

CITY OF MILPITAS

Building & Safety Department
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Electric Vehicle Charging System in Single Family Residence Plan Review and Permitting Requirements

There are two levels of electric vehicle (EV) charging system for single family residence (one- and two- family dwellings) installations: Level 1 (120 VAC, 15/20 A) and Level 2 (240 VAC, 40A). A permit is required for all EV charging systems installed in a single family residence (SFR). Permits may be obtained on-line or over-the-counter for EV charging system installations.

EVSE = Electric Vehicle Supply Equipment

VAC = Voltage Alternating Current.

Permitting Requirements:

1- Electric vehicle charging system (ventilation not required)

Electrical Permit:

Electrical Plans are not required to be submitted to the Building & Safety Department for approval prior to issuance of Electrical Permit. Electrical permit will be issued without any plan review. However, please note that the plans and manufacturer's installation guidelines will be reviewed by the City's Field Inspector at the job site during inspection.

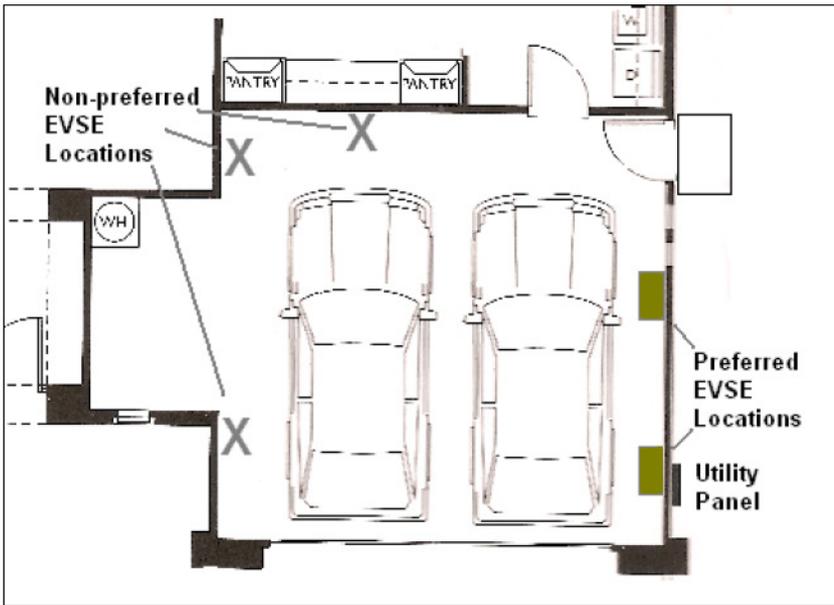
2- Electric vehicle charging system (ventilation required)

Combination Permit:

Electrical and Mechanical Plans are not required to be submitted to the Building & Safety Department for approval prior to issuance of combination permit. Combination permit will be issued without any plan review. However, please note that the plans and manufacturer's installation guidelines will be reviewed by the City's Field Inspector at the job site during inspection.

The following information is required to be presented to Building Inspector:

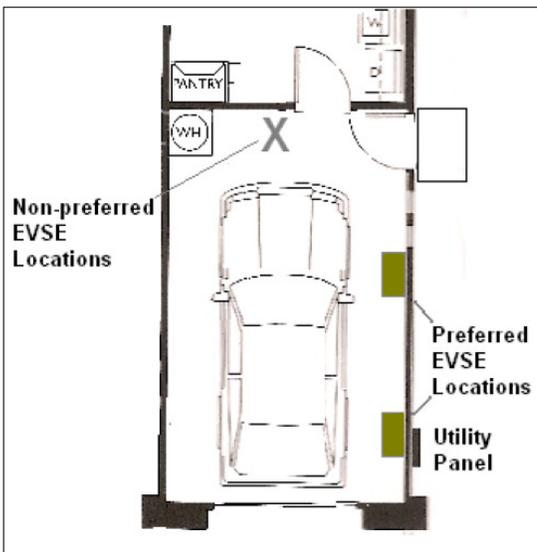
1. Specify the type of EV charging system: Level 1 or Level 2. Provide the UL listing number, or the listing number of another approved nationally recognized testing laboratory, in compliance with UL2202: "Standard for Electric Vehicle Charging System Equipment".
2. Specify the panel rating of the existing electrical service (e.g. 200 amp service) at the residence. Indicate the EV charging system load and circuit size.
3. Indicate if a second electric meter installation is required due to special electric utility rates available for EV charging.
4. Specify the proposed location of the EV charging system. EV charging system equipment shall be installed in accordance with manufacturer's written guidelines and shall be suitable for its intended location (indoor/outdoor). See Fig. "A" and "B"



In this figure, the best location would be for the EV on the right. The non-preferred EVSE locations are in typical walking areas, and could present a tripping hazard. In addition, these options are farther away from the utility panel.

An alternative for the EV owner who wishes to place the EVSE in these locations could be to use an overhead support for the charge cable and connector. If the EV inlet is on the left side of the vehicle, the owner could consider backing into the garage.

Fig. "A" Double Garage Location for EVSE



In the single garage environment, most locations will be acceptable for placing the EVSE, except perhaps at the head of the vehicle because of tripping concerns. The preferred locations have been selected for their proximity to the utility panel. Again, overhead support for the EVSE cable would allow EVSE installation where the owner prefers.

The California Electrical Code Article 625 provides additional requirements should the EVSE be located in a hazardous area. The other materials stored in the garage should be considered carefully when placing the EVSE if they are determined to be of a hazardous nature.

Fig. "B" Typical Single Garage Location for EVSE

- Detached garages will introduce additional considerations when routing the electrical supply to the garage. Landscaping will be disrupted during the installation process, which may be of great significance to the owner and should be thoroughly planned in advance.

Other Requirements:

- Electrical panel upgrades and electrical wiring shall be in conformance with the current edition of the California Electrical Code (CEC).
- The Residential Electrical panel upgrade is under separate permit and is also available online.