

ELECTRIC VEHICLE CHARGING REGULATIONS

Proposed Amendment to Durham Site Plan Regulations

Prepared by the Durham Energy Committee
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****ROUGH DRAFT****

Article 4A. Electric Vehicle Charging

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Section 4A.1 Purpose

The purpose of this article is to facilitate and encourage the use of electric vehicles and to expedite the establishment of convenient, cost-effective electric vehicle infrastructure.

In accordance with the Final Recommendations of the N.H. Electric Vehicle Commission (established via Senate Bill 517, adopted in 2018 legislative session); “...encouraging the use of electric vehicles (EVs) in New Hampshire will support economic development in areas of the state dependent on tourism, lower lifetime costs of owning a vehicle for many drivers, and result in lower emissions of criteria pollutants and greenhouse gas emissions that contribute to climate change...The state and municipalities should encourage the installation of charging infrastructure in single family residential, multi-family residential, workplaces, public garages, and municipal locations.”

This article establishes minimum requirements for such infrastructure necessary to serve both long-term and short-term EV charging needs and identifies where such infrastructure is permitted.

It is acknowledged that EV technology and charging station standards are evolving and this article should be reviewed periodically. The Planning Board should use discretion in applying these regulations if evidence suggests newer standards or technology are more appropriate.

Section 4A.2 Definitions

ELECTRIC VEHICLE (EV). A vehicle registered with the State Department of Motor Vehicles primarily powered by an electric motor, including any battery electric vehicle, fuel

cell electric vehicle, or plug-in hybrid electric vehicle, that draws current from an onboard battery charged through an EVSE or other site electrical service.

ELECTRIC VEHICLE CHARGING STATION (EVCS) LEVELS. Charging station levels refers to standardized indicators of electrical force, or voltage, at which an electric vehicle's battery is recharged by the charging station. The terms 1, 2, and 3(DC), are the most common charging levels, and include the following specifications:

Level 1 - provides charging through a 120-volt (V), alternating-current (AC) plug. Level 1 is considered as slow charging. Level 1 charging equipment is standard on vehicles and therefore does not require the installation of charging equipment. The most common place for Level 1 charging is at the vehicle owner's home and is typically conducted overnight.

Level 2 - provides charging through a 240V (residential) or 208V (most commercial), AC plug and requires installation of home charging or public charging equipment. These units require a dedicated 40-amp circuit. Level 2 chargers are commonly found in residential settings, public parking areas, places of employment and commercial settings.

Level 3 DC Fast Charger (DCFC) - provides charging through a 480V (or higher), direct-current (DC) plug. Due to their high cost and extremely high-power draw, Level 3 chargers are typically found in commercial or public locations rather than residential.

ELECTRIC VEHICLE INFRASTRUCTURE. Structures, machinery, and equipment necessary and integral to support an electric vehicle, including EV charging stations and electrical outlets.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) / EV Charging Station.

Equipment for plug-in power transfer, including ungrounded, grounded and equipment grounding conductors; electric vehicle connectors; attached plugs; any personal protection system; and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

ELECTRIC VEHICLE (EV) -PREPARED SPOT. An off-street parking spot with electrical panel capacity and room in the panel for a branch circuit dedicated to the parking spot that is at least 40-ampere and 208/240-volt and equipped with code-compliant pathways to the perimeter of the structure that will enable the future installation of EVSE. For two adjacent EV-prepared spots, a single branch circuit is permitted.

ELECTRIC VEHICLE (EV) -READY SPOT. An off-street parking spot provided with a full dedicated branch circuit that includes at least 40-ampere and 208/240-volt panel capacity, conduit or raceways, wiring, receptacle, and overprotection devices terminating in an outlet, receptacle or junction box that will support an installed EVSE and which is located in close proximity to the location of the parking spot. For two adjacent EV-ready spots, a single branch circuit is permitted. These spots are “ready to go” with the addition of an EV charging station (EVSE).

ELECTRIC VEHICLE SUPPLE EQUIPMENT (EVSE) - INSTALLED SPOT. An off-street parking spot with a dedicated branch circuit and an EVSE for Level 2 EV charging stations, at minimum.

Section 4A.3 Applicability

1. The requirements for providing EV charging stations in this Article apply to the following:
 - a. New buildings, development or construction projects that are subject to Durham site plan review;
 - b. Any renovation of an existing structure or building that is subject to site plan review and where the permit involves “Substantial Improvement” to an existing building. Substantial Improvement as used herein shall be any combination of repairs, reconstruction, alteration or improvements to a structure in which the cumulative cost equals or exceeds 50 percent of the market value of the structure (as defined in the Durham Zoning Ordinance Article XV, Flood Hazard Overlay District section, 175-77 definitions).
 - c. Creation of a new parking spot or resurfacing of a driveway or parking lot where removal of parking surface materials occurs down to the erodible subsurface, and the site is zoned and used as multi-family, commercial or other nonresidential property.
2. Where a site plan application is for a portion of an existing site, the required EV infrastructure will be calculated using the total number of parking spots across the entire site.

Section 4A.4 Number of Prepared and Installed Spaces

1. EVSE-installed spots, EV-ready spots, and EV-prepared spots shall be provided based upon a designated percentage of the parking spaces required as part of the site plan for any project reviewed by the Planning Board. In the event that the site plan includes

allowance for use of any leased or non-owned parking spaces as a condition of the site plan approval, the Planning Board will designate the percentage of spaces and how the applicant will meet the intent of providing EV installed, ready or prepared charging spots. For each use and zoning type the percentage of the required parking spaces to be equipped with Electric Vehicle Infrastructure is described below in sections D, 2 through 6. In mixed-use development this regulation anticipates that the Planning Board will prorate required parking spaces based on respective required numbers of spaces by development type.

2. **Multi-Unit Dwellings.** Where the following calculations result in a fractional EV charging parking spot, it shall round half up to the next whole number. Multi-Unit dwellings include 55+ age restricted housing developments. Parking for multi-unit dwellings shall include:
 - a. **For new construction:**
 - i. EVSE installed spots for a minimum of **5%** of site plan approved parking spots.
 - ii. EV-ready spots for a minimum of **10%** of site plan approved parking spots.
 - iii. EV-prepared spots for a minimum of **15%** of site plan approved parking spots.
 - b. **For renovation of existing construction**
 - i. EVSE installed spots for a minimum of **5%** of site plan approved parking spots.
 - ii. EV-ready spots for a minimum of **5%** of site plan approved parking spots.
 - iii. EV-prepared spots for a minimum of **10%** of site plan approved parking spots

3. **Institutional Senior Housing**

For Licensed Nursing Homes and Licensed Residential Care (Assisted Living) Facilities This article applies to these housing types based only upon calculated parking spaces required for employees.

For Licensed Continuing Care Retirement Communities (CCRC) and other Independent Living Facilities This article applies to these housing types based upon calculated parking spaces required for employees and independent living residents of the community.

Where the following calculations result in a fractional parking spot, it shall round half up to the next whole number.

a. For new construction:

- i. EVSE installed spots for a minimum of **3%** of site plan approved parking spots.
- ii. EV-ready spots for a minimum of **10%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **15%** of site plan approved parking spots.

b. For renovation of existing construction:

- i. EVSE installed spots for a minimum of **2%** of site plan approved parking spots.
- ii. EV-ready spots for a minimum of **5%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **10%** of site plan approved parking spots.

4. **Hotels, Motels and Bed & Breakfast Lodging:** This article applies to these construction types based only upon calculated parking spaces required for guest parking. Any required Employee parking spots are excluded. Where the following calculations result in a fractional parking spot, it shall round half up to the next whole number.

a. For new construction:

- i. EVSE installed spots for a minimum of **3%** of site plan approved parking spots.
- ii. EV-ready spots for a minimum of **10%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **15%** of site plan approved parking spots.

b. For renovation of existing construction:

- i. EVSE installed spots for a minimum of **2%** of site plan approved parking spots.

- ii. EV-ready spots for a minimum of **5%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **10%** of site plan approved parking spots.

5. Commercial, Retail and Other Institutional Construction (This includes but is not limited to rooming or boarding houses, fraternities, sororities, auditoriums, theaters, churches, restaurants, retail stores and food establishments, manufacturing uses, research and other industries.)

This ordinance applies to these construction types based only upon calculated parking spaces required for employees. Site plan applicants will provide a good faith estimate of the maximum number of employees to be present on the highest staffed work shift. Such estimate shall be reasonably consistent with any relevant published industry staffing standards for the type of use seeking approval. Where the following calculations result in a fractional parking spot, it shall round half up to the next whole number.

a. For new construction:

- i. EVSE installed spots for a minimum of **3%** of site plan approved parking spots.
- ii. EV-ready spots for a minimum of **10%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **15%** of site plan approved parking spots.

b. For renovation of existing construction:

- i. EVSE installed spots for a minimum of **2%** of site plan approved parking spots.
- ii. EV-ready spots for a minimum of **5%** of site plan approved parking spots.
- iii. EV-prepared spots for a minimum of **10%** of site plan approved parking spots.

7. Permitted Substitutions:

- a. Up to **five** Level 2 EV-installed spots may be substituted with **one** Level 3 EV-installed spot (minimum 50kW).

- b. Where the number of EVSE-installed spots provided exceeds the minimum required, the excess spots shall be deducted from the total number of required EV-ready spots.
 - c. Where the number of EV-ready spots provided exceeds the minimum required, the excess EV-ready spots shall be deducted from the total number of required EV-prepared spots.
- 8. EVSE-installed spots, EV-ready spots, and EV-prepared spots are to be included as off-street parking spots in the calculation for both the number of minimum required and maximum permitted off-street parking spots.
- 9. Every **two** EVSE-installed spots provided in addition to the required minimum may be counted as **four** off-street parking spots as relates to *Durham Site Plan Regulations Article 10. Parking and Circulation Standards*, for a reduction of total required parking not greater than **10%** of the total amount of required parking.
- 10. These requirements may be revised upward or downward by the Planning Board as part of an application for a Conditional Use Permit or Planned Unit Development based on verifiable information pertaining to parking needs.

Section 4A.5 Design of Charging Stations

- 1. **Size.** A standard size parking space shall be used for an electric vehicle charging station where such a station is required or planned.
- 2. **Equipment Standards and Protection.** Where provided, parking for electric vehicle charging purposes shall meet the standards of (a) through (d) below.
 - a) **Clearance.** Charging station equipment mounted on pedestals, light posts, bollards or other devices shall be setback a minimum of 24 inches clear from the face of curb.
 - b) **Charging Station Equipment.** Charging station outlets and connector devices shall be no less than 36 inches or no higher than 48 inches from the top of surface where mounted. They shall be designed and located as to not impede pedestrian travel or create trip hazards on sidewalks, particularly when power cords are connected to vehicles. NOTE: Power cord connector plug technology has been an evolving technology with changing standards. Installers should verify the proper plug for intended use.

c) **Charging Station Equipment Protection.** When the electric vehicle parking space is perpendicular or at an angle to curb face and charging equipment, adequate equipment protection, such as wheel stops or concrete-filled steel bollards shall be used.

d) **Maintenance.** Charging station equipment shall be maintained in all respects, including the functioning of the charging equipment. A phone number or other contact information shall be provided on the charging station equipment for reporting when the equipment is not functioning or other problems are encountered.

3. **Location within a parking lot or structure.** The applicant and Planning Board should consider among other elements distance from electric power panel sources, ability to expand charging stations numbers based on future demand, visibility for security and ease of locating the station in the lot. Consideration should include access for maintenance of the equipment and protection from snow removal operations. Specific considerations by the Fire Department may include access for firefighting, avoiding proximity to building egress pathways and, for Level 3 DCFC chargers, any proposed placement in parking structures or underground parking garages.

4. **Signage.** Electric vehicle charging stations, other than in residential use, shall have posted signage allowing only charging electric vehicles to park in such spaces. For the purposes of this subsection, “charging” means that an electric vehicle is parked at an electric vehicle charging station and is connected to the charging station equipment. Signage for parking of electric vehicles shall include information on the charging station to identify voltage and amperage levels and any time of use, fees, or safety information.

5. **Time limits.** Limits may be placed on the number of hours that an electric vehicle is allowed to charge, prohibiting indefinite charging/parking. If applicable, warnings shall be posted to alert charging station users about hours of use and possible actions affecting EVCSs that are not being used according to posted rules.

6. **Hours.** The EVCS must be operational during the normal business hours of the use(s) that it serves. EVCS may be de-energized or otherwise restricted after normal business hours of the use(s) it serves.

7. **Usage Fees.** A property owner or operator is not restricted from collecting a service fee for the use of an Electric Vehicle Charging Station made available to users.

8. **Accessibility.** Where electric vehicle charging stations are provided in parking lots or parking garages, excluding garages in single-family or two-family residential units, at least one accessible electric vehicle charging stations shall be provided when seven or more operating EVCS are installed.