



**ELECTRIC VEHICLE (EV) SUBCOMMITTEE
LEBANON ENERGY ADVISORY COMMITTEE (LEAC)
NOVEMBER 14, 2024 - 3:00 PM
COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

-
- 1. Call to Order**
 - 2. Approval of Minutes**
 - A. September 12, 2024
 - 3. Old Business**
 - A. Lebanon workplace charging program
 - B. Charging and Fueling Infrastructure (CFI) grant application
 - C. Request for Proposals (RFP) for EV charging stations
 - D. Constraints on Direct Pay for EV charging stations
 - E. Solaflect EV charging station
 - F. E-bike charging stations
 - G. School District/School Board outreach
 - H. Potential revisions to the Zoning Ordinance
 - 4. New Business**
 - A. Cost Benefit Analysis Guide for Managed EV Charging
see: <https://www.energy.gov/eere/evgrid-assist-accelerating-transition>
 - B. National Drive Electric Week reports from September
 - 5. Open to the Public**
 - 6. Upcoming Events & Future Agenda Items**
 - 7. Set next meeting**
 - 8. Adjournment**

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to [LebanonNH.gov/Live](https://www.lebanonnh.gov/live) where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

AGENDA
ELECTRIC VEHICLE SUBCOMMITTEE OF THE
LEBANON ENERGY ADVISORY COMMITTEE
November 14, 2024

AGENDA ITEM 2
APPROVAL OF MINUTES:

September 12, 2024



ELECTRIC VEHICLE SUBCOMMITTEE MEETING MINUTES

(Subcommittee of the Lebanon Energy Advisory Committee)

City Hall Council Chambers

September 12th, 2024, 3:00 PM

-- Draft --

MEMBERS PRESENT: Sherry Boschert - Chair, Tom Benzel, Bill Stearns, Clifton Below.

MEMBERS ABSENT: None.

STAFF PRESENT: Tad Montgomery - Energy & Facilities Manager.

GUESTS PRESENT: None.

1. **CALL TO ORDER:** Ms. Boschert called the meeting to order at 3:04 PM.

2. **APPROVAL OF PAST MINUTES:**

Mr. Benzel moved to accept the August 2024 EV Subcommittee minutes; Mr. Stearns seconded. Approved unanimously.

3. **OLD BUSINESS**

A. **Lebanon Workplace EV Charging Policy** – Mr. Montgomery said that there has been no news re this policy. Ms. Boschert asked when the deadline was for Staff comment on the draft policy, and Mr. Montgomery said he thought Sept. 3rd. Ms. Boschert said she would discuss it with the City Manager the next time they spoke. Mr. Montgomery said that he knows of two other staff who have either gotten or are getting EVs. Ms. Boschert said that when the policy is put in place she will work with the HR and Finance Departments to get the final details worked out.

B. **Charging and Fueling Infrastructure Grant (CFI):** Ms. Boschert said that the City has been informed that we were not selected to receive the CFI Round 1, Second Pass grant. She said that the CFI Round 2 application is in the works at the NH DES and all Lebanon's proposed sites have been submitted to the DES and included in their application. The application deadline has been extended to Sept. 15th and we hope to hear about selection by the end of the year. Ms. Boschert said that the Round 2 CFI does not allow for Level 1 EVCS, so solar charging stations are not included in the

application.

- C. **EV Infrastructure Plan for Lebanon TIF District** – Ms. Boschert described progress on this in conjunction with item 3.D below. Mr. Benzel gave an update on his discussions with Solaflect around the solar EVCS that has been approved for the Taylor St. parking lot. He said that one of Solaflect’s owners has offered to pay the City for all electricity consumed until Solaflect is able to install a customer payment system on the unit. Mr. Benzel is working out the details of this agreement with them, including a buy-back option if the equipment is not installed in a certain timeframe, say six months. An issue arose around this regarding Direct Pay - if the City has applied for it when a buy-back happens.
- D. **Request for Proposals (RFP) for EV Charging Stations** – Ms. Boschert and Mr. Montgomery gave an overview of this RFP. Mr. Montgomery said that the DPW Management had recommended it be converted from an RFP to an RFQ because the RFQ format is more conducive to the work needing to be done. He has done that and gotten it to Ms. Boschert and DPW Management for review. The two big elements still needed for it are a pricing table for the costs of installing EVCS by site, and development of a timeline for issuing the RFQ. Ms. Boschert said that she would send a draft of the RFQ to LEAC EV Subcommittee members, including the pricing table.
- E. **Solar e-Bike Charging Stations** – Mr. Montgomery gave an overview of the project. A site visit happened with the City Electrician Ted Makalinaw, Paul Coats, and City Engineer Brian Vincent. There was a disinterest in putting an e-bike CS on top of the tunnel or around the mall primarily for aesthetic reasons. Mr. Makalinaw suggested that Colburn Park near the kiosk in the north-west corner might be a good spot, and this was discussed. Mr. Montgomery has been told that the City Manager has said that there are no funds available to pay for design work on these e-bike CS, so he is looking for other options for design and/or funding for the design, including Dartmouth College engineering students and City engineers. Mr. Benzel asked if TIF district funds could be used for this, and Mr. Montgomery said that he would ask.
- F. **School District / School Board Outreach** - Ms. Boschert asked if there has been any progress on setting up a meeting. Mr. Montgomery said no, except for conversations with SAU 88’s CFO on other matters. Mr. Montgomery was told by the

Superintendent that there is a new emphasis in the District on sustainability. He suggested that EV Subcommittee members reach out to School Board members, including Richard Ford Burley who chairs the Environmental Justice Task Force of the DEI Committee. Ms. Boschert affirmed that she is happy to give a presentation.

4. NEW BUSINESS

- A. **20 Spencer Street Redevelopment Request for Waiver of EVCS** -- Ms. Boschert said that at the ZBA meeting on Sept. 2nd where this waiver was to be requested the developer retracted their request for a waiver.
- B. Mr. Benzel said that a Rivian showroom/repair shop has recently opened in Boston. Ms. Boschert described a problematic repair experience with the new Tesla repair shop in Burlington.

5. OPEN TO THE PUBLIC

There was no public discussion.

6. UPCOMING EVENTS AND FUTURE AGENDA ITEMS:

- **Upper Valley EV Expo** – New London will host the 2024 Upper Valley EV Expo on the last weekend on September 29th, noon – 4 PM, at the New London Historic Village. Info: (802) 291-3939, WhyPumpGas@gmail.com, <http://UVEVExpo.org>.

7. NEXT MEETING:

The date of the next meeting is Thursday, October 10th, 3 PM, Council Chambers, City Hall.

8. ADJOURNMENT:

Mr. Benzel moved to adjourn the meeting at 3:43 PM, seconded by Mr. Stearns.

The motion passed unanimously with a degree of happiness.

Respectfully submitted,

Tad Montgomery

AGENDA
ELECTRIC VEHICLE SUBCOMMITTEE OF THE
LEBANON ENERGY ADVISORY COMMITTEE
November 14, 2024

AGENDA ITEM 3
OLD BUSINESS:

**Potential revisions to Zoning
Ordinance: Right Sizing EV
Charging from LEAN CCA
conference & Lebanon
Zoning Ordinance EV
Provisions.**

2024 National Community Choice Aggregation Conference

Panel Discussion: Scaling Transportation Electrification and Charging Infrastructure Through CCA



Dana Vingris

Director of Grants and Development,
SOPEC



Phillip Kobernick

Associate Director of Energy Programs,
Peninsula Clean Energy



Brett Wiley

Senior Program Associate,
Electric Mobility,
Ava Community Energy



Natalie Hanson

Director of Energy Programs,
Optony USA

October 2024 | Washington, DC

Organized by LEAN Energy US
#CCA2024



Scaling EV Charging Program Impacts

Phillip Kobernick
Associate Director of Energy Programs
Peninsula Clean Energy



Peninsula Clean Energy

Not for profit locally-led electricity provider.

Mission: To reduce greenhouse gas emissions by expanding access to sustainable and affordable energy solutions.

Savings: Customers have saved over \$100 million compared to investor-owned utility rates.



Peninsula Clean Energy

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Learning Objectives

Multi-family EV charging for everyone through:

- 1- Right-sized strategy
- 2- Green building codes



EV chargers installed through PCE "EV Ready" program

Peninsula Clean Energy

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EV Charging, Essential Challenges

Apartment/condo
access is critical



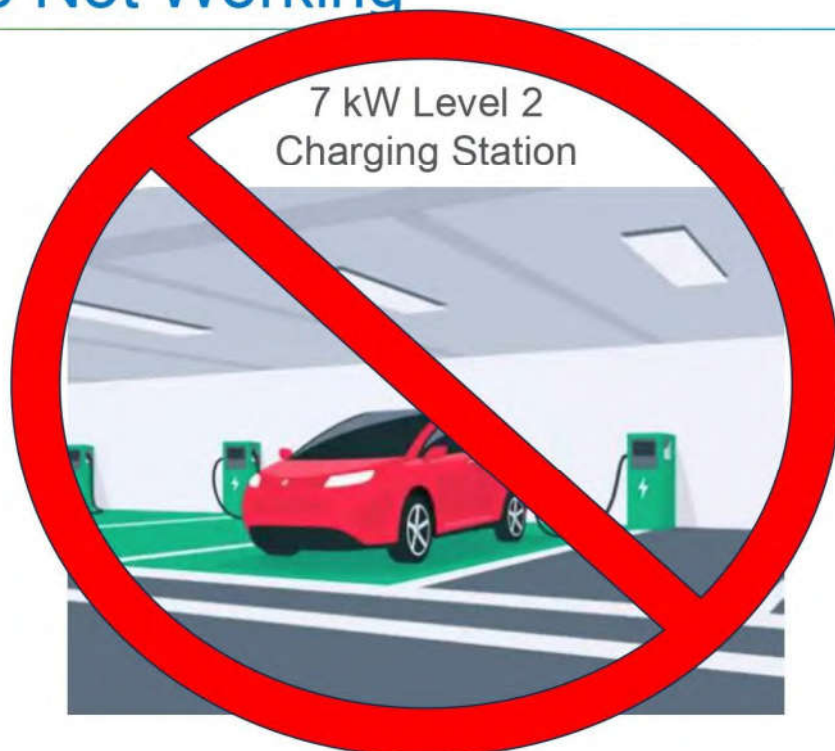
Chargers must
come **before** EVs

Transportation is 2nd
Highest Household Cost



EV chargers installed through PCE "EV Ready" program

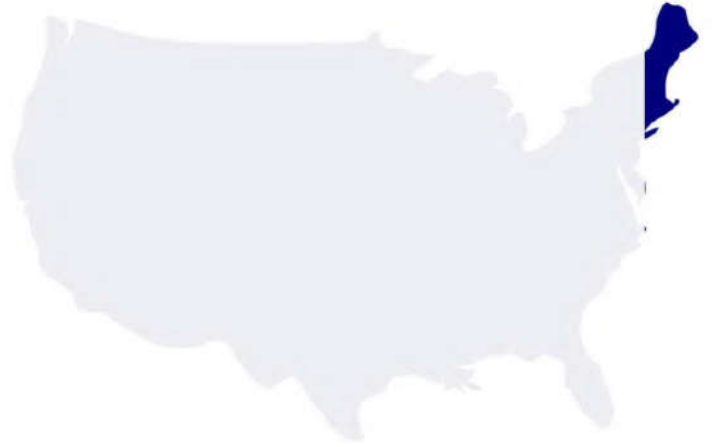
Status Quo Not Working



EV Charging, Far from Targets

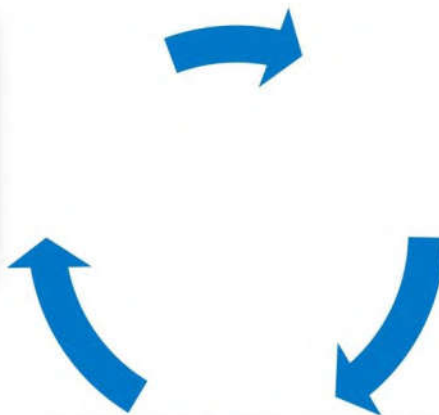


CA has **only 10%**
of the 1.1 million total
chargers needed by 2030



USA has **only 7%**
of the 2.1 million public
chargers needed by 2030

Focus on Avg Daily Driving



San Mateo County:
~35 miles/day avg

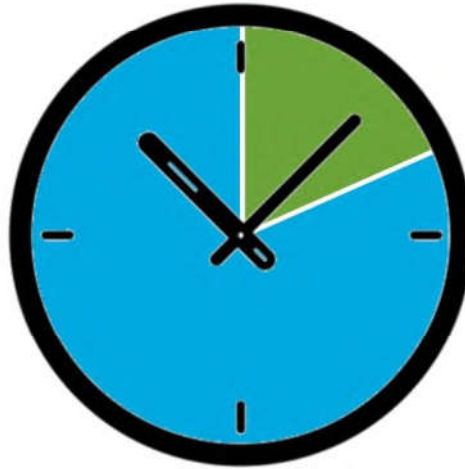
Baltimore: ~60 miles/day avg

Wisconsin: ~30 miles/day avg

“Level 2” Charging, Not an Apt. Solution

Average charge time
is under 3 hours

Cars are typically
plugged in for 12 hours



7 kW is overbuilt and
too expensive for
overnight charging

CSE/Forth study

Solution: “Right Speed” EV Charging

Focus on Daily Needs

94+% of CA drivers need 1.65 kW
capacity with overnight charge



1 in 3 EV drivers **already** using L1 charging at home

Solution: “Right Speed” EV Charging

- Level 1 (1.9 kW). 60+ miles recharge overnight.
- Low-Power Level 2 (3.3 kW). 115+ miles recharge overnight.
- At assigned parking spaces (avoids vehicle shuffling).
- PCE program avg cost: ~\$2,500/ea. 7X cheaper than L2 costs.



“Smart” L1 Products



Building Codes



What are “Reach Codes?”

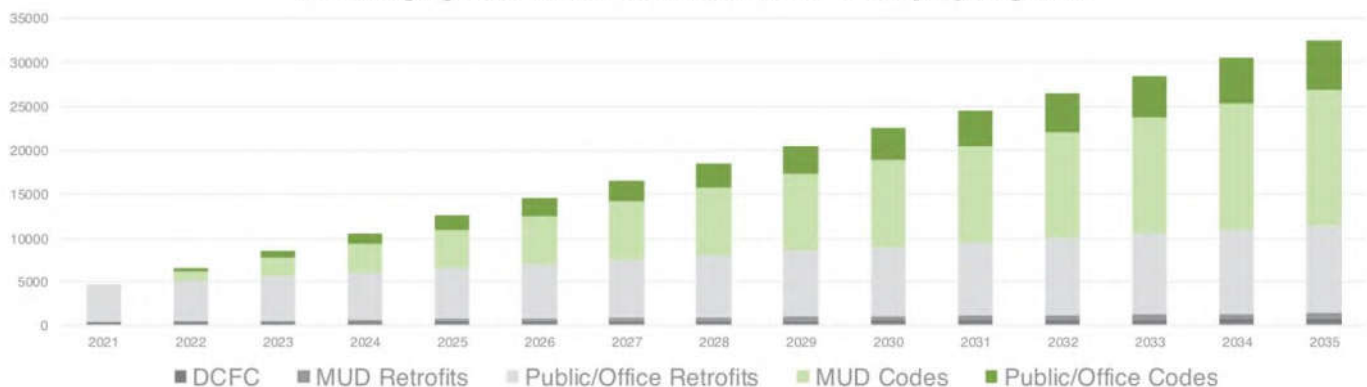
- Local building code enhancements to state code
- EV charging (outlets or chargers) to **all** MFH residents with parking
- Minimal marginal cost for new builds (<.3% of total costs)
- Cities led the way for state code



Why are codes so important?

Expected to be the primary driver of new EV charging

EV Charging Station Forecast in San Mateo County, by Segment



65% of EV chargers by 2035 will be created through codes

Recap

1. Right-sized EV charging at retrofits (don't overbuild)
2. Building codes = major impact



60+ Level 1 outlets



Thank you!

Case studies, design guidelines, and more at
<https://www.peninsulacleanenergy.com/ev-technical-resources/>

Phillip Kobernick
pkobernick@peninsulacleanenergy.com



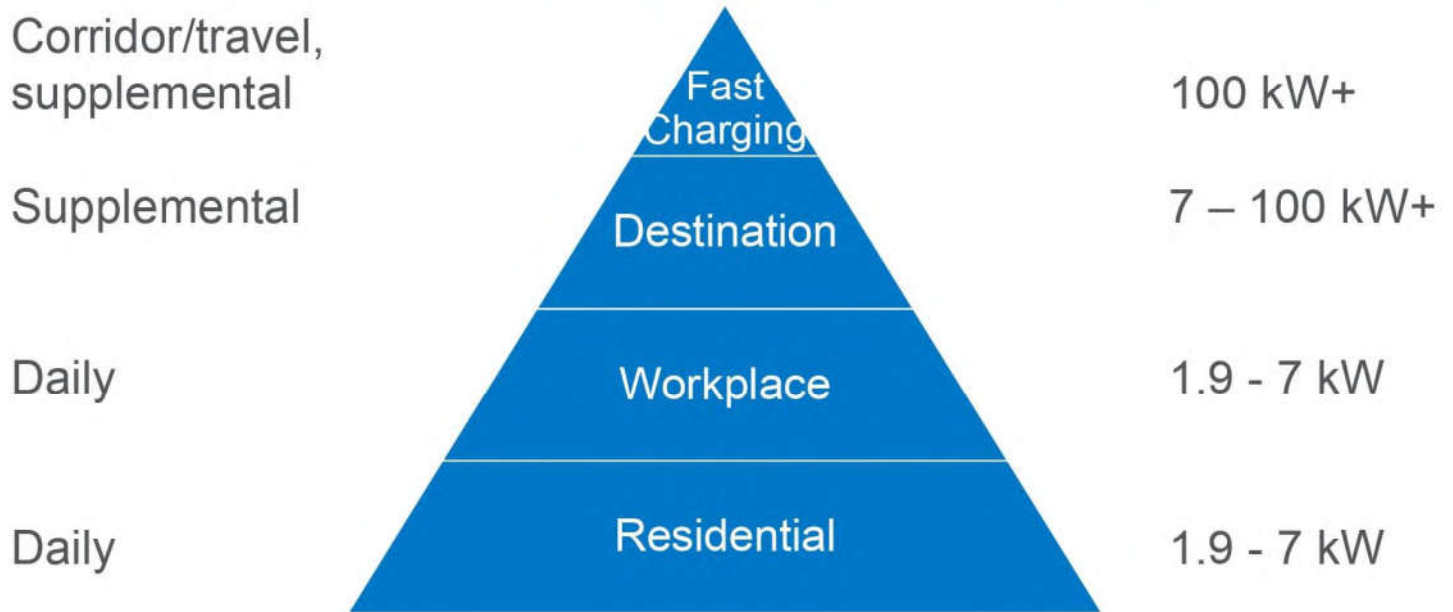
Additional Info



Types of EV Charging

Type of Charging	Speed	Where
Level 1 	~40-50 miles of range overnight. Up to 1.9 kW	1. Residential 2. Apartments and condo retrofits
Low-Power Level 2 	100+ miles of range overnight. 3.3 kW	1. Residential 2. Apartment and condo new builds and retrofits
Level 2 	~20 miles of range per hour. Up to ~7 kW.	1. Workplace 2. Public charging
Level 3 	150+ of range per hour. Typically 100kW+	1. Public charging 2. Highways

Use the Right Charge Levels for The Use Case



Example Project

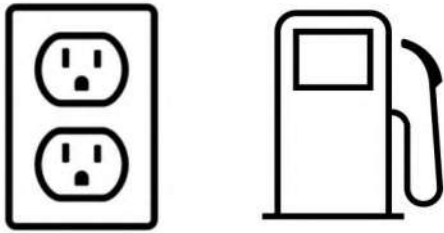
- 39-unit apt. in Belmont, built 1962
- Received TA + rebates
- “Upsold” from 12 to 32 L1 outlets
- 80% w/o service upgrade
- Final cost: \$76,690
- PCE rebate: \$69,000 (\$2.1k/port)
- Net to cust: \$7,690, ~\$240/charger



Equitable Pricing through Design

Charging fees are too expensive

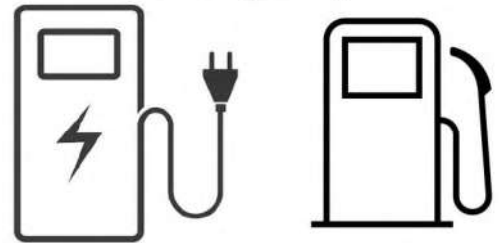
Single-family homes



\$90 in electricity,
equiv to \$140 in gas

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Apartments (third-party
chargers)



\$135 in electricity,
equiv to \$140 in gas

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Equitable Pricing through Design

SFH Residential

EV2-A Summer (June – September)

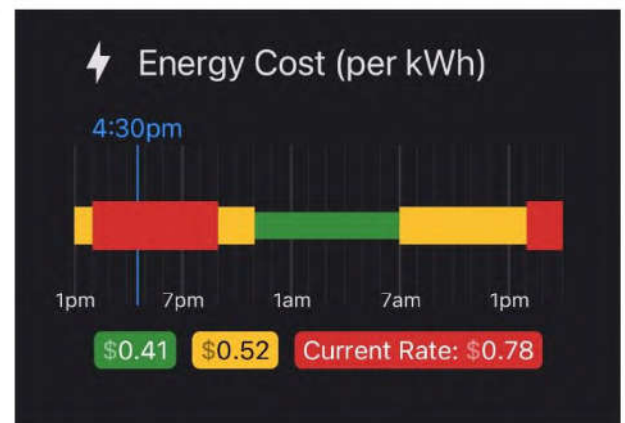
Lowest cost
Ideal charging times: 11 p.m. - 7 a.m.

Higher cost
Avoid or limit charging 3 p.m. - 12 a.m.



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Third-Party EV Chargers



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Equitable Pricing through Design

Direct wiring with load balancer



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Virtual submetering



Pages 183-184:

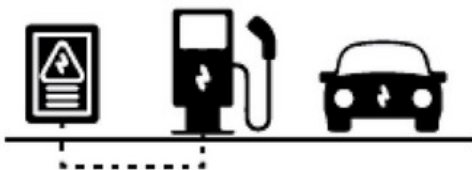
607.8 Electric Vehicles.

- A. Purpose. The purpose of this section is to facilitate the transition to **electric vehicle** use and to expedite the establishment of convenient, cost-effective **electric vehicle infrastructure** that such a transition necessitates.
- B. Applicability. **EV charging stations** are allowed as an **accessory use** in all zoning districts. When the retail charging of **electric vehicles** is proposed to be the principal use of a **lot**, then the proposed **EV charging station** shall be considered a **service station** for zoning purposes.
- C. EV Infrastructure Requirements / Off-Street EV Parking Requirements. **EVSE-installed spaces, EV-ready spaces, and EV-capable spaces** shall be provided as follows:
1. One- and Two-Family Dwellings. All new **one- and two-family dwellings** shall provide at least one (1) **EV-ready** space per **dwelling unit**.
 2. Multi-Family Dwellings. Parking for **multi-family dwellings** shall include:
 - a. **EVSE-installed spaces** for a minimum of 5% of proposed **off-street parking spaces**.
 - b. **EV-ready spaces** for a minimum of 20% of proposed **off-street parking spaces**.
 - c. **EV-capable spaces** for a minimum of 65% of proposed **off-street parking spaces**.
 3. Non-Residential Uses. Parking for uses requiring or proposing to provide 30 or more **off-street parking spaces** shall include:
 - a. **EVSE-installed spaces** for a minimum of 2% of proposed **off-street parking spaces**, with a minimum of two **EVSE-installed spaces**.
 - b. **EV-ready spaces** for a minimum of 10% of proposed **off-street parking spaces**.
 - c. **EV-capable spaces** for a minimum of 50% of proposed **off-street parking spaces**.
 4. Where the calculations above result in a fractional parking space, it shall round up to the next whole number.

5. Where the number of **EVSE-installed spaces** provided exceeds the minimum required, the excess spaces shall be deducted from the total number of required **EV-ready spaces**.
6. Where the number of **EV-ready spaces** provided exceeds the minimum required, the excess **EV-ready spaces** shall be deducted from the total number of required **EV-capable spaces**.
7. Up to five (5) **Level 2 EV-installed spaces** may be substituted with one (1) **Level 3 EV-installed space** (minimum 50kW).
8. **EVSE-installed spaces**, **EV-ready spaces**, and **EV-capable spaces** are to be included in the calculation for both the number of minimum required and maximum permitted off-street parking spaces.
 - a. Every two (2) **EVSE-installed spaces** provided in addition to the required minimum may be counted as four (4) **off-street parking spaces** as relates to Section 607.1 (Minimum Off-Street Parking Requirements), for reduction of total required parking not greater than 10 percent of the total amount of required parking.

Appendix A – Definitions

Pages 183-184 and 187:

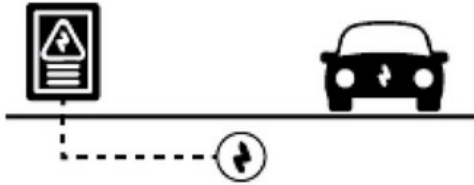


ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) / EV charging station: The apparatus installed specifically for the purpose of transferring energy between the site or building wiring and the Electric Vehicle. EVSE does not include any equipment affixed to the electric vehicle.

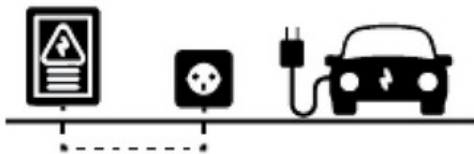
ELECTRIC VEHICLE INFRASTRUCTURE: Structures, machinery, and equipment necessary and integral to support an **electric vehicle**, including **EV charging stations** and electrical outlets.

ELECTRIC VEHICLE (EV): An automotive-type vehicle for on-road use primarily powered by an electric motor, including any battery electric vehicle, fuel cell electric vehicle, or plug-in hybrid electric vehicle, that draws current from an onboard battery charged through a building or site electrical service, **EVSE**, or other source of electric current.

EV-CAPABLE SPACE: An *off-street parking space* with electrical panel capacity and space for a branch circuit dedicated to the parking space that is not less than 40-ampere and 208/240-volt and equipped with raceways, both underground and surface mounted, to enable the future installation of **EVSE**. For two adjacent EV-capable spaces, a single branch circuit is permitted.



EV-READY SPACE: An off-street parking space provided with a full dedicated branch circuit that includes not less than 40-ampere and 208/240-volt panel capacity, conduit, wiring, receptacle, and overprotection devices terminating in an outlet, receptacle or junction box that will support an installed EVSE and which is located in close proximity to the location of the parking space. For two adjacent EV-ready spaces, a single branch circuit is permitted. These spaces are “ready to go” with the addition of an EV charging station (EVSE).



EVSE-INSTALLED SPACE: An *off-street parking space* with a dedicated branch circuit and **EVSE** for *Level 2 EV charging stations*, at minimum.

LEVEL 2: Charging level for **EVs** that operates on a dedicated 40-100 amp breaker (same kind used by a clothes dryer or stove) on a 208 or 240 volt AC circuit while drawing 6.2+ kW to supply 19+ miles of range gained per hour of charging.

LEVEL 3: Fast or rapid charging level for **EVs** that operates on a 60 amp or higher breaker on a 480 volt AC electric circuit or higher three phase circuit with special grounding equipment and mounting on an equipment pad.