

GUIDING PRINCIPLES FOR IDENTIFYING POTENTIAL PUBLIC EV CHARGING STATIONS¹

Based on local factors and priorities, local jurisdictions may wish to develop and adopt a set of guiding principles for identifying potential public electric vehicle charging stations (EVCS) sites that can also be applied to multi-unit dwellings (MUDs) or fleet installations.

The following principles have been developed by the Transportation Authority of Marin (TAM)² for use in guiding their charger deployment strategy, and reflect much of the latest thinking from projects across the nation. The Marin principles include primary global principles, secondary global principles, and site-specific principles and are defined below³:

1. **Primary Global Principles** – Those factors that are of highest importance when deciding on overall sites to locate EVCS.
2. **Secondary Global Principles** – Additional factors of secondary importance to consider when selecting overall locations for EVCS.
3. **Site Specific Principles** – Priority factors to consider when determining the specific location within a general site where the EVCS(s) will be installed.

¹ Ready, Set, Charge, California!: A Guide to EV-Ready Communities, Available at <<http://baclimate.org/wp-content/uploads/2015/10/Ready-Set-Charge-California-EV-Communities-Guide.pdf>>.

² Development of Guiding Principles – Report on Preliminary Plans for the Siting and Placement of Publicly-Accessible Electric Vehicle Charging Stations throughout Marin County, Available at <<http://www.tam.ca.gov/Modules/ShowDocument.aspx?documentid=4020>>.

³ Note that minor changes have been made in this document to the original principles.

PRIMARY GLOBAL PRINCIPLES

These factors are of highest importance when deciding on overall sites to locate EVCS.

Location: Select a high-demand, high-visibility location (especially for the first few chargers). Better placement of EVCSs can come from data collection and polling of EV owners.

Electricity: Select a location where AC Level 1 (120V/15A) or AC Level 2 (240V/40A) electrical supply is or can be made available with relative ease and minimal cost.

Economics: The costs of charger installation and potential loss of parking space revenue should be weighed against the benefits of projected revenues, positive publicity, and increased visitor spending in the jurisdiction, as well as the broader societal benefits of spurring the transition to clean, low-carbon transportation.

Access: Consider and comply with ADA guidelines for disabled access, and take precautions to ensure that chargers are placed with the user's convenience in mind (avoiding injury from tripping on cords and cables, etc.)

Security: Select a secure location with adequate lighting to enhance security and provide the customer with a good charging experience.

Signage: Provide enforcement and other signs that comply with the Manual on Uniform Traffic Control Devices (MUTCD), ensuring that signs are high enough, easily visible, and provide clear and accurate information.

Equipment Protection: EV chargers should be placed where they can be best protected from physical damage by such measures as curbs, wheel stops, setbacks, bumper guards, and concrete-filled steel bollards, while simultaneously taking into consideration ease of access to the charger, mobility of users, and foot traffic in the area.

Fleet Use: Consider "dual purpose" sites that could also benefit the jurisdiction's fleet vehicles, as well as the general public, where feasible and appropriate.

SECONDARY GLOBAL PRINCIPLES

Additional factors of secondary importance to consider when selecting overall locations for EVCS.

Diversity of Intended Users: PEV chargers should (progressively) be located in sites that will appeal to the diversity of PEV users (e.g., local residents, visitors and tourists, and fleet drivers)

Public Safety: Chargers should be located in areas with proper ventilation and away from potential hazards including traffic, explosive materials, flammable vapors, liquids and gases, combustible dust or fibers, materials that ignite spontaneously on contact with air, flood-prone areas, and areas that might be prone to vandalism.

Duration of Use: AC Level 1 charger sites should focus on locations where vehicles will be parked for six or more hours, while AC Level 2 charger sites should focus on locations where PEV owners will be parked for significant, though shorter, periods of time (e.g., one to six hours). DC Fast Chargers sites should focus on locations where the PEV owner will be parked for a relatively short period of time (e.g., 15 minutes).

Location Markings: Indication of parking spaces, striping, driveways, and walkways.

Cord Management: To avoid injury from tripping, cords should not cross sidewalks or pedestrian traffic patterns.

Shelter: When possible, shelter is desirable to protect users from weather when connecting their vehicle to the charger. (However, chargers are designed to be safely operated in exposed locations in the rain, with no danger of electrical shock.)

Aesthetics: Some areas may benefit from the installation of landscaping or screening walls to shield the electrical transformer, panel, or other equipment from the public eye.

Solar Power: Some jurisdictions may choose sites where solar panels can provide energy to power the charging unit.

Other PEVs: Locations may be chosen to cater not only to freeway-capable Battery-Electric (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs) -- which typically utilize the 240V volt "AC Level 2" connections for faster charging -- but also to slower-speed Neighborhood EVs (NEVs), electric bicycles, electric scooters, and electric motorcycles which typically utilize a 120V electrical connection.

SITE SPECIFIC PRINCIPLES

Priority factors to consider when determining the specific location within a general site where the EVCS(s) will be installed.

Accessibility: EV charger location within a site should comply with ADA access requirements.

Electrical Supply: Select a location where it is as inexpensive as possible to provide AC Level 1 (120V) or 2 (240V/40A) electrical supply.

Benefits vs. Loss of Revenue: When selecting the specific location of an EV charger at a particular site, a jurisdiction should consider the balance of anticipated benefits (including "EV readiness", revenue potential, and increased patronage of nearby business) versus potentially negative aspects of taking an available parking space (including negative impact on conventional vehicle drivers and lost revenue.)

Cord Management: When determining where to install an EV charger, a location should be selected where cords will not interfere with the path of travel of the user or other pedestrians in the vicinity.

Security: A location should be selected that is secure for users at all times of day and night and relatively secure from vandalism (e.g., in a well-lighted area; and in well-traveled areas.)