EV CHARGING INFRASTRUCTURE REQUIREMENTS FOR NEW CONSTRUCTION

Note: The EV Charging Infrastructure Requirements listed in this guidance document only apply to new construction projects that submit a building permit application* ***on or after July 1, 2025***.**

The purpose of this document is to provide information for owners/applicants, designers and builders of new developments seeking to meet the District's EV charging infrastructure requirements. Please see the District's Zoning Bylaw for complete EV charging requirements and definitions.

Summary of EV Charging Infrastructure Requirements

	Percentage of parking spaces capable of providing Level 2 EV charging (or higher)	**Load management** (e.g. via an EVEMS)
Residential	100% of parking spaces (including accessible parking and excluding visitor parking).	✓ Permitted
	100% of residential parking spaces designated for use by a car sharing organization*	✓ Permitted
Tourist accommodation (Hotel)	100% of parking spaces.	✓ Permitted
	A minimum of 45% of accessible parking spaces, or at least one accessible parking space, whichever is greater.	✓ Permitted
	100% of residential parking spaces designated for use by a car sharing organization. *	✓ Permitted
All uses other than residential and tourist accommodation	A minimum of 35% of parking spaces.	✓ Permitted
	A minimum of 10% of parking spaces to support short duration 'opportunity charging' (minimum 40A dedicated electrical circuit) in addition to the 35% noted above.	✗ Not permitted (opportunity charging)
	A minimum of 45% of accessible parking spaces, or at least one accessible parking space, whichever is greater.	✓ Permitted
	100% of parking spaces designated for use by a car sharing organization*	✓ Permitted

** Parking spaces designated for use by a car sharing organization are to be equipped with a fully installed, operating and networked Level 2 EV charger.*

Definitions:

Electric Vehicle means a vehicle that uses electricity for propulsion and that can use an external source of electricity to charge the vehicle's batteries.

Electric Vehicle Energy Management System means a system used to control electric vehicle supply equipment loads through the process of connecting, disconnecting, increasing, or reducing electric power to the loads and consisting of any of the following: a monitor(s), communications equipment, a controller(s), a timer(s), and other applicable device(s).

Electric Vehicle Supply Equipment means equipment to deliver charging and includes the complete assembly, consisting of conductors, connectors, devices, apparatus, and fittings installed specifically for the purpose of power transfer and information exchange between a branch electric circuit and an electric vehicle.

Energized Outlet means a connected point in an electrical wiring installation at which current is taken and a source of voltage is connected to supply utilization equipment. An energized outlet may be either a junction box for permanent connection or a receptacle.

Level 2 Charging means a Level 2 Electric Vehicle charging level as defined by SAE International's J1772 standard.

Charge Method	**Nominal Supply Voltage** (V)	**Max Current** (Amps-continuous)
AC Level 2	280V to 240V AC, 1 phase	<80A

Opportunity Charging means Level 2 Charging (or higher) for an Electric Vehicle supported by a minimum 40 Amp, dedicated electrical circuit for each Parking Space.

Opportunity charging supported by a dedicated electrical circuit allows for higher power output compared to charging supported by shared electrical outlets. Opportunity charging is ideal in non-residential locations with shorter dwell times where users can receive a faster charge in less time as opposed to residential locations with longer dwell times where shared charging can be appropriate.

Implementation:

Residential Developments

Part 9 Residential Buildings with Private Parking Spaces

Ground-oriented residential dwellings (single family dwellings, secondary suites, coach houses, multi-plexes and most townhomes), typically feature on-site parking spaces exclusive to a dwelling unit. These parking spaces are typically in a garage, carport, or non-enclosed parking area.

To meet the District's requirements, these parking areas must feature Level 2 energized outlets or higher, such that an Electric Vehicle Supply Equipment (EVSE) device (i.e. EV charging station) wired into the outlet for a given space could easily reach the charging ports of a vehicle parked in that space.

One electrical circuit can provide power to multiple outlets serving multiple parking spaces, provided that the **minimum performance standard** for each parking stall is met (see below). One energized outlet can serve multiple vehicles in adjacent parking spaces that are associated with the same housing unit, for example, to power dual head EVSE in a two-vehicle garage, if the minimum performance standard is met for each parking space. In cases where outlets must be installed outside to serve outdoor parking spaces, weatherproof enclosures should be used. The requirements do not apply to an interior renovation to construct a secondary suite that does not result in new additional floor area being added to the site.

Part 3 Buildings with Common Parking Areas (including Hotel Parking spaces)

Apartments and some townhouses typically feature shared parking areas. Each residential parking stall, excluding visitor parking, must feature an energized outlet capable of providing Level 2 charging.

Minimum Performance Standard:

The system must be capable of supplying a minimum performance level of 12 kWh per parking space over an eight (8) hour period, assuming that all parking spaces are in use by a charging EV.

Two strategies may be used to meet the requirements:

1. **Dedicated Circuits**

   Projects can meet the requirement by providing a dedicated circuit capable of providing Level 2 charging to an outlet at each parking stall.

2. **EV Energy Management System (EVEMS)**

   EVEMS refers to a variety of technologies that can control the electrical load associated with charging EVs. EVEMS refers to a system used to control EV supply equipment loads through the process of connecting, disconnecting, increasing, or reducing electric power to the loads. These systems are also variously referred to as load sharing, load management, smart charging, etc. Many EVEMS for multifamily developments entail multiple EVSE connected to one electrical circuit, with EVSE with communications capabilities able to control their collective load so as not to exceed the capacity of a circuit. Designing for EVEMS can reduce the load for which the building electrical systems must be constructed, thereby lowering cost relative to dedicated circuits. If this strategy is used, the developer must install all communications infrastructure (e.g. cellular repeaters) necessary for the EV energy management system to function. Section 8 of the 2021 edition of the Canadian Electrical Code recognizes the use of EVEMS.

   Projects implementing EV energy management systems must provide for communications technology necessary for the function of an EV energy management system (e.g. cellular, wireless, or cabled infrastructure).

   The intent of the performance standard is to ensure sufficient electricity is available to EV drivers to ensure a reasonable rate of overnight charging. A variety of electrical infrastructure configurations can meet this performance standard. One configuration is to provide four (4) or fewer outlets on a 208V 40A circuit.

Note: *Effective March 4, 2025 the Canadian Electrical Code, Part I, 26th Edition, Safety Standard for Electrical Installations, Canadian Standards Association (CSA) Standard C22.1-24 will be adopted as the BC Electrical Code. CSA notes that in the Canadian Electrical Code, 2024 Edition load calculations for installations with electric vehicle supply equipment have been revised in Section 8 and simplified through the deletion of Table 38.*

Non-residential Developments:

Employee, customer, residential visitor and unclassified parking spaces, typically feature common parking areas. These parking areas can be enclosed, non-enclosed, or mix of both.

General Requirement:

A minimum of 10% of parking spaces or one parking space, whichever is greater, are to have an energized outlet capable of level 2 EV charging (or higher) supported by a minimum 40A, dedicated electrical circuit.

An additional 35% of parking spaces shall have EV charging infrastructure installed capable of supplying a minimum performance level of 12 kWh per parking space over an eight (8) hour period. EVEMS may be used to meet the requirement.

EVSE in car sharing spaces: The requirement for applicants to install EVSE (EV charging station) in parking spaces designated for use by a car sharing organization may be waived if a formal letter is submitted by the car sharing organization and to the satisfaction of the District confirming that they will install EVSE.

Additional Requirements

Development and Building Permit Application Requirements

Plans submitted for Development Permit applications and Building Permit applications must indicate an energized outlet at all applicable stalls under this requirement.

Metering: In buildings with shared parking areas, EV electrical infrastructure should be metered separately from the common areas, so that stratas, buildings owners, and BC Hydro can distinguish between common area electrical usage and EV charging electrical usage.

Labelling: EV parking stalls shall be labelled as intended for use for electric vehicle charging.

Effective Date

The requirements apply to any new construction projects that submit a building permit application on or after July 1, 2025.

Exemptions

Exemptions from the EV charging requirements are listed below:

1. Projects in accordance with previous EV charging provisions for which a Development Permit has been issued by Council prior to the effective date of bylaw amendments on July 1, 2025, if the applicant submits a complete Building Permit application during the period in which the Development Permit is valid.
2. Projects that have submitted a complete and valid building permit application prior to the effective date of bylaw amendments on July 1, 2025.

Additional Information and Resources

B.C. passed legislation on May 11, 2023, to enable strata corporations to more easily install electric vehicle (EV) charging. More information about this legislation along with helpful links for EV charging in strata corporations can be found here: Electric vehicle charging in strata corporations - Province of British Columbia (gov.bc.ca)

The City of Richmond commissioned a report that profiles a variety of EV energy management system configurations, including commentary on their benefits, limitations, applications, and BC Electrical Code compliance considerations. The report is available here: Electric Vehicle Charging Infrastructure in Shared Parking Area

Technical Safety BC Information Bulletin has an information bulletin on: Electric Vehicle Supply Equipment (EVSE) and Electric Vehicle Energy Management Systems (EVEMS) INFORMATION BULLETIN (contentstack.io)

Questions?

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