

# Appendix B. EV-Ready Plan scope

An EV-Ready Plan outlines how energized outlets or junction boxes at parking stalls can be installed in MURBs, so that residents can easily plug in or hardwire a Level 2 charger. Plans are prepared by a licensed electrical contractor or registered electrical engineer.

*This section was adapted from BC Hydro's EV-Ready Plan Requirements document.<sup>26</sup>*

The scope of an EV-Ready Plan includes:

## 1. Property details

- Number of residential units
- Number of residential parking stalls
- Number of commercial/visitor parking stalls, if applicable
- Number of chargers to be installed
- Number of existing EV-ready parking stalls

## 2. Electrical capacity assessment (in kilowatts)

- Existing capacity of the electrical panel
- Existing peak demand on the electrical panel
- Spare electrical capacity prior to EV charger installation

## 3. Charging performance assessment

A charging performance assessment evaluates the charging power required to provide adequate energy for drivers' charging needs if all parking stalls are being used by EVs. The assessment can be used to determine a reasonable number of EV chargers for each electrical circuit. By limiting excessive load-sharing, buildings can ensure sufficient power and charging speeds for drivers.

The assessment includes a description of how charging performance was determined and the variables taken into account. Factors that affect charging performance include but are not limited to:

- Average daily distance travelled by vehicles
- Climate
- Topography
- Demographics of residents (e.g., number of drivers, household sizes)
- Vehicle size and efficiency

Any guidelines, standards, or recommendations used in the charging performance assessment should also be included in the EV-Ready Plan, with an explanation of why they were referenced. Table 4 provides an example of minimum charging performance recommendations developed by AES Engineering Ltd. for the City of Calgary specifically. (Note: included only as an example and not necessarily as guidelines that should be followed)

Table 4. Example of minimum charging performance recommendations

Circuit breaker size	Example number of EV chargers per circuit (by average daily weekday vehicle kilometers travelled)			
	35 km or less	40 km	45 km	50 km
20 A	1			
30 A	1	1	1	1
40 A	4	3	3	2
50 A	5	4	4	3
60 A	7	6	5	4
70 A	8	7	6	5
80 A	10	8	7	6
100 A	12	11	9	8
125 A	15	14	12	11

#### 4. Recommended EV-ready solution

- The number of recommended chargers per circuit (e.g., 4 chargers per 40 A circuit breaker)
- Total potential load of chargers
- Spare capacity of the electrical panel after charger installation
- If the existing electrical capacity is adequate to meet charging needs; if a service upgrade is required, identify what this would entail
- Assessment of the existing telecom/network infrastructure and whether it can support networked EV chargers (e.g., cellular or Wi-Fi availability in parkade)
- Cost of operating the telecom/network infrastructure
- Compatible Level 2 networked charger and EV Energy Management System models

#### 5. Cost estimate

- Cost estimate of installing electrical infrastructure, network upgrades, and chargers