ZONING BYLAW UPDATE: EV READY REQUIREMENTS

Key Terms:

EV – Electric Vehicle

EVSE - Electric Vehicle Supply Equipment

EVEMS – Electric Vehicle Energy Management System

MURB – Multi Unit Residential Building

BC has taken the most comprehensive approach to enabling EV adoption, starting with the core steps of adopting purchase incentives, investing in infrastructure, and enacting a strong mandate for minimum EV sales. As a result, BC has seen EV purchases double year-by-year.

To prepare infrastructure for this transition to EVs, a growing number of B.C. municipalities are adopting EV Ready Bylaws for Part 3 and Part 9 buildings. This includes the City of Kamloops' EV Ready Bylaw that came into effect in January 2023.

BACKGROUND [4:00]

BC has the highest uptake of EV's in Canada, thanks in part to provincial rebates and investments in infrastructure that encourage people to make the switch to electric.

Across BC, multiple municipalities have adopted EV Ready Requirements for new buildings. [6:09]

CHARGING BASICS [6:40]

There are three levels of charging available to EV Drivers:

Level 1 Charging (1.8kW)

This is the same as your regular household outlet – it requires 5-8hrs charge time for daily driving and can take 24+hrs to charge from 0%.

Level 2 Charging (19.2kW)

This can be a NEMA 14-50R, 6-50R plug or directly wired to an EV charger. Level 2 requires 1-2hrs charge time for daily driving and can take 6-9hrs to charge from 0%. **Level 2 charging is the kind outlined in the EV Ready Bylaw update.**

Level 3 Charging (350kW)

This is known as "DC Fast Charging" and is directly wired to EVSE. Depending on your vehicle's capability, charging from 0% can take between 30m and a few hours. Ideal for roadside top-ups on a long trip.

BYLAW DETAILS [10:55]

Residential Requirements

Minimum number of energized outlets for Level 2 charging is 1 per dwelling unit (carriage houses are included as a "dwelling unit" under the bylaw). EV Charging for parking spaces at secondary suites are exempt from this requirement. Where one or more accessible parking spaces are required by the Zoning Bylaw, a minimum of 50% of the accessible parking spaces shall be EV ready.

"'EV Ready' and 'energized outlet' means that the electrical infrastructure is completely in place so that the end use resident only has to put a charger on the wall, or on a post, and plug it in." [11:08]

Commercial Requirements [13:00]

Minimum number of energized outlets for Level 2 charging is 2 for the first 10 required parking spaces, plus 2 for every 10 additional parking spaces required (Parking spaces as defined in Bylaw No. 2023-08). Where one or more accessible parking spaces are required by the Zoning Bylaw, a minimum of 50% of the accessible parking spaces shall feature energized outlets for Level 2 charging or higher.

Technical Requirements [13:48]

Single family dwellings, duplexes, townhouses, carriage houses are required to have at least one 40 Amp breaker dedicated to serve the EVSE.

Multi-Unit Residential and Commercial only: A single 40 Amp breaker can service up to four EVSEs that will use a mechanism called "power sharing". [15:09] An individual charger can charge up to 40 amps, but if all four chargers are in use, the power would be split evenly between all chargers. Each stall must provide a minimum output of 1.7 kW per EVSE (Level 1 equivalent) from an overall EVEMS.

Dedicated circuit vs circuit sharing/EVEMS [16:05]

RATIONALE [17:51]

This requirement directly aligns with the Community Climate Action Plan. One of the biggest contributions to GHG emissions in the city is transportation and we want to encourage and enable residents to buy an EV.

The main concern of this bylaw update is that it will make housing more expensive. The cost to add EV charging a later time is much higher than the cost of becoming EV Ready during construction. Panel upgrades, service upgrades, and potential upstream utility upgrades are costly for residential/commercial customers. [18:35]

Being EV Ready can increase property value and make it easier for residents to complete a one-at-a-time installation. In a MURB, retrofitting for a one-at-a-time installation can cost 3x as much per stall and special levies in strata corporations make it prohibitively expensive to do a complete retrofit.

Completing this work at the outset also allows for the integration of circuit sharing and EV Energy Management Systems rather than adding a dedicated circuit for each energized stall.

Question [22:40] – Are there rebates to install an EV charger?

Question [40:65] – Are there any rebates or incentives for developers to recoup the cost of making a new build EV ready?