

EV Charging Station Use Model Ordinance

**Submitted by:
The Staff of the Bucks County Planning Commission
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EV Charging Station Use Model Ordinance

Municipal governments play a key role in promoting the use of electric vehicles. Zoning, subdivision and land development ordinances may be used to provide standards such as safety, location and accessibility, and streamlined review and approval. With proper standards, electric vehicle charging stations may be located anywhere with minimal impacts.

This model ordinance provides definitions of Electric Vehicle (EV) terms and standards for Electric Vehicle Charging Stations (EVCS) and Electric Vehicle Supply Equipment (EVSE) to ensure safety, accessible locations, aesthetics, and effectiveness. The model includes standards for municipalities to permit EVCS in parking lots and in the right-of-way on existing poles and encourages EVCS by providing requirements for the installation of charging infrastructure during construction.

Electric vehicles and electric vehicle charging are a technology that is constantly evolving. Governments at all levels are facing a moving target as they try to develop standards to adapt to and regulate vehicles and charging facilities. This model ordinance is based on technology and knowledge available at the time. For instance, the Pennsylvania General Assembly is considering two bills, dated April 2023, which address an amendment to the Pennsylvania Construction Code for EVCS and parking regulations. Municipalities should be aware of adoption of any laws or regulations which may preempt local ordinances.

This model ordinance is provided as a guide and is intended to be a starting point. Municipalities are encouraged to review and adapt this ordinance as applicable to their unique municipal requirements. The BCPC welcomes comments on the model ordinance. Comments should be submitted to the following email address: planningcommission@buckscounty.org.

Purpose

To encourage, support, and provide regulatory standards for publicly accessible electric vehicle charging facilities and ensure that they are safe, effective, and fit within the context of their surroundings.

Applicability

1. The provisions of this ordinance shall apply to all public EVCS and EVSE that are proposed to be constructed after the effective date of this ordinance.
2. Private energy and utility providers shall comply with all provisions established by the Public Utility Commission and the Public Utility Code, 66 Pa. C.S. §101 *et seq.*
3. Private electric vehicle charging infrastructure shall be required to comply with all applicable local building permitting requirements and shall be used only by the owners, tenants, and their guests.
4. EVCS and EVSE constructed prior to the effective date of this ordinance shall not be required to meet the requirements specified under this ordinance. Any physical modification to an existing EVCS or EVSE that alters the size, quantity, or type of system shall require a new permit and shall comply with the applicable provisions specified under this ordinance.

Definitions

ELECTRIC VEHICLE (EV)—Any motor vehicle, including automobiles, trucks, and motorcycles, licensed and registered for operation on public and private highways, roads, and streets that can operate solely or partially on the power of a rechargeable battery or battery pack (or other storage device that receives electricity from an external source, such as a charger) and meets the applicable state and federal motor vehicle safety standards and registration requirements. Electric vehicles include, but are not limited to, all-electric vehicles, plug-in hybrid electric vehicles (PHEV), also known as a plug-in EV.

MOTORIZED PEDALCYCLE, MOTORIZED SCOOTER—Any wheeled vehicle that operates exclusively on electrical energy that is stored in the vehicle's batteries and produces zero emissions or pollution when stationary or operating. These vehicles are not licensed or registered for on-road use.

Comment: Defined to allow different treatment for parking and charging. Electric scooters and bicycles should be charged at home with Level 1 and 2 equipment. Higher capacity EVCS may damage other types of vehicles.

ELECTRIC VEHICLE CHARGING STATION (EVCS)—Battery charging station equipment with an associated parking space that is publicly accessible and has as its primary purpose the transfer of electric energy (by conductive or inductive means) to a battery or other energy storage device in an electric vehicle. An EVCS may contain several charging ports/points to charge more than one EV at a time.

ELECTRIC VEHICLE PARKING SPACE—Any marked parking space that identifies the use to be exclusively for the parking of an electric vehicle.

Comment: While this term is not used other than in this ordinance, it provides the potential for a parking space to be designated as such by a private company as an incentive for electric vehicles, even if charging equipment is not provided.

ELECTRIC VEHICLE SUPPLY/SERVICE EQUIPMENT (EVSE)—Any device that enables the safe transfer of energy between the local power supply grid and an electric vehicle. EVSE includes all the components for electric vehicle charging stations, including: the conductors; the ungrounded, grounded, and equipment grounding conductors; electric vehicle connectors; attachment plugs, software and all other fittings, devices, power outlets, induction plates or apparatus installed specifically for the purpose of delivering energy from the electric supply grid to an electric vehicle. EVSE may deliver either alternating current or direct current electricity (consistent with fast-charging equipment standard).

LEVEL 1 CHARGER—AC Level 1 equipment provides charging through a 120 volt (V) AC plug. Charging converts AC to DC for the battery within the vehicle itself.

Comment: Most, if not all, EVs will come with a portable Level 1 cord set, so no additional charging equipment is required. Level 1 charging provides approximately 5 miles of range per 1 hour of charging.

LEVEL 2 CHARGER—AC Level 2 offers charging through 240 V (typical in residential applications) or 208 V (typical in commercial applications) electrical service. Charging converts AC to DC for the battery within the vehicle itself.

Comment: Most homes have 240 V service available, and because Level 2 equipment can charge a typical EV battery overnight, EV owners commonly install it for home charging. Level 2 equipment is also commonly used for public and workplace charging. Level 2 charging provides approximately 25 miles of range per 1 hour of charging.

LEVEL 3 DIRECT CURRENT FAST CHARGING (DCFC)—An industrial grade electrical outlet (208 V or 480 V) that allows for faster recharging of electric vehicle batteries through higher power levels. Equipment (typically a three-phase AC input) enables rapid charging and is usually found along heavy traffic corridors. DC fast chargers convert AC to DC within the charging station and then supply charge directly to the battery.

Comment: DC Fast Charging provides approximately 80 percent charge in 15-45 minutes. 480 V capacity is not installed in residential areas due to cost and the need for a location close to a transformer. The Tesla Supercharger is an example of a Level 3 charger.

ELECTRIC VEHICLE (EV) READY—Pre-wired electrical infrastructure to facilitate easy and cost-efficient future installation of EVSE, including, but not limited to, Level 2 EVSE and Level 3 DCFC. EV-Ready includes service panels, junction boxes, conduit, wiring, and other components necessary to make a particular location able to accommodate EVSE. Also known as Make Ready.



Figure 1. EV-Ready Infrastructure

Electric Vehicle Charging Station Use Regulations

Use X. Electric Vehicle Charging Station (EVCS)—A publicly-accessible vehicular parking space and associated vehicle charging equipment located on any tract or parcel. EVCS shall be permitted in connection with any permitted use subject to the following conditions:

1. General standards

- a. Standards of the Pennsylvania Department of Labor and Industry shall be met, and proof of compliance shall be submitted to the municipality.
- b. An electric vehicle charging station is permitted as an accessory use to a commercial, industrial, or institutional use and shall be Level 2 or 3 (DCFC).
- c. Privately-owned and operated EVCS with access restricted to authorized persons are exempt from the standards of this ordinance but shall be installed by a qualified professional and shall meet all other local, state, and federal regulations.

2. Access and Location

- a. EVCS parking spaces shall be paved and meet or exceed the required parking space size in accordance with *<Section __ of the subdivision and land development ordinance>* and be demarcated by paint and signage.
- b. EVCS shall be located in the same lot as the principal use.
- c. EVCS in parking lots shall be located where the equipment does not block sight triangles at aisles and intersections.
- d. When only one EVCS is provided, it shall be accessible for people with disabilities in accordance with ADA parking standards. When more than one EVCS is provided, at least one EVCS shall be ADA accessible.
- e. ADA Accessible EVCS shall connect to an accessible route to the principal buildings on the same site.
- f. The EVCS shall be located in desirable and convenient parking locations that will serve as an incentive for the use of electric vehicles.
- g. Canopies, solar panels, structures, awnings, and supports over charging stations shall not impede access to EVSE and shall comply with all other applicable codes and regulations
- h. EVCS shall not be located in areas prone to standing water and flooding.

3. Safety and Construction

- a. Pedestal, pole, and wall-mounted charging stations may have electronic informational screens displaying operational information not to exceed 64 square inches. Screens larger than 64 square inches shall be considered a sign and must comply with all applicable sign regulations in *<Section __, Signs, of the zoning ordinance>*.
- b. The following information shall be posted at all electric vehicle charging stations to allow for maintenance and notification:
 - 1) Contact information for reporting when the equipment is not operating, not accessible, or other problems.
 - 2) Voltage and amperage levels
 - 3) Hour of operations if time limits or towaway provisions are to be enforced by the property owner.
 - 4) Usage fees
 - 5) Safety information
 - 6) Geographic location, date of installation, equipment type and model
 - 7) In case of an emergency 911 shall be called
- c. EVSE outlets and connector devices shall be no less than 36 inches and no higher than 48 inches from the ground or pavement surface where mounted.
- d. The EVCS shall contain a connector cord management device to minimize the potential for cord entanglement, user injury, or cord damage. Cords shall be retractable or have a place to hang the connector cord above the ground or pavement surface. Any cords connecting the charger to a vehicle shall be configured so that they do not cross a driveway, sidewalk, ADA accessible route, or passenger unloading area.
- e. EVSE must meet the National Electrical Code® (NEC®) Article 625 (or as amended) standard for installation of electric vehicle charging systems, and installation shall be by a qualified professional and shall meet all other local, state, and federal regulations.
- f. An annual safety inspection shall be undertaken by a certified professional electrical inspector and a report submitted to the municipal code inspector.

- g. Equipment mounted on pedestals, lighting posts, bollards, or other devices shall be designated and located to not impede fire hydrants, exterior fire sprinkler connections, pedestrian travel, create trip hazards on sidewalks, or impede snow removal.
- h. EVCS shall have charging equipment compatible with all electric vehicle models.
- i. EVCS and parking spaces shall be illuminated for identification and safety in accordance with *<Section __ of the subdivision and land development ordinance>* if charging is offered during nighttime hours.
- j. EVCS shall be separated from charging spaces by 3 to 4 feet high bollards with concrete footings placed to protect the EVSE from accidental impact and to prevent damage from snow removal equipment. Non-mountable curbing may be used in lieu of bollards if the EVSE is set back a minimum of 24 inches from the face of the curb.
- k. If a publicly accessible EVCS becomes inoperable, signage shall be placed on the EVCS indicating it is out of service and notice shall be indicated on the provider's website and software application.
- l. EVCS must be designated for EV parking. Where EVCS are part of a convenience commercial use (such as a gas station and convenience store), the EV parking spaces may be used by EVs or non-EVs subject to a time limit at the discretion of the property owner.
- m. EVCS spaces shall be paved and meet the required standard parking space size and construction standards in accordance with *<subdivision and land development Section __>* and be designated by paint and signage.

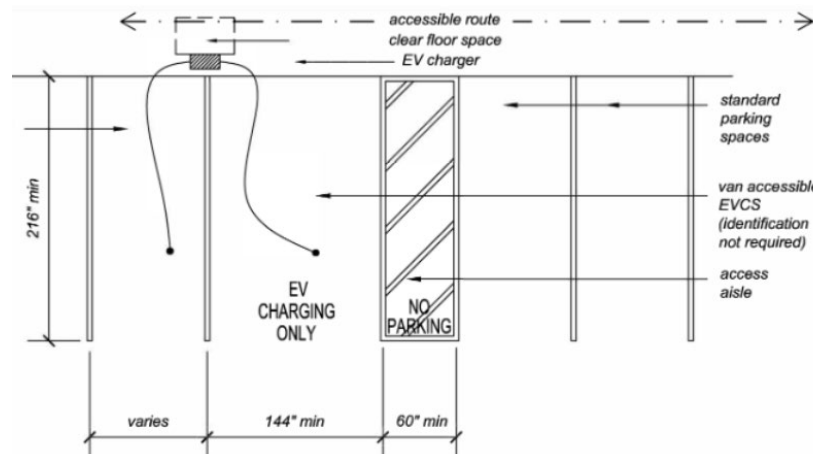


Figure 2. Sample EVCS Parking Space Configuration

- n. Any canopy covering charging equipment shall meet all setback requirements and the total height of any overhead canopy shall not exceed 20 feet.
- o. Prior to installation, a security may be required to cover the cost of decommissioning and removal of an EVCS that is abandoned. When an EVCS is no longer functioning or maintained it shall be removed by the property owner or EVCS operator if the EVCS is abandoned. An EVCS shall be considered abandoned when it has not been operating for 6 months or more.

4. Signs

- a. All signage on EVCS and EVSE shall meet the requirements of *<Section __, Signs, of the zoning ordinance>*.
- b. Publicly accessible EVCS shall have posted regulatory signs, as identified in this section, allowing only charging electric vehicles to park in such spaces. For purposes of this section, charging means that an electric vehicle is parked at an EVCS and is connected to the EVSE. If time limits or vehicle

removal provisions are to be enforced, regulatory signs, including parking restrictions, shall be installed immediately adjacent to and visible from the EVCS.

- c. All regulatory signs shall comply with visibility, legibility, size, shape, color, and reflectivity requirements contained within the *Manual on Uniform Traffic Control Devices for Streets and Highways*, as published by the Federal Highway Administration.
- d. Wayfinding or directional signs, if necessary, shall be permitted at appropriate decision points to effectively guide motorists to the EVSE parking spaces. Wayfinding or directional signage shall be placed in a manner that shall not interfere with any parking space, drive lane, or exit.

5. **EVSE in the Municipal Right-Of-Way**

Comment: Curbside ground mounted chargers are expensive due to high installation costs, invasive construction, and locational constraints. Pole mounted chargers (PMC) on utility or streetlight poles in the right-of-way provide installation and overall cost reductions due to use of existing electrical connections and lower construction, material, and labor costs. PMCs can be easily located wherever poles exist and streetside public location may be more equitable and accessible for all. Installation is quicker and less costly. Capacity increases are available after streetlighting is updated to LEDs.

- a. EVCS in the right-of-way shall be no farther horizontally than 10 inches from the face of a curb.
- b. Charging spaces in the right-of-way shall be designated with time limitations for charging.
- c. EVCS in the right-of-way shall be accessible for people with disabilities in accordance with ADA standards.
- d. EVCS signage in the right-of-way shall meet ADA requirements for sidewalk accessibility.

6. **Usage Fees**

Nothing in this ordinance shall be deemed to preclude a private owner/designee of an EVSE from collecting a fee for the use of the EVCS, in accordance with applicable state and federal regulations. Fees shall be clearly posted on the EVCS or posted at or adjacent to the EVSE parking space.

7. **Providing EV Infrastructure**

EVCS and EV-Ready infrastructure installation may be required by the zoning ordinance or encouraged by incentive bonuses. Requiring new development to provide EVCS or EV-Ready equipment will provide charging for new employees or residents on premises. Permitting a reduction in the number of required parking space numbers may serve as an incentive for providing EVSE and EVCS. Streamlining approval by providing administrative review will expedite approval.

a. **EV-Ready EVSE**

Municipalities may consider amending the zoning ordinance to require or provide incentives for the installation of EV-Ready infrastructure at new residential and nonresidential developments during construction. EV-Ready infrastructure alone does not create new charging opportunities, but addressing this need during the design and construction phase dramatically reduces the cost of installing chargers in the future. Redevelopment also provides an opportunity for municipalities to require prewiring or actual station installation.

For proposed development of multifamily dwellings, mixed-use development, commercial and industrial uses, the developer or owner may be required to provide a percentage of the required off-street parking spaces as EV-Ready parking spaces and install Level 2 EVCS in at least a portion of EV-Ready parking spaces. A specific number of EVCS or EV-Ready parking spaces should be required for people with disabilities and constructed at the first phase of EVCS provision. EV-Ready parking spaces may be provided at a faster or more expansive rate than as required above.

New Jersey has EVCS minimum requirements, and the Pennsylvania General Assembly is considering requirements.

b. Parking Requirement Incentives

A municipality may consider whether EV parking should count toward overall parking requirements if it has minimum parking requirements. Allowing EV parking to count toward parking requirements is recommended since it encourages developers to provide EV parking without increasing the total number of spaces required and reduces impervious surfacing. The municipality may also consider allowing each designated EV space to count as multiple parking spaces toward meeting off-street parking requirements.

- 1) All parking spaces with EVCS and EV-Ready equipment may be included in the calculation of minimum required parking spaces, pursuant to <Section __, Parking Requirements>.
- 2) A parking space prepared with EVCS or EV-Ready equipment may count as at least two parking spaces for the purpose of complying with a minimum parking space requirement. This shall result in a reduction of no more than 10 percent of the total required parking.
- 3) All parking space calculations for EVCS and EV-Ready equipment shall be rounded up to the next full parking space.

c. Streamlined review and approval.

To expedite and simplify approval of EVCS and EV-Ready infrastructure, adherence to specific zoning requirements by installers will eliminate the need for planning commission review. The granting of a zoning permit by the zoning officer will streamline review and approval for EV equipment. Streamlining approval will also save time and money for the EVSE provider and facilitate provision of chargers.