

NOTE: This is a proposed amendment to the Ann Arbor Unified Development Code. Specifically, it concerns the required installation of three electric vehicle charging infrastructures for a new building or major renovation to an existing building: EV-Capable, EV-Ready, and EV-Installed.

The Ann Arbor Unified Development Code shall be amended by adding the following terms to *Article VIII: Definitions*

Electric Vehicle (EV)

An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current which is charged by being plugged into an electrical source.

Plug-in Hybrid Electric Vehicle (PHEV)

A type of electric vehicle intended for on-road use with the ability to store and use off-vehicle electrical energy in a rechargeable energy storage system, and having a second source of motive power.

Electric Vehicle Supply Equipment (EVSE)

The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses installed specifically for the purpose of transferring energy between the premise wiring and the electric vehicle.

Electric Vehicle Supply Equipment System (EVSES)

A system of components that provide an alternating current (AC) output that is supplied to the vehicle for the purpose of providing input power to an on-board charger.

Electric Vehicle Charging System (EVCS)

A system of components that provide a direct current (DC) output that is supplied to the vehicle for the purpose of recharging electric vehicle storage batteries, commonly referred to as DC fast charging (DCFC).

EV-Capable (EV-C)

An installed electrical panel capacity with dedicated branch circuit(s) and cable/raceway that is capped for future EV parking space(s).

EV-Ready (EV-R)

An installed electrical panel capacity with a dedicated branch circuit(s) including conductor in a raceway or direct buried, terminated in an approved method in a junction box, for an EV parking space(s).

EV-Installed (EV-I)

An installed electrical panel capacity with a dedicated branch circuit(s) including conductor in a raceway or direct buried, and an EVSES charging station capable of providing charge energy to an EV parking space(s).

Include this schematic representation of the above three types of EVSE levels:

EVSE Classifications

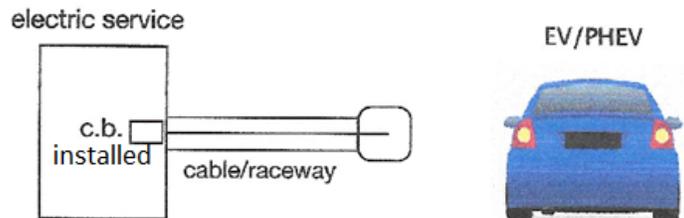
EVSE Capable (EV-C)

Install electrical panel capacity and dedicated cable/raceway(s) that is capped for future EV parking space(s)



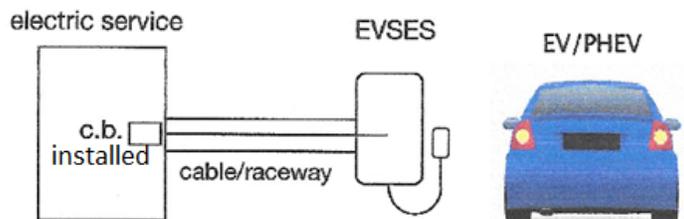
EVSE Ready (EV-R)

Install electrical panel capacity with a dedicated branch circuit(s) including conductors in a cable/raceway that is terminated in an approved method for a future EV parking space(s)



EVSE Installed (EV-I)

Install electrical panel capacity with a dedicated branch circuit(s) including conductors in a cable/raceway and an EVSES charging station capable of providing charge energy to an EV(s)



Note: c.b. = circuit breaker

EV Parking Space

A parking space that is to be EV-C, EV-R or EV-I.

The following Amendments are to be made to Article IV Section 5.19 Parking Standards

Add to Section 5.19.1 Applicability

A. No New Building shall be erected unless the parking for bicycles, motor vehicles and **electric vehicles** required by this section 5.19 is provided.

E. All new Site Plans for City Council are required to provide EV charging facilities consistent with the requirements of section 5.19.

Replace current Table 5:19-1 Off-Street Parking Spaces Required with the revised Table which includes the new column: Required Electric Vehicle Charging Spaces

Add to Table 5:19-2 Stall and Aisle Standards

Add to footnote C: Barrier Free Spaces shall have electric vehicle charging access according to Table 5:19-3

Add to Section 5.19.8 Design of Vehicle Parking Facilities:

G. All Parking shall have at least the percent of EV charging infrastructure noted in Table 5.19.1. If the percentage results in a fraction, the number of EV charging sites shall be rounded up to the next whole number. The following provisions must be met in accordance with the apportioned EV-designated parking spaces contained in Table 5.19.1.

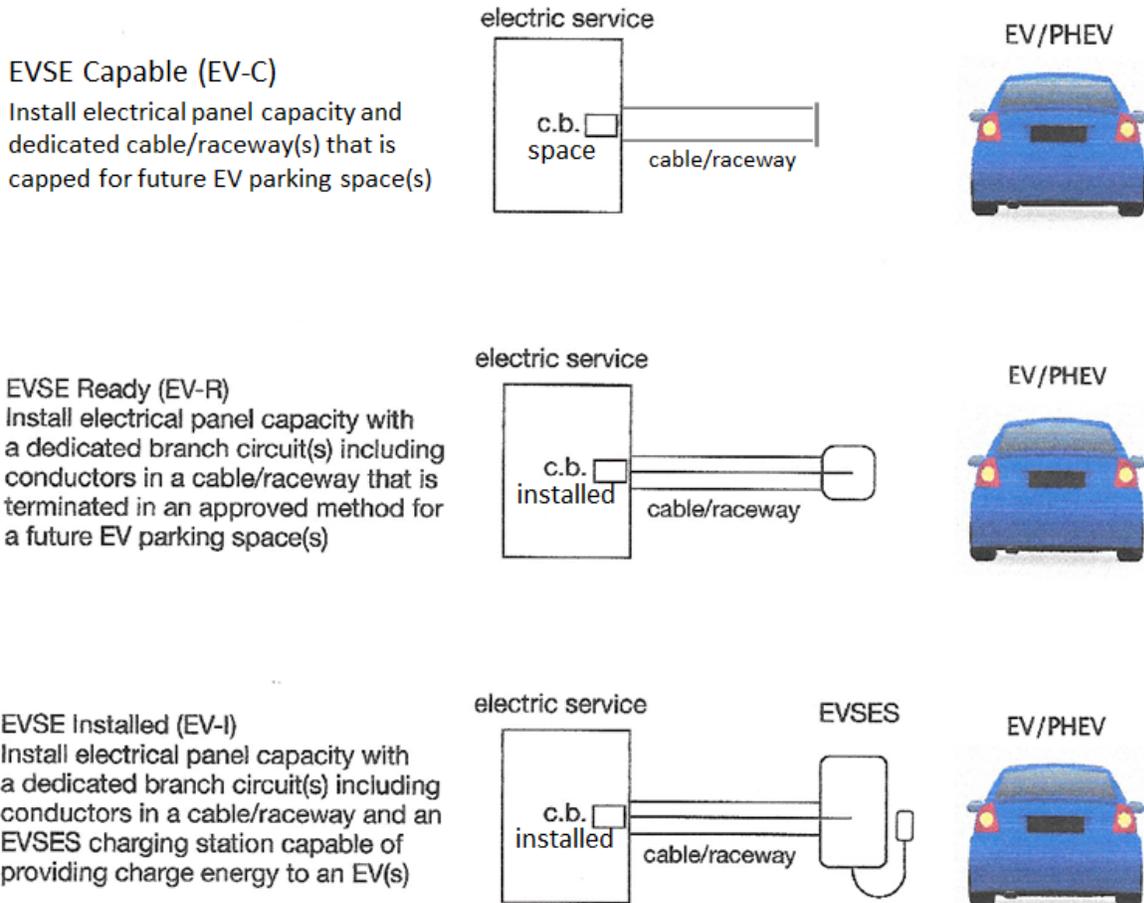
1. **EV-Capable infrastructure (EV-C)** shall include an installed electrical panel capacity with dedicated branch circuit(s) and cable/raceway for future EV parking space(s).
In addition, the dedicated branch circuit panel space shall be stenciled or marked legibly with the following text: "FUTURE ELECTRIC VEHICLE CHARGING CIRCUIT".
2. **EV-Ready infrastructure (EV-R)** shall include an installed electrical panel capacity with a dedicated branch circuit(s) including conductor in a raceway or direct buried, terminated in an approved method in a junction box, for an EV parking space(s). The junction box shall be clearly marked and labeled "EV READY CIRCUIT".
3. **EV-Installed infrastructure (EV-I)** shall include an installed electrical panel capacity with a dedicated branch circuit(s) including conductor in a raceway or direct buried, and an EVSES charging station capable of providing charge energy to an EV parking space(s). EV-I spaces must include signage indicating that the parking space is to be exclusively used for electric vehicle charging
4. **The following charging levels and configurations are allowed:**
 - a. EVSES Level 2 charging alternating current (AC) ratings (voltage/circuit breaker rating): 240/208 V / 20, 30, 40, 50, and 60 A. The range of acceptable voltages and current capacities can be alternatively used for specific expected conditions of use in consideration of electric power supply capacity for compliance. One EVSES can be used to provide charging to more than one parking space providing a minimum of 20 A per space is available.
 - b. EVCS Level 3 direct current (DC) charging may be used in place of EVSES for specific conditions of use and classified as EV-I, as approved by the City

Planning Department. At least one EVSES Level 2 charging station must also be provided.

- The placement of EV charging infrastructure shall not create a trip hazard or violation of the accessible path of travel when the cord is connected to an EV or PHEV.

Graphic 5:19-1 EVSE Classifications

EVSE Classifications

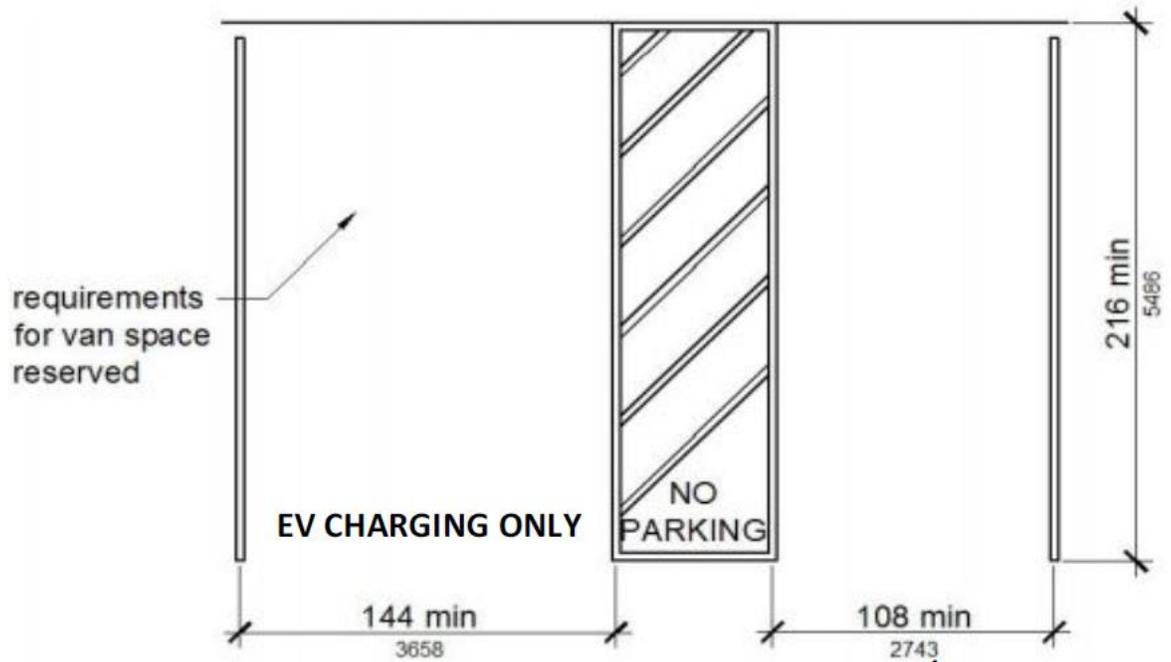


Note: c.b. = circuit breaker

H. Where parking spaces are separated into distinct areas, separate garages or lots, EV charging infrastructure (EV-C, EV-R, EV-I) shall be evenly distributed among all separate areas by their required percentages. Exceptions to this dispersal may be made by the Planning Department at its discretion. Where a project is to be phased, EV infrastructure shall be distributed according to the final plan and installed as part of each phase according to that distribution.

I. The proposed placement and installation of EV infrastructure or equipment shall not allow for any violation of the Americans with Disabilities Act of 1990 (42 U.S.C. § 12101).

1. The minimum number of EVSES as dictated by **Table 5:19-3** shall meet the accessibility requirements as shown in **Graphic 5:19-1**. Where the Parking Table 5:19-1 requires EV-I(s), at least one EV-I shall be adjacent to and accessible from an ADA compliant parking space.
2. **Graphic 5:19-2**



3. Table 5:19-3 Accessible EVSES EV-I Charging Stations Required

Total number of EV-I Spaces	Minimum Number of EVSES EV-I Required	
	Van Accessible	Standard Accessible
1 to 4	1	0
5 to 50	1	1
51 to 75	1	2
76 to 100	1	3

101 and over	1, plus 1 for each 300, or fraction thereof, over 100	3, plus 1 for each 60, or fraction thereof, over 100
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J. Renewable Electrical Supply

In order for EVs to provide the maximum environmental and, in most cases, financial benefits to their owners, and, in support of the City of Ann Arbor’s carbon neutrality goals, it is recommended that EV chargers be powered by a renewable energy source. Options can be on-site solar power generation, or subscribing with a utility or a third party for renewable energy.

K. Parking Lot Design for Accommodating Level 2 EV Charging Stations

1. EV-Installed spaces must include signage indicating that the parking space is to be exclusively used for electric vehicle charging.
2. Installation of new EV Charging Stations shall not encumber the required size of parking stalls.
3. Free-standing EV charging stations require bollards, bumper blocks or raised curbs to protect the charging device.
4. Private sidewalks that abut parking spaces shall be a minimum of 5 feet wide to accommodate EV charging stations and allow 4 feet for pedestrian movement.
5. Charging stations shall be wall mounted, or located in the corner of parking stalls to accommodate the charging of more than one vehicle.
6. Required landscape islands shall not be used to accommodate EV charging stations, or charging station infrastructure.