



Model Permitting and Inspection:

Local permitting processes for EVSE are a bureaucratic barrier due to time, complexity, and expense. Governments should streamline these processes, while still ensuring safety and code compliance.

A streamlined permitting system should be set up with tiers of permits (and required processes) based on the size and complexity of installation. Government regulations could require additional training for electrical contractors to receive certification for EVSE installations. Then, for simple and moderately complex installations, contractors would be authorized to issue permits on-the-spot and submit specifications to the local authority having jurisdiction (AHJ). The AHJ would randomly inspect a percentage of these installations to ensure compliance and revoke on-the-spot permitting for an electrician for repeated out-of-code installations. Highly complex commercial installations would still require the AHJ to inspect and issue the permit.

Zoning:

Use Regulations:

Residential EVSE installations should be allowed in any zoned area. Large, multi-port Level Two EVSE and DC Fast Charging (DCFC) designed to serve visitors should be allowed in commercial, industrial, institutional, and public/civic locations. For mixed-use neighborhoods – residential/retail – multi-port Level Two and DCFC should be presumed to be code compliant.

Parking Regulation, Signage, and Enforcement:

Local governments need to adopt parking regulations that ensure EVs have full access to designated charging spaces in all locations (government-controlled and private) and are not blocked by non-EVs. Signage and appropriate consequences, including penalties, for violations should be included. The code should outline regulations for the design of EV spaces in the public right-of-way (ROW) and in private parking lots. Signage should display charging pricing and basis for price (e.g., cost of electricity, time). Designated EV parking spaces should count toward required minimum parking for a commercial or residential facility to prevent additional expense and inefficient land use.

EVSE in Public Right-of-Way (ROW)

Municipalities should establish design standards for EVSE and related signage to be installed within the public ROW. This section addresses directional signage to guide drivers to the EV charging station, regulatory signage examples, and design guidance for on-street charging stations, whether owned and installed by governments or private entities.

Signage Regulations

Standard regulatory signs are needed to provide directions and signal the location of EV charging stations. Identifying signage should include hours of operation, time limits, requirements that vehicles be charging when parked, prohibitions for parking by non-EVs, and any penalties (i.e., fines, towing). Time limits should reflect anticipated peak charging demand time to reduce perception of a “wasted

space.” Hosts should consider locating charging spaces in low-demand areas of the parking lot (i.e., further from the entrance) which may reduce incidents of conventional vehicles parking in EV spaces.

Design Standards for On-Street or Curb EV Charging

Design standards can be used by municipalities to develop specifications for EVSE installed next to the curb in a public ROW. Other specifications will be needed for other publicly owned facilities, such as light and utility poles. These same specifications may be useful for private property with comparable infrastructure. These specifications can be incorporated into municipal code or regulations. They also can be inserted into any solicitations issued by the municipality for development of EVSE facilities.

Recommended Model Ordinance and Policy Provisions:

On-street electric vehicle charging stations shall incorporate the following features:

1. Dimensions: EVSE may be accommodated in a standard parking space.
2. Clearance: EVSE shall be installed or otherwise mounted as close to the curb as feasible to facilitate pedestrian clearance of 36 inches or greater, while maintaining a minimum of 24 inches from the face of the curb.
3. Accessibility: EVSE installed on a sidewalk or otherwise adjacent to an on-street parking space shall not conflict with the provisions of applicable code.
4. Location: Where feasible, the first or last parking space along a block shall be priority locations for a charging station serving an on-street parking space. The EVSE shall be installed near the front of a parking space.
 - a. One-Way Street Parallel Parking: Charging station shall be sited on the side of the street adjacent to the passenger side of the vehicle.
 - b. Angled or Perpendicular Parking: Wheel stops shall be installed to provide additional protection for the charging equipment. Signage shall specify whether back-in parking is permitted.
 - c. Multiple Spaces on a Block: Multiple charging stations provided along a single block shall be installed to serve adjacent spaces.
5. Equipment: EVSE sited within the ROW shall include a cord of an appropriate length to accommodate connectors on all sides of a vehicle. The equipment serving the charging station shall include a retractable cord or shall accommodate storage of the cord off the sidewalk or surface upon which the EVSE is installed. No cords or other EVSE equipment installed on a private site shall be permitted to cross or otherwise obstruct the public ROW.
6. Considerations: Siting a charging station at the beginning or end of a block facilitates ramp access at crosswalks, increases visibility of identification signage, and benefits from street lighting at a corner. However, siting EVSE within the ROW may depend on the location of the electrical service and needing to reduce the distance from the power source.
7. Signage: Individual spaces shall be designated with regulatory and informational signage in accordance with the Signage provisions outlined above.
8. Identification and Information Requirements: Appropriate identification shall be listed on the EVSE, including vendor, voltage, amperage levels, fees, safety information, and customer service contact information.

Building Codes

The purpose of the Model Building Code Provisions is to ensure that codes addressing new construction and renovation make facilities ready to support easy, economical installation of EVSE. Providing

sufficient electrical power to the buildings and/or parking facilities, electrical panel capacity, raceway and wiring is far less expensive and easier to accomplish than retrofitting after construction or renovation is complete. There are three EVSE code specifications: *EV-Capable*: electrical panel capacity, branch service, and raceway; *EV-Ready*: electrical panel capacity, branch service, raceway, wiring, and 240-volt outlet; and *EV-Installed*: installation of EVSE charging station.

Electrical Code Ordinance and Policy Guidance:

Residential Uses: For new single- and multi-family homes or complexes, each having dedicated garage(s) or parking spaces, provide electrical capacity with appropriate conduit and wiring from the service panel to the garage to sufficiently accommodate at least one Level Two EVSE unit (i.e., 208/240 V, 50-amp dedicated circuit) and at least one standard 120V, 15-amp (Level One) outlet (i.e. at least 15-amp dedicated circuit). For new multi-family construction (and major renovations) with a common parking area (open lot or garage), including mixed-use with residential as a component, provide electrical capacity with appropriate conduit and wiring, from the service panel to the parking area, for future installation to electrify between 20% and 100% of parking spaces.

Non-Residential Workplace Uses: For new non-residential construction (and significant renovations) used for workplaces, provide electrical capacity with appropriate conduit and wiring from the service panel to the garage or parking lot, appropriate for electrifying 20-100% of spaces. Electrified spaces may provide a combination of Level One (15-amp dedicated circuits), Level Two (208/240V, 40-amp dedicated or shared with load balancing). A higher percentage of at least EV-capable spaces are needed if the facility anticipates some level one service.

Facilitating EV Ready Capacity and EVSE Installation at Existing Properties

Local governments should pass codes that require existing properties and parking lots to install more EV-ready capacity and EVSE over time, regardless of new construction or renovations. This will promote more EV charging opportunities across a diversity of settings.

Related Considerations

Installation of the EV charger must comply with the NFPA 70, National Electrical Code (NEC), Article 625, Electric Vehicle Charging System (and/or applicable electrical code adopted and enforced by the jurisdiction). Contractors should be referred directly to the applicable edition of the NFPA for the requirements for installing charging stations. Municipalities should ensure that any related codes/requirements specific to their jurisdictions are easily available to contractors/homeowners. Additional resources are available through the NFPA, including guidance for emergency responder training.

Right to Charge

According to [NESCAUM](#), “Right to charge laws provide residents at multi-unit dwellings (and other properties) with the right to install a charging station for the individual’s use provided that certain conditions are met (e.g., the individual assumes responsibility for all associated costs).” These laws do not require homeowner associations or property management firms to pay for the installation or use.

Currently, we are not aware of any local jurisdictions with right to charge policies. Most right to charge policies have been adopted at the state level. In Massachusetts, the state legislature passed a law that would permit the City of Boston to establish a right to charge for condominium unit owners.

Fleet Decarbonization

Municipal fleets convey a commitment to fleet electrification, allowing the municipality to lead by example. In doing so, the municipality can reduce fuel and maintenance costs, GHG emissions, and demonstrate its commitment to sustainability, the surrounding communities, and the private sector. Several municipalities have already made commitments towards electrifying all or a portion of its fleet. As a best practice, local governments should install telematics in at least a representative sample of fleet vehicles, then work with a qualified third party to conduct analyses to develop the most cost-effective plan to transition the fleet to EVs and other cleaner vehicles. Local fleet analyses and plans should consider and include other clean fuels and vehicles, such as biofuels, renewable natural gas and renewable propane to include portions of the fleet for which EVs may not yet be economically viable.

Community Transportation Electrification (TE) Best Practices

Successful PEV and EVSE programs often rely on local government's coordination with community stakeholders. It is imperative that a city begins working with the major players (e.g., utilities, other city departments, planning groups, Clean Cities coalitions) early in the planning process. Policy actions can be supplemented through resident education programs that provide an overview of EVs and vehicle charging (e.g., through ride and drive events).

EV infrastructure (EVI) planning should include an inventory of neighborhoods and multi-family housing (MFH) that lack access to charging, and a plan for how these needs can be met, including public-private partnerships and financing strategies. Governments should work with employers and commercial real estate owners and developers to help develop workplace and retail charging. Governments also should identify public facilities it controls where charging will benefit the community and encourage growth of the EV market.

PEV and EVSE policies should be accessible to underserved communities. The Greenling Institute offers [tools, tips, and resources](#) to help develop programs that are inclusive of low-income communities and communities of color. While there are no federal requirements for Americans with Disabilities Act (ADA)-compliant EVSE parking spaces, it is a best practice that EVSE parking spaces meet [ADA standards](#).

Local Utility Bill Riders

Some states may allow municipalities to add riders (i.e., small additional fees) on bills of utility customers in that municipality. These riders can be designated for purposes defined in an ordinance. Such riders can apply to bills for customers of any utility – regulated investor-owned, municipal-owned, or cooperative.

If allowed by state law, local governments could enact an ordinance to create a bill rider (i.e., 50 cents per month) for the purpose of funding investments in EVSE and/or "EV-ready" wiring capacity at defined locations. In a city of 100,000 electric bill payers, a rider of 50 cents per month would generate \$600,000 per year for these investments. Criteria for investments should focus on what will generate the greatest impact for increasing new EV ownership.