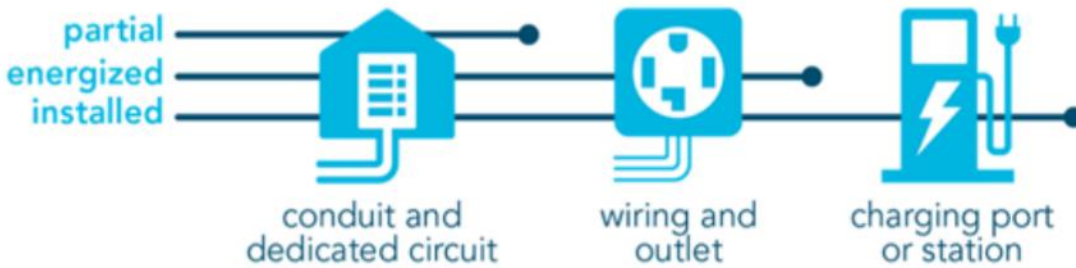


Appendix D: EV Charging Readiness Options

Electric vehicle infrastructure in residential development and construction may be installed with a variety of readiness options:



Readiness options for electric vehicle supply equipment (i.e., charging infrastructure)¹

- **Partial:** All infrastructure required for charging of an EV, including all electrical equipment (including metering), cabling and associated raceways, and connections, up to the provisional branch panelboard locations, minus the feeder cabling to the panelboards. Raceways for the feeder cabling to the provisional panelboard locations would be included; the branch panelboards and associated feeder cabling, branch cabling and associated raceways, and connections to EVSE's would be installed later.² Partial EVSE is the least costly option at the time of development; however, it is more costly overall because additional electrical infrastructure must be added at a later date. In addition, the partial infrastructure cannot be verified to function at the time of electrical inspection because it is not energized.
- **Energized:** All the infrastructure required for charging an EV, apart from the Level 2 EVSE equipment, is included; i.e., all electrical equipment (including metering, transformers, subpanels as needed), cabling and associated raceways, and connections (energized outlets). The EV owner would purchase their own EVSE and have it installed. The development costs are variable, depending on the system configuration (see more on costing scenarios in section 2.5 costs below). Load sharing using an EVEMS can significantly reduce the costs of providing EV-ready or fully energized outlets.
- **Electric vehicle supply equipment installed:** All the infrastructure required for charging an EV is at the parking stall, including all electrical equipment (including metering, transformers, subpanels as needed), cabling and associated raceways, and connections. In addition, Level 2 EVSE equipment is permanently installed. This is the easiest option for EV owners, and the costliest to install during development.

¹ C2MP & Fraser Basin Council. 2018. Residential Electric Vehicle Charging: A Guide for Local Governments. Retrieved from: https://www.richmond.ca/_shared/assets/Residential_EV_Charging_Local_Government_Guides1732.pdf.

Based on the aforementioned “Readiness” options for EV charging, local governments can choose various coverage options that prescribe the percentage of parking that should have access to EV infrastructure, or how many stalls should be equipped with EV infrastructure per residential unit. Various coverage and readiness options are evaluated in the Table below.

Comparison of Electric Vehicle Charging Options for New Residential Developments²

Example option evaluation	Minimize upfront costs*	Minimize retrofit costs	Simple for strata	Simple for City	Equitable for residents	Future-proof
Percentage-based (e.g. 20%)	Green	Red	Red	Yellow	Red	Red
Partial (pre-serviced low, all stalls)	Green	Red	Red	Red	Red	Yellow
Partial (pre-serviced high, all stalls)	Yellow	Yellow	Yellow	Yellow	Yellow	Green
Energized (EVSE-ready, all stalls)	Yellow	Green	Green	Green	Green	Green
EVSE Installed (all stalls)	Red	Yellow	Green	Green	Green	Yellow

How well does an option perform for a specific metric: Green = Good; Yellow = Average; Red = Poor

² C2MP, 2018.