufficient electrical supply
- Utility-side cost increases by more than \$400 per parking space

If your facility qualifies under these exceptions, contact the Planning & Building Department for further consultation.

ADA Design Requirements

Beginning January 1, 2017, per section 11B-812 of Title 24 of the California Energy Code, Chapter 11B, new EVCS in buildings that are subject to Chapter 11B (Accessibility to Public Buildings, Public Accommodations, Commercial Buildings and Publicly Funded Housing) must comply with specific accessibility requirements.

Oakland code requires that original construction designs address key aspects of accessibility for future EVCS.

Builders must show that spaces equipped with full circuits are constructed to meet Chapter 11B **slope, accessibility, and path of travel requirements** at the time of construction. The number and type of spaces are shown in Table 2:

Table 2. Electric Vehicle Charging Stations for Public Use and Common Use

| Vehicle Type | 1 - 4 | 5 - 25 | 26 - 50 | 51 - 75 | 76 - 100 | 101 and over |
|---------------------|-------|--------|---------|---------|----------|---|
| Van Accessible | 1* | 1 | 1 | 1 | 1 | 1, plus 1 for each 300, or fraction thereof, over 100 |
| Standard Accessible | 0 | 1* | 1 | 2 | 3 | 3, plus 1 for each 60, or fraction thereof, over 100 |
| Ambulatory | 0 | 0 | 1* | 2* | 3* | 3, plus 1 for each 50, or fraction thereof, over 100 |

Minimum Number of EVCS Required to Comply with Section 11B-812**

* Accessible EVCS designed for accessibility, but not reserved for exclusive use by disabled persons

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

Questions & Contact Information

Do you believe your facility will be better served with Level One Chargers or DC Fast Chargers? Have any questions about the new ordinance? Need assistance complying with the requirements? Contact the City of Oakland Planning & Building Department:

Code Enforcement Services Complaint Submittals: (510) 238-3381

Inspection Scheduling: (510) 238-3444