

# **ELECTRIC VEHICLE INFRASTRUCTURE REQUIREMENTS FOR NEW DEVELOPMENTS**

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## **TECHNICAL BULLETIN**

### **Contents**

<b>1.</b>	<b>Purpose.....</b>	<b>1</b>
<b>2.</b>	<b>Background .....</b>	<b>1</b>
<b>3.</b>	<b>Definitions .....</b>	<b>1</b>
<b>4.</b>	<b>Requirements.....</b>	<b>2</b>
	4.1. Residential.....	2
	4.2. Institutional, Commercial and Industrial .....	2
<b>5.</b>	<b>Energized outlets.....</b>	<b>3</b>
<b>6.</b>	<b>Electric Vehicle Energy Management Systems.....</b>	<b>3</b>
<b>7.</b>	<b>Implementation Date and Exceptions .....</b>	<b>4</b>
<b>8.</b>	<b>Permit requirements .....</b>	<b>4</b>
	8.1. Development/Rezoning Permit Application Requirements .....	4
	8.2. Building Permit Application Requirements .....	4
	8.3. Occupancy Permit Requirements .....	5
<b>9.</b>	<b>Contact information.....</b>	<b>5</b>
	<b>Appendix: Copy of Table 7.1 of Zoning Bylaw .....</b>	<b>6</b>

## 1. Purpose

To inform owners, applicants, designers and builders of new residential, institutional, commercial and industrial construction requirements for electric vehicle charging infrastructure.

## 2. Background

Saanich Council has adopted the following Bylaws related to electric vehicle charging infrastructure requirements:

- Zoning Bylaw, 2003, Amendment Bylaw, 2020, No. 9627, which establishes electric vehicle (EV) charging infrastructure requirements for parking in new residential, institutional, commercial and industrial buildings.
- [Electric Vehicle Off-Street Parking Bylaw, 2020, No. 9644](#), which establishes requirements for performance of Electric Vehicle Energy Management Systems and building and occupancy permit requirements.

## 3. Definitions

**Electric Vehicle Supply Equipment or EVSE** – means a 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.

**Electric Vehicle or EV** – 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 or EVEMS** – means a system to control EVSE electrical loads, comprised of monitor(s), communications equipment, controller(s), timer(s) and other applicable devices.

**Energized EV Outlet** – means a connected point in an electrical wiring installation at which sufficient current may be taken to supply Electric Vehicle Supply Equipment.

**Energized Space** – means a vehicle parking space that is equipped with an Energized EV Outlet and, where required under Table 7.1 of the [Zoning Bylaw](#), Electric Vehicle Supply Equipment.

**Level 2 or Level 2 charging** – means a Level 2 electric vehicle charging level as defined by SAE International's J1772 standard, and may include variable rate charging that is controlled by an EVEMS.

## 4. Requirements

### 4.1. Residential

**Intent:** Enable all new residential development to be equipped with electrical infrastructure that facilitates easy and cost-effective access to electric vehicle charging at home.

**Requirement:** Table 7.1 of the [Zoning Bylaw](#) specifies EV infrastructure requirements for various residential building uses. Generally, the requirements are as follows:

Single-Family, Duplex and Townhouse	Multi-Unit Development
<p><b>One on-site parking space per unit must have an energized outlet capable of providing Level 2 charging.</b></p> <p>The addition of a secondary suite or garden suite to an existing development will not trigger this requirement for the existing unit.</p>	<p><b>All off-street parking spaces must have energized outlets capable of providing Level 2 charging, excluding visitor parking.</b></p> <p>A minimum performance standard must be achieved where an EV Energy Management System (EVEMS) is employed.</p>
<p>Electric Vehicle Supply Equipment (EVSE) is not required at the time of development but may be installed post-occupancy by the building or EV owner.</p>	

### 4.2. Institutional, Commercial and Industrial

**Intent:** Increase available public and workplace charging for EV owners on the go or without access to charging at home. For Institutional, Commercial and Industrial (ICI) building types, the installation of some EVSE at time of development is intended to accelerate the public and workplace charging network in the short term.

**Requirement:** Table 7.1 of the [Zoning Bylaw](#) specifies EV infrastructure requirements for various ICI building uses. Requirements range from 0- 5% of required spaces to have energized outlets capable of providing Level 2 charging, with a specified number of these energized spaces having EVSE installed at time of development. A copy of Table 7.1 is provided in the Appendix to this Bulletin. This copy is provided for convenience and applicants are encouraged to verify requirements with Table 7.1 of the Zoning Bylaw in case requirements have changed since publication of this Bulletin.

Minimum performance requirements must be met when an Electric Vehicle Energy Management System (EVEMS) is employed (see section Electric Vehicle Energy Management Systems below).

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

## 5. Energized outlets

Saanich's requirements specify that parking spaces feature an energized outlet capable of providing Level 2 charging. An "energized outlet" means a connected point in an electrical wiring installation at which sufficient current may be taken to supply Electric Vehicle Supply Equipment. An energized outlet can take the form of an outlet box with a cover, or an electrical receptacle of an appropriate configuration (see examples to the right). Energized outlets must be clearly labeled as such.



**Energized outlet:** electric receptacle (6-50R) and outlet box with cover.

*Photo credit: with permission from the City of Richmond.*

## 6. Electric Vehicle Energy Management Systems

In Table 7.1 of the Saanich Zoning Bylaw, "Minimum charging level" refers to the minimum charging level to be provided at each Energized Space, where L2 = dedicated Level 2 circuits, and L2M = Level 2 with energy management allowed.

Where L2 is specified, an Electric Vehicle Energy Management System (EVEMS) is not permitted. Where L2M is specified, an EVEMS is permitted but not required.

Table 1	
Minimum Circuit Breaker Rating (AMPS)	Maximum Number of EVSE Per Circuit
20	1
30	2
40	4
50	5
60	6
70	7
80	8
90	10
100	11
125	14
150	17

Where use of an EVEMS is permitted to fulfill the requirements of Section 7 of the Zoning Bylaw, the maximum number of EVSE that may be connected to the same electrical circuit in the building, for various circuit ratings, is specified in Table 1, Schedule A of the Electric Vehicle Off-Street Parking Bylaw. A copy of this table is provided to the left for convenience. Applicants are encouraged to verify requirements with Table 1, Schedule A of the [Electric Vehicle Off-Street Parking Bylaw](#) in case requirements have changed since publication of this Bulletin.

Additionally, when using an EVEMS to meet the requirements of Section 7 of the Zoning Bylaw, the owner must:

- provide and install all communications equipment, control systems, and other devices required to operate the EVEMS; and
- ensure that all necessary permits, authorizations and variances under the Safety Standards Act, SBC 2003, c. 39, and the Electrical Safety Regulation, BC Reg. 50/2017, have been obtained for the installation and operation of the EVEMS.

Where an EVEMS is implemented, provisions for management and maintenance should be provided to the building owner, strata and/or dwelling unit owner. The following are recommended to be included in strata rules or bylaws, as a minimum:

- The party (strata or dwelling unit owner) responsible for electric vehicle supply equipment purchase and installation is clearly delineated, and appropriate permissions and procedures outlined to ensure accessibility to energized outlets for the purposes of EV charging.
- The electric vehicle supply equipment ownership is defined. Consideration should be given to how the parking space, electrical infrastructure, and supply equipment are defined as common property, fixtures, or chattels.
- Billing rules and procedures are established.
- Designation that where an electric vehicle energy management system is implemented, the electric vehicle supply equipment must be compatible with that electric vehicle energy management system.

Model bylaws are available from pluginbc.ca: <http://pluginbc.ca/resource/strata-bylaw-templates-ev-charging/>

## 7. Implementation Date and Exceptions

The EV infrastructure requirements come into effect on September 1, 2020. They do not apply to a building or development:

- for which an occupancy permit was issued prior to September 1, 2020;
- for which an application for a building permit was submitted in accordance with the requirements of the Building Bylaw, 2019, No. 9529 prior to September 1, 2020; or
- for which an application for a development permit was submitted in accordance with the requirements of the Land Use and Development Procedures Bylaw, 2007, No. 8857 prior to September 1, 2020.

## 8. Permit requirements

Requirements for development/rezoning and building permit applications and for occupancy permits are discussed below. These are summarized visually in Figure 1.

### 8.1. Development Permit/Rezoning Application Requirements

Development permit and rezoning applications must include the following information in the project data table: the number of parking spaces with Level 2 EV Energized Outlets and the number of parking spaces with EVSE (if applicable).

### 8.2. Building Permit Application Requirements

Building permit applications must include a site plan and floor plans that show the location, number and specifications of all Energized Spaces, Energized EV Outlets and Electric Vehicle Supply Equipment required under the Zoning Bylaw.

## 8.3. Occupancy Permit Requirements

Prior to the issuance of an occupancy permit, the owner must provide the building official with a compliance form confirming that the Energized Spaces, Energized EV Outlets and Electric Vehicle Supply Equipment provided in the building meet the requirements of the Zoning Bylaw and Electric Vehicle Off-Street Parking Bylaw.

- In the case of a complex buildings, the compliance form must be certified by a registered professional.
- In the case of a simple building, the compliance form must be certified by a registered professional or qualified electrician.

Compliance forms will be available online after September 1, 2020 at:

<https://www.saanich.ca/EN/main/local-government/inspections-bylaw-services.html>

Development Permit/Rezoning applications	Building Permit applications	Occupancy Permit requirement
Project data table identifies <ul style="list-style-type: none"> <li>• location</li> <li>• number</li> </ul> of all <ul style="list-style-type: none"> <li>• Energized Spaces</li> <li>• Electric Vehicle Supply Equipment</li> </ul> required under Zoning Bylaw	Site plan & floor plans show <ul style="list-style-type: none"> <li>• location</li> <li>• number</li> <li>• specifications</li> </ul> of all <ul style="list-style-type: none"> <li>• Energized Spaces</li> <li>• Energized EV Outlets</li> <li>• Electric Vehicle Supply Equipment</li> </ul> required under Zoning Bylaw	<p><b>Simple Buildings:</b> Compliance Form certified by registered professional or qualified electrician</p> <p><b>Complex Buildings:</b> Compliance Form certified by registered professional</p>

Figure 1: Summary of permit requirements

## 9. Contact information

Questions about the District of Saanich’s EV infrastructure requirements should be directed to Planning at 250-475-5471 or [sustainability@saanich.ca](mailto:sustainability@saanich.ca).

## Appendix: Copy of Table 7.1 of Zoning Bylaw

Note: this copy is provided for convenience. Applicants are encouraged to verify requirements with Table 7.1 of the [Zoning Bylaw](#) in case requirements have changed since publication of this Bulletin.

<b>TABLE 7.1</b>					
<b>USE OF BUILDING</b>		<b>REQUIRED PARKING SPACES</b>	<b>REQUIRED EV CHARGING INFRASTRUCTURE</b>		
			<b>Minimum Energized Spaces</b>	<b>Minimum EVSE</b>	<b>Minimum Charging Level</b>
<b>1.0 Residential</b>					
1.1	Single Family Dwellings	2 spaces per dwelling unit	1	0	L2M
1.2	Secondary Suite	1 space	1	0	L2M
1.3	Two Family Dwelling	2 spaces per dwelling unit	2	0	L2M
1.4	Single Family Dwelling providing boarding or sleeping accommodation for guests in a bed and breakfast	2 spaces per dwelling unit plus 0.5 space per bedroom used for boarders or guests	2	0	L2M
1.5	Attached Housing	2 spaces per dwelling unit	100%	0	L2M
1.6	Apartments	1.5 spaces per dwelling unit	100%	0	L2M
1.7	Buildings Containing three or more dwelling units for senior citizen housing and approved by the BC Housing Management Commission under the Nonprofit Housing Program	1 space per 2 dwelling or sleeping units	100%	0	L2M
1.8	Buildings Containing three or more dwelling units designed solely for families of low income and approved by the BC Housing Management Commission under the Nonprofit Housing Program	1.5 spaces per dwelling unit	100%	0	L2M
1.9	Accessory residential uses in buildings also used for commercial users	1.5 spaces per dwelling unit	100%	0	L2M
1.10	Buildings for Tourist Accommodation	1 space per dwelling unit or sleeping unit and 1 space per employees	100%	0	L2M
1.11	Congregate Housing	0.5 space per dwelling or sleeping unit	100%	0	L2M

<b>TABLE 7.1</b>					
<b>USE OF BUILDING</b>		<b>REQUIRED PARKING SPACES</b>	<b>REQUIRED EV CHARGING INFRASTRUCTURE</b>		
			<b>Minimum Energized Spaces</b>	<b>Minimum EVSE</b>	<b>Minimum Charging Level</b>
<b>2.0 Institutional Public and Semi-Public and Health</b>					
2.1	Personal Care Homes, Extended Care Homes or Group Care Facilities with lodging	1 space per 3 beds	5%	2	L2M
2.2	Medical, Dental and Real Estate office	1 space per 20 m <sup>2</sup> (215.0 ft <sup>2</sup> ) of gross floor area	5%	2	L2
2.3	Hospital or similar use	1 space per 50 m <sup>2</sup> (538.2 ft <sup>2</sup> ) of gross floor area	5%	12	L2M
2.4	Funeral Homes	1 space per 5.6 m <sup>2</sup> (60.0 ft <sup>2</sup> ) of gross floor area used for Assembly	1	1	L2
2.5	Churches (areas of worship, halls, meeting rooms)	1 space per 8.0 m <sup>2</sup> (86.1 ft <sup>2</sup> ) of gross floor area used for Assembly	1	1	L2
2.6	Sunday School	1 space per classroom	0%		
2.7	Schools				
	(a) Kindergarten and Elementary	1 space per employee plus 2	5%	6	L2M
	(b) Junior Secondary/Middle	1 space per employee plus 2	5%	6	L2M
	(c) Senior Secondary	1 space per employee and 1 space per 10 students	5%	6	L2M
	(d) Colleges	1 space per 30 m <sup>2</sup> (322 ft <sup>2</sup> ) of gross floor area	5%	12	L2M
	(e) Universities	1 space per 50 m <sup>2</sup> (538 ft <sup>2</sup> ) of gross floor area	5%	12	L2M
2.8	Public Utilities	1 space per employee	5%	6	L2M



<b>TABLE 7.1</b>					
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			<b>Minimum Energized Spaces</b>	<b>Minimum EVSE</b>	<b>Minimum Charging Level</b>
<b>3.0 Cultural and Recreational</b>					
3.1	Community Centres, Activity Centres	1 space per 20 m <sup>2</sup> (215 ft <sup>2</sup> ) of gross floor area used for Assembly	4	2	L2
3.2	Libraries, Galleries, Museums	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of gross floor area used for Assembly	4	2	L2
3.3	Theatres, Auditoriums, Dancehalls, Clubs, Halls or Lodges	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of gross floor area used for Assembly	4	2	L2
3.4	Stadiums, Arenas, Exhibition Halls, Pools or similar places with spectator facilities	1 space per 4 seats plus 1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of ice area plus 1 space per player capacity of other sports	5%	6	L2
3.5	Gymnasiums, Health Clubs, Spas	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of fitness or gymnasium surface area	4	2	L2
3.6	Bowling Alleys, Curling Rinks	4 spaces per alley or sheet of ice plus 1 space per employee	4	2	L2
3.7	Racquet and ball courts	2 spaces per court	1	1	L2
3.8	Ranges for golfing driving, archery or small arms firing	1 space per range tee or target corridor	4	2	L2
3.9	Golf Courses	8 spaces per golf hole provided	4	2	L2
3.10	Marinas, Sailing Schools and Associations	1 space per 2 mooring berths or storage spaces provided	4	2	L2

**TABLE 7.1**

USE OF BUILDING		REQUIRED PARKING SPACES	REQUIRED EV CHARGING INFRASTRUCTURE		
			Minimum Energized Spaces	Minimum EVSE	Minimum Charging Level
<b>4.0 Commercial</b>					
4.1	General Office	For buildings not exceeding 1000 m <sup>2</sup> (10764 ft <sup>2</sup> ) of gross floor area: 1 space per 25 m <sup>2</sup> (269 ft <sup>2</sup> ).  For buildings exceeding 1000 m <sup>2</sup> (10764 ft <sup>2</sup> ): 1 space per 25 m <sup>2</sup> (269 ft <sup>2</sup> ) for the first 1000 m <sup>2</sup> (10764 ft <sup>2</sup> ), and 1 space per 30 m <sup>2</sup> (323 ft <sup>2</sup> ) for any additional area.	2  5%	2  4	L2M  L2M
4.2	Retail sales of goods and services	1 space per 14 m <sup>2</sup> (150 ft <sup>2</sup> ) of gross floor area	5%	4	L2
4.3	Freestanding Local Convenience Stores	5 spaces plus 1 employee parking space	0%		
4.4	Retail Food Stores greater than 275 m <sup>2</sup> (2960 ft <sup>2</sup> ) of gross floor area	1 space per 14 m <sup>2</sup> (150 ft <sup>2</sup> ) of gross floor area	5%	4	L2
4.5	Restaurants, Drive-in and Fast Food Restaurants	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of gross floor area	0%		
4.6	Premises or portions thereof, licenced pursuant to Provincial Legislation for the regular sale of liquor except for neighbourhood public houses	1 space per 5.5 m <sup>2</sup> (59 ft <sup>2</sup> ) of gross floor area open to the public	0%		
4.7	Neighbourhood Public Houses	1 space per 3 seats	0%		
4.8	Service stations and facilities for the repair or servicing of motor vehicles	1 space per 2 employees (minimum of 2 spaces) plus 1 space for each service bay	1	1	L2
4.9	Financial Institutions	1 space per 16 m <sup>2</sup> (172 ft <sup>2</sup> ) of gross floor area	2	2	L2
4.10	Shopping centres less than 1000 m <sup>2</sup> (10764 ft <sup>2</sup> ) of gross leasable area	Shall be the sum of the various classes of uses calculated separately			
4.11	Shopping centres greater than 1000 m <sup>2</sup> (10764 ft <sup>2</sup> ) and less than 23225 m <sup>2</sup> (250000 ft <sup>2</sup> ) of gross leasable floor area	1 space per 19 m <sup>2</sup> (204 ft <sup>2</sup> ) of gross leasable floor area	5%	6	L2

<b>TABLE 7.1</b>					
<b>USE OF BUILDING</b>		<b>REQUIRED PARKING SPACES</b>	<b>REQUIRED EV CHARGING INFRASTRUCTURE</b>		
			<b>Minimum Energized Spaces</b>	<b>Minimum EVSE</b>	<b>Minimum Charging Level</b>
4.12	Shopping centres greater than 23225 m <sup>2</sup> (250000 ft <sup>2</sup> ) of gross leasable area	1 space per 17 m <sup>2</sup> (183 ft <sup>2</sup> ) of gross leasable floor area	5%	18	L2
4.13	Cabaret or Dinner Theatres	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of gross floor area open to the public	0%		
4.14	Studios for broadcasting and production for television, radio or recording purposes	1 space per 30 m <sup>2</sup> (322 ft <sup>2</sup> ) of gross floor area	2	2	L2
4.15	Auction Rooms	1 space per 10 m <sup>2</sup> (107 ft <sup>2</sup> ) of auction floor area	0%		
4.16	Home Furnishing Stores	1 space per 80 m <sup>2</sup> (861 ft <sup>2</sup> ) of gross floor area	0%		
4.17	Rental and repair of household items, tools, appliances and small equipment	1 space per 100 m <sup>2</sup> (1076 ft <sup>2</sup> ) of gross floor area	0%		
<b>5.0 Industrial</b>					
5.1	(a) Warehouse and Storage Area (b) Retail Sales Areas incidental to a Permitted Use (c) Home Furnishing Store	1 space per 175 m <sup>2</sup> (1883 ft <sup>2</sup> ) of gross floor area 1 space per 14 m <sup>2</sup> (150 ft <sup>2</sup> ) of gross floor area Notwithstanding clause 5.1(a) or (b), 1 space per 80 m <sup>2</sup> (861 ft <sup>2</sup> ) of gross floor area	5%	2	L2M
5.2	Industrial	1 space per 95 m <sup>2</sup> (1022 ft <sup>2</sup> ) of gross floor area	5%	2	L2M
5.3	Research Establishments, Laboratories	1 space per 30 m <sup>2</sup> (322 ft <sup>2</sup> ) of gross floor area	5%	2	L2M
5.4	Beverage Container Depots in Industrial Zones	1 space per 40 m <sup>2</sup> (431 ft <sup>2</sup> ) of gross floor area or 6 spaces, whichever is greater	5%	2	L2M