



Joint Office of
**Energy and
Transportation**

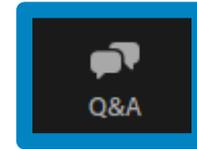
Permitting and Site Selection Strategies for EV Charging Infrastructure

2/13/2024

driveelectric.gov

Zoom Tips and Housekeeping

- Controls are located at the bottom of your screen. If they aren't appearing, move your cursor to the bottom edge.
- Submit questions using the “Q&A” window



Disclaimer

Notice: This webinar is being recorded and may be posted on the Joint Office website or used internally.

If you speak during the webinar or use video, you are presumed to consent to recording and use of your voice or image.

Agenda

Introduction from the Joint Office

Presentations

- Emily Kotz, Project Leader at National Renewable Energy Laboratory
- Courtney Ferguson, Director of eMobility at OWL Services
- Alisha Lopez, Executive Director of the Southeast Florida Clean Cities Coalition and Board Member of Drive Electric Florida
- Roy A. Eden, Building Official, Permitting Services Division, City of Orlando

Panel Discussion and Audience Q&A



Mission and Vision



JOINT OFFICE OF
**Energy and
Transportation**

Mission

To accelerate an electrified transportation system that is affordable, convenient, equitable, reliable, and safe.

Vision

A future where everyone can ride and drive electric.

Infrastructure Investment & Jobs Act (IIJA) Programs Supported by the Joint Office

The Joint Office provides unifying **guidance**, **technical assistance**, and **analysis** to support the following programs:



National Electric Vehicle Infrastructure (NEVI) Formula Program (U.S. DOT)

\$5 billion for states to build a national electric vehicle (EV) charging network along corridors, including **\$148 million** awarded to repair and replace non-operational chargers.



Charging & Fueling Infrastructure Discretionary Grant Program (U.S. DOT)

\$2.5 billion in community and corridor grants for EV charging, as well as hydrogen, natural gas, and propane fueling infrastructure



Low-No Emissions Grants Program for Transit (U.S. DOT)

\$5.6 billion in support of low- and no-emission transit bus deployments



Clean School Bus Program (U.S. EPA)

\$5 billion in support of electric school bus deployments



Polling Questions

Presenters



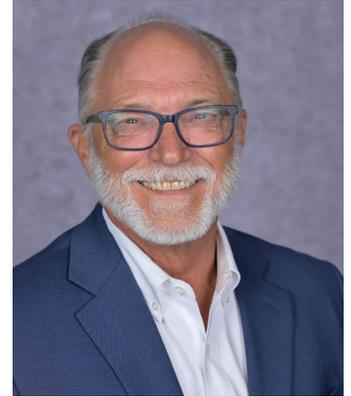
Emily Kotz
NREL



Courtney Ferguson
OWL Services



Alisha Lopez
*Southeast Florida Clean
Cities Coalition and
Drive Electric Florida*



Roy Edén
City of Orlando



Emily Kotz

Project Leader,
National Renewable Energy Laboratory

New EV Planning Content on the AFDC

Alternative Fuels Data Center

https://afdc.energy.gov/fuels/electricity_infrastructure_planning.html

FUELS & VEHICLES

CONSERVE FUEL

LOCATE STATIONS

LAWS & INCENTIVES

MORE...

[EERE](#) » [AFDC](#) » [Fuels & Vehicles](#) » [Electricity](#)

Electricity Basics

Benefits & Considerations

Stations

State and Local Infrastructure Planning

- Initial Considerations

- EV Readiness

- Funding

- Building Codes, Parking, and Zoning

- Permitting Processes

- Signage

- ADA Compliance

Procurement & Installation

Permitting Processes

Existing permitting processes should be examined to determine if they create barriers for electric vehicle (EV) infrastructure development. Several states, municipalities, and utilities provide guides to streamline the permitting process for EV charging station installation to help overcome any barriers identified. For strategies local and state governments can use to streamline EV charging station approvals see the [fact sheet, Improving Permitting and Zoning for EV Fast Charging Stations](#) , developed by the Northeast State for Coordinate Air Use Management (NESCAUM).

Below are a few examples and additional resources.

California

California required cities and counties to adopt ordinances to expedite and streamline the permitting process for EV charging station installation. To facilitate this, the state developed resources on [permitting best practices](#), including example ordinance language and checklists, as well as an [EV Charging Station Permitting Guidebook](#) .

Key requirements mandated by California include:

- Adopting ordinance language that expedites and streamlines the permitting process for EV charging stations, including Level 2 and DC fast charging
- Creating a checklist of requirements needed for expedited review that is available and easily found on the city or county website
- Allowing administrative approval of EV charging stations that meet the checklist requirements
- Limiting the permit approval to health and safety review requirements
- Accepting electronic signatures
- Making EV charging stations not subject to approval of an association (note: California adopted right-to-charge law)

Create a standardized and transparent permit review process

- Create a checklist of all requirements needed for expedited review
- Expedite approval and manage expectations by providing sample timelines or setting a timeline for all permit approvals related to EV charging stations.

Simplify review and approval process

- Allow concurrent review if multiple departments need to review
- Provide a complete deficiency notice that summarizes all additional information needed for approval
- Allow plans to be approved as noted.

Adopt an online permitting process

- Accept electronic submittals and signatures
- Make permitting checklist available online and easy to find
- Post review timeline estimates online.

Best Practices to Streamline EV Charging Station Installation

Communities Technical Assistance

driveelectric.gov/communities

The Joint Office of Energy and Transportation has partnered with NREL to offer **FREE** technical assistance to communities at all stages of interest, planning, and deployment of electric mobility technologies.

Communities Technical Assistance

JOCommunityTA@nrel.gov
driveelectric.gov/contact
(select “Community inquiry”)



[About](#) [Technical Assistance](#) [Data & Tools](#) [Publications](#) [News & Events](#) [Contact](#)

energy.gov | transportation.gov

Technical Assistance and Resources for Communities



Courtney Ferguson

Director of eMobility,
OWL Services



Best Practices in EV Permitting

Presentation - Courtney Ferguson
Director eMobility OWL Services
February 13, 2024



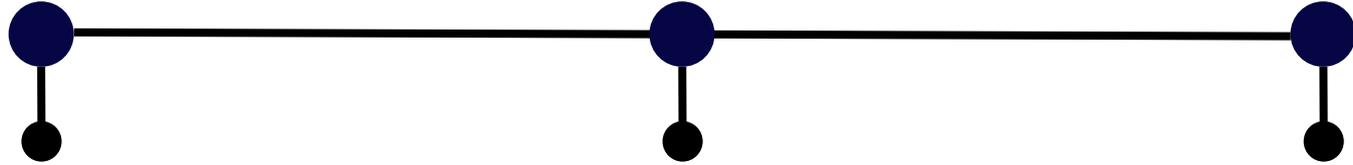
Introduction

Presentation Overview

This is a highlight of best practices in the ever evolving National Electrical Vehicle Infrastructure. Discussion is based upon experience in the public and private sectors with installation of L2 and L3 (DC fast chargers). There are ways to overcome the challenges by standardizing at the state or federal government, but until then the local jurisdictions are left to create their own requirements. Some states have implemented guides to encourage local administrations to streamline the permitting process to ensure the infrastructure is built.



PERMITTING PROCESS



AHJ (Authority Having Jurisdiction) Research

A customized checklist that is tailored to requirements needed to installing EV charging stations. The research form is used at first point of contact with the jurisdiction. It's intended to capture permits needed, submittal process, costs involved, additional requirements (i.e., licenses and registrations) approval timeline.

Permit Submission

Submitting permit applications for a project can have several requirements before construction can begin. Specifically, for DCFC (fast chargers) zoning, building, electrical permits are needed. The permits are submitted 3 different ways; via mail, email and online portal. This varies to each jurisdiction. The approval process can be from a few weeks to even a year.

Permit Obtained

Once reviews are completed that project meets all codes and standards with zoning, building and electrical departments with the AHJ (Authority Having Jurisdiction), it is time to obtain permit. Fees are collected at this time. The local jurisdiction provides contractor with a permit(s) card and approved stamped set of drawings. AHJs usually required inspections that align with permits and drawings.

PERMITTING PROCESS

Common and Suggested Questions

Plans: PDF Sets or Hard copies?
Electronic/Digital signature format?
Total number of plans needed? Wet sealed?
Need property owner approval letter?

Is a submission to the Planning Commission/ARB/PUD or separate Site Review required?
If so, what is the submittal process?

Are there landscaping or screening requirements for the electrical equipment or charging stations? Will services require a licensed landscape architect or an arborist?

Is a permit required for tree removal or for work performed within a tree's dripline? (provide requirements, procedures, ordinances, and Forester's contact information)

Is Expedited review available?
What is the additional cost and information needed for the Expedited process?

What are the permit fees based on? (S.F. or Cost of project)

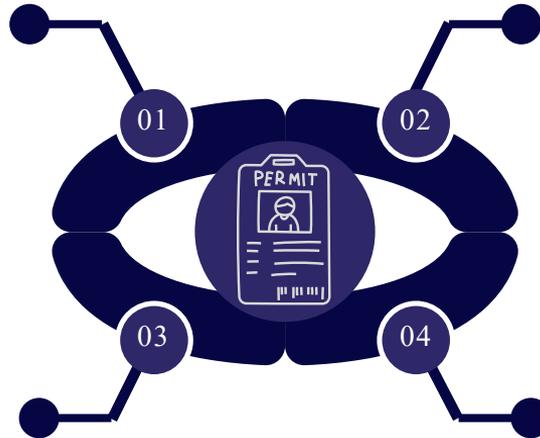
EV PERMITS

ZONING:

REVIEWS WHETHER THE PROJECT FALLS WITHIN ZONING CODES AND METS REGULATION. IF NOT, VARIANCE CAN BE DETERMINED BY JURISDICTION. THIS PERMIT IS APPROVED BY A BOARD OF INDIVIDUALS IN THE MUNICIPALITY.

BUILDING:

THIS APPLIES TO DC FAST CHARGERS IN MOST CASES. BASED UPON MANUFACTURERS INSTALLATION SPECIFICATION AND PROJECT SCOPE OF WORK IF A BUILDING PERMIT IS NEEDED. INSPECTION REQUIRED.



ELECTRICAL:

L2 AND L3 CHARGERS WILL NEED AN ELECTRICAL PERMIT BEFORE ANY WORK CAN BE PERFORMED. LOAD CALCULATIONS ARE REQUIRED AND A LICENSED ELECTRICIAN MUST DO THE INSTALLATION. ELECTRICAL INSPECTIONS REQUIRED THROUGHOUT CONSTRUCTION.

FIRE:

FIRE MARSHALL REQUIRES A FIRE PERMIT THAT ALL SAFETY GUIDELINES ARE TAKEN. THIS PERMIT REQUIRES INSPECTION UPON COMPLETION.



City of San Leandro
Division of Building & Safety Services
835 E 14th St, San Leandro, CA 94577
(510) 577-3405 www.SanLeandro.org

EV Charger
Submittal Guidelines
Revised 5/2023

Electric vehicle charging stations (EVCS) must be installed in accordance with manufacturer's installation instructions and in accordance with the 2022 California Electrical Code (CEC) based on the National Electrical Code (NEC). Wiring methods in Chapter 3 of the CEC must be applied to each installation. The EVCS must be listed by a nationally recognized testing laboratory (NRTL). NOTE: This policy applies to EVCS equipment and receptacle outlets intended for use with cord and plug type vehicle charging systems

General Process

To apply for an EV Charger building permit, prepare on a USB Flash Drive the submittal documents listed below and apply either online in our [Online Permit Portal](#) or in person at the Permit Center in City Hall.

Once digital plan reviews are complete and no further reviews are required, instructions for printing hardcopies will be given to the project Contact, who is the person responsible for relaying the permit status to interested parties. Permit Fees are due when the permit is ready to be issued.

Submittal Requirements

Save the following onto a USB flash drive. We also accept submittals which were drafted by hand.

- Application or Apply online:** Complete a [San Leandro Building Permit Application](#) only if you are applying in person. Otherwise, visit www.SanLeandro.org/PermitPortal to apply online.
- Drawings** containing the following information:
 - **Project Data:**
 - Property address and Owner name & contact information.
 - Scope of Work, how many signs to be installed, how many are illuminated or non-illuminated, etc.
 - **Plot / Floor plan:**
 - Lot dimensions, property lines, and general outline of building, scale of drawing, and North arrow
 - Show driveway, garage or parking space, proposed charging location, electric service, conduit location and disconnect.
 - Existing main panel rating, subpanel ratings, proposed charging load & calculations for stations over 220 volts and or 40 amps
- Manufacturer Specifications:** including size of charging station and installation guidelines.
- Single Line Diagram:** including the following information:
 - Conductor types and sizes
 - Size of the circuit breaker supplying the EVCS
 - Size of the main electrical panel, sub panels and disconnects.
 - Type charging station (Level 1, 2, or 3)
- Electrical Load Calculations:** Provide size of the existing electrical panel, existing load on the panel, and proposed load/circuits from the electric vehicle charging system to determine if there is adequate capacity in the existing panel. *CEC 220*

General Information

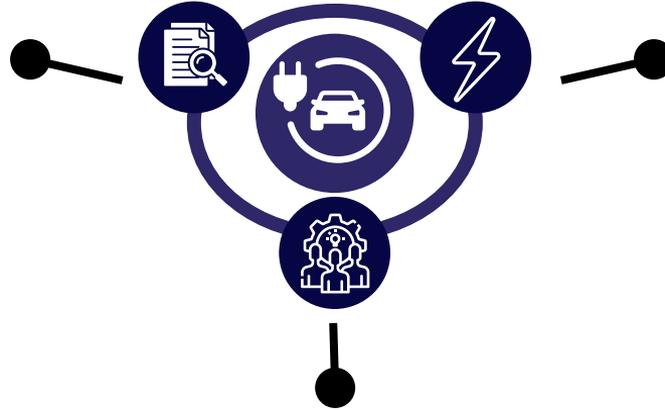
- Homeowner/Applicant to contact a licensed electrical contractor for evaluating the home electrical system to confirm there is enough amperage to support the charging station, which may cause an overload if current system is not equipped to handle it.
- Do you need to upgrade your main electrical panel? If so, you may apply for the panel upgrade at the same time as the EVCS.
- Contact PG&E to determine if the neighborhood grid can handle the proposed EVCS.
- If installed indoors, the electric vehicle charging coupling (the nozzle) shall be located between 18" and 48" above the finished floor. If installed outdoors, the electric vehicle charging coupling shall be located between 24" and 48" above the finished grade. *CEC 625.29, 625.30*
- If the electric vehicle charging equipment is located in an area subject to vehicular damage, an adequate barrier must be installed (e.g., 4" diameter steel pipe filled with concrete, a minimum of 40" above the finished floor/grade, installed in a footing measuring 12" in diameter and 3' deep). *CEC 110.27*

To Apply

When you are ready with your submittals, apply either online at www.SanLeandro.org/PermitPortal or in person at the Permit Center in City Hall. Visit www.SLPermits.As.Me to find an available appointment
Mon / Tue / Thu - 8am to 4pm and Wed - 8am to 3pm.

IMPROVE EV PERMITTING

STANDARDIZE PERMIT
APPLICATION FORMS AND
INSPECTIONS



CONSISTENT COMPLIANCE
WITH EV INFRASTRUCTURE

STANDARDIZE THE REVIEW PROCESS
AND REQUIREMENTS.



OWL Services

Thank You





Alisha Lopez

Executive Director,
Southeast Florida Clean Cities Coalition and
Board Member, Drive Electric Florida



Permitting Best Practices

February 13, 2024

Alisha Lopez
Clean Cities Director
South Florida Regional Planning Council



South Florida Regional Planning Council

- ▶ **Located in Hollywood, FL**
- ▶ **One of 10 Regional Planning Councils - Covers Broward, Miami-Dade, and Monroe Counties**
- ▶ **Program Areas-** Economic Development, Clean Cities, Local Emergency Planning Committee, Transportation and Land Use Planning, and more

Clean Cities Coalition Network

- ▶ Building partnerships to advance affordable, domestic transportation fuels and technologies
- ▶ Serve as forums for local stakeholders to connect and collaborate on saving energy and using affordable alternative fuels
- ▶ Provide grassroots support and resources on new transportation technologies and infrastructure development
- ▶ Support networks to help their stakeholders identify cost-effective solutions that work locally

Permitting Feedback

- ▶ Confusing and complex municipal codes (e.g., zoning, building, and parking codes) and associated permitting processes are commonly cited barriers to EV charger deployment.
- ▶ Many state, county, and local permitting processes lack dedicated pathways for Electric Vehicle Supply Equipment (EVSE) approval
- ▶ A streamlined and transparent permitting process is essential for swift expansion of EV charging

Recommendations

- ▶ **Online Permit Checklist:** Create an Online Checklist of all needed requirements for expedited review posted on the Authority Having Jurisdiction (AHJ) website.
- ▶ Allow administrative approval of EV charging stations that meet checklist requirements.
- ▶ **Electronic Application**
- ▶ Clarify that EVCS are not subject to approval by an association (e.g., a homeowner's association, known as "right-to-charge" laws).
- ▶ **Permit Review Timelines**

THANK YOU!

Alisha Lopez, Clean Cities Director
South Florida Regional Planning Council

alopez@sfrpc.com

(954) 924-3653



Roy Eden

Building Official,
Permitting Services Division,
City of Orlando



**Permitting Services Presents:
EV Charging Stations**

Roy Eden
Building Official

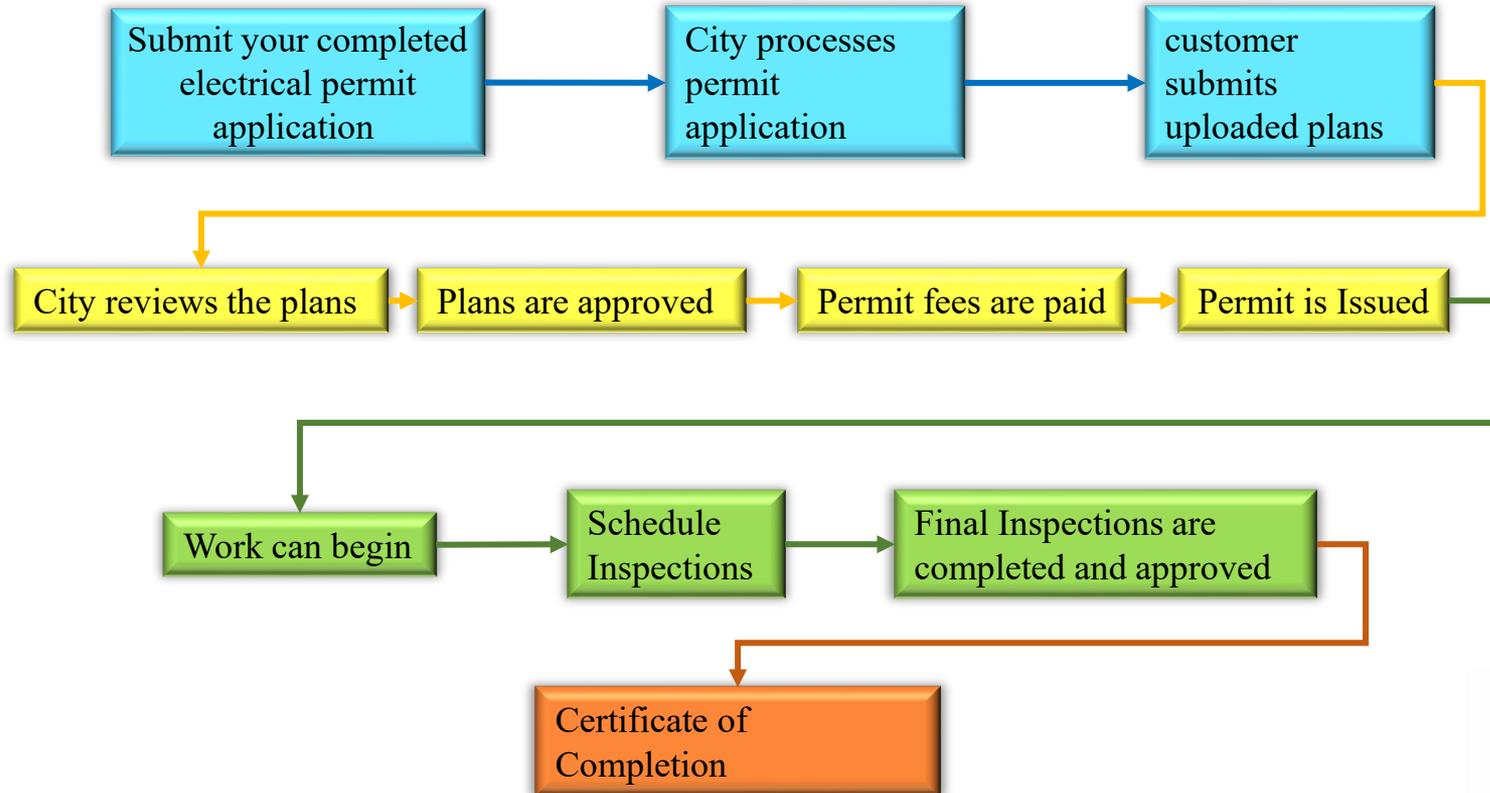


Is a permit required?

- A permit is required to install an EV charging station
- Why do I need a permit?
 - Florida building code requires a permit to ensure installation is safely installed by a licensed professional
- Who can pull the permit?
 - A state of Florida licensed electrical contractor or general contractor can pull the permit with the property owner's authorization



Overview of Permitting Process



*Average estimated plan review completion is 5-7 business days



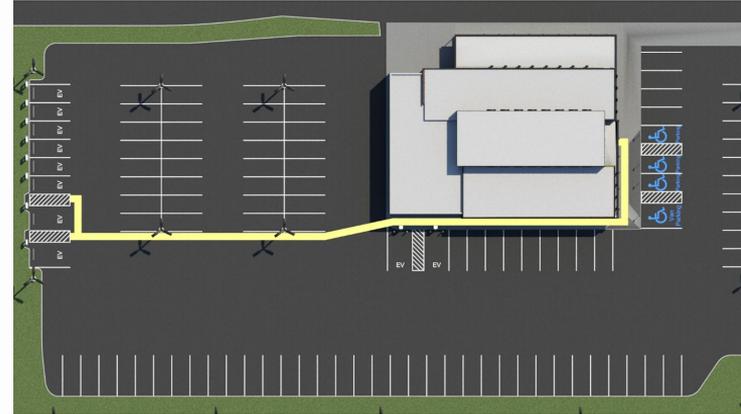
What Plans are Needed?

- Site
- Electrical
- Building

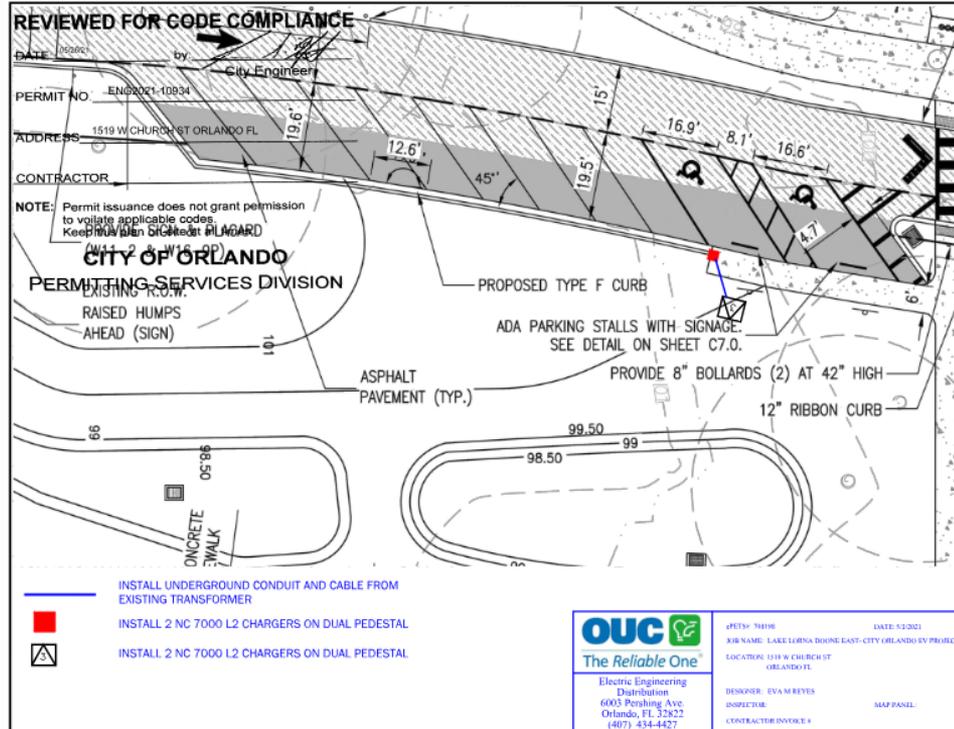


Site Plans:

- Site plans
 - Location of equipment, changes in elevation, striping
 - Charging spaces
 - Curbs & wheel stops
 - Accessible & regular charging spaces
 - Site Survey



Site Survey

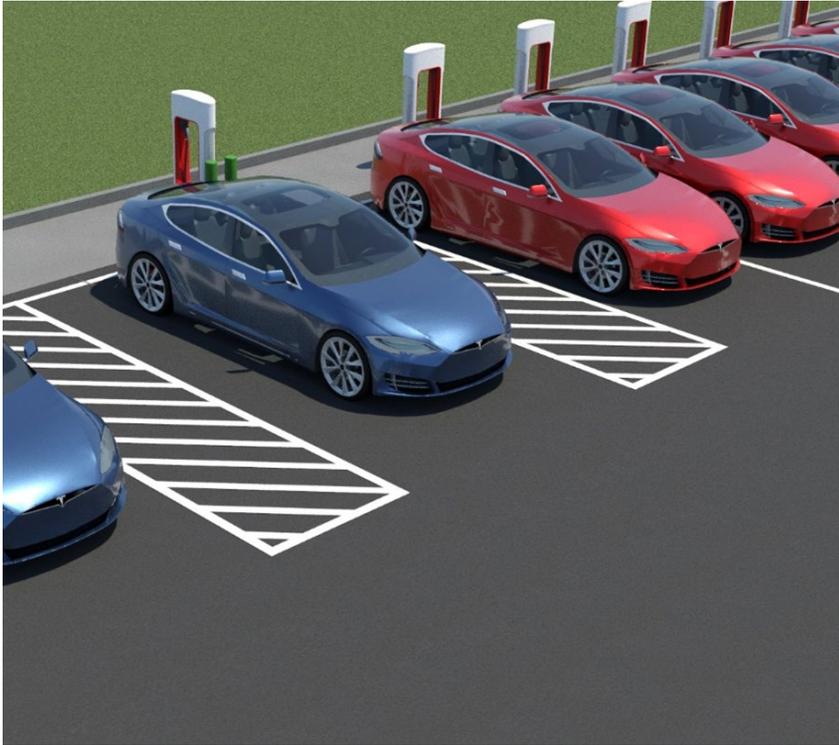


Electrical Plans:

-
- Electrical Plans
 - Power source location
 - Provide electrical one line diagram. (raceways, conductor sizes, overcurrent protection)
 - Load calculations
 - Equipment listing UL 2022
 - Manufacturers installation instructions

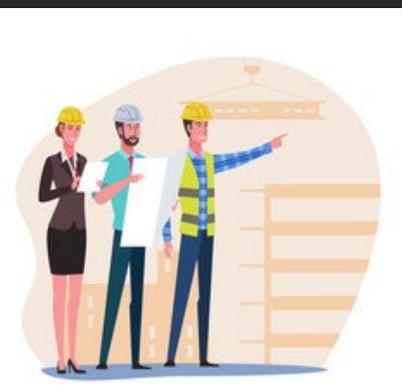
Building Plans:

-
- Building
 - If located inside of a parking structure, provide construction plans
 - Equipment details and installation instructions
 - Accessibility (i.e., barrier free, accessible route to equipment, vehicle protection, reach range of controls).



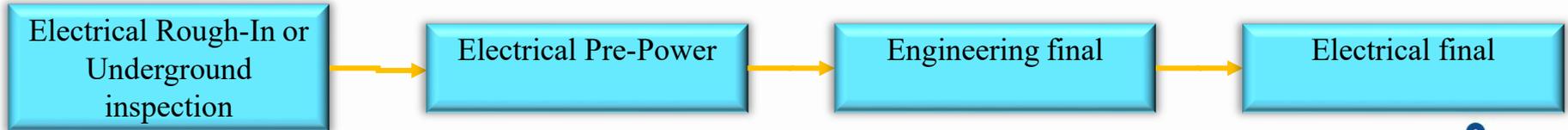


Electrical Inspections



FBC 406.1.7 Electric vehicle charging stations.

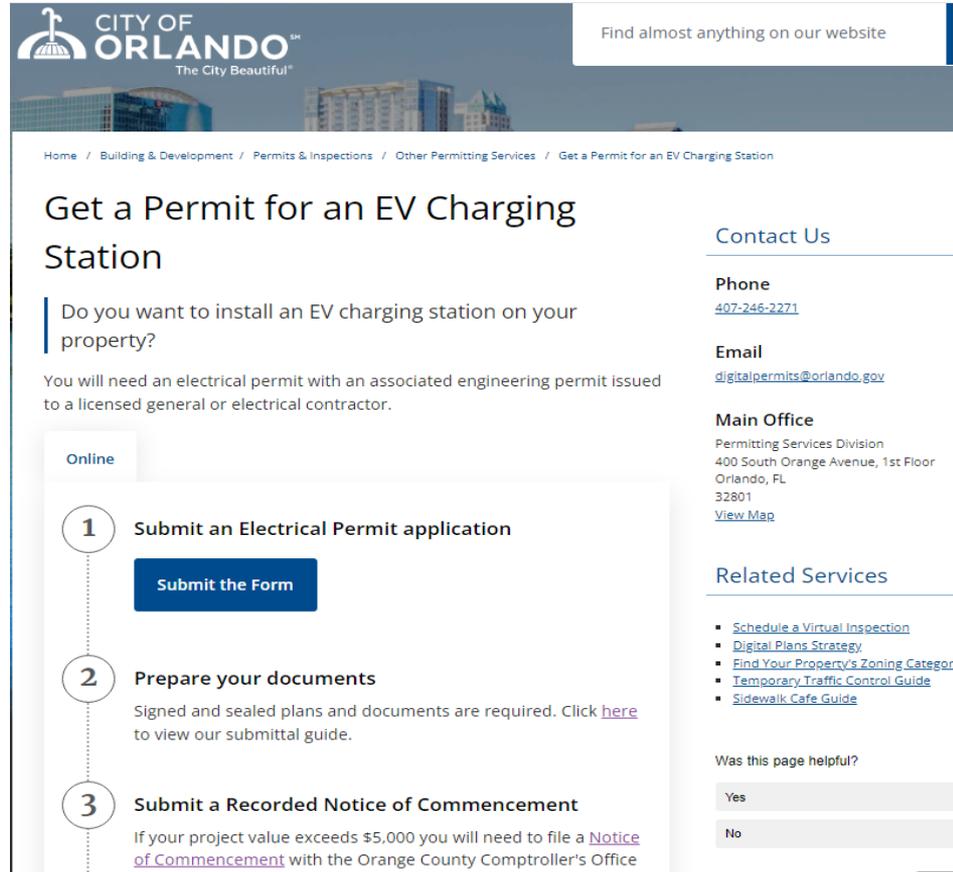
Where provided, electric vehicle charging stations shall be installed in accordance with [NFPA 70](#). Electric vehicle charging system equipment shall be listed and labeled in accordance with [UL 2202](#). Electric vehicle supply equipment shall be listed and labeled in accordance with [UL 2594](#). Accessibility to electric vehicle charging stations shall be provided in accordance with [Chapter 11](#) (Florida Building Code, Accessibility).



Electrical Inspections



Visit: [Orlando.gov/permits](https://www.orlando.gov/permits) Search: EV Charging Station



CITY OF ORLANDO™
The City Beautiful®

Find almost anything on our website

Home / Building & Development / Permits & Inspections / Other Permitting Services / Get a Permit for an EV Charging Station

Get a Permit for an EV Charging Station

Do you want to install an EV charging station on your property?

You will need an electrical permit with an associated engineering permit issued to a licensed general or electrical contractor.

Online

- 1 Submit an Electrical Permit application**
[Submit the Form](#)
- 2 Prepare your documents**
Signed and sealed plans and documents are required. Click [here](#) to view our submittal guide.
- 3 Submit a Recorded Notice of Commencement**
If your project value exceeds \$5,000 you will need to file a [Notice of Commencement](#) with the Orange County Comptroller's Office

Contact Us

Phone
[407-246-2271](tel:407-246-2271)

Email
digitalpermits@orlando.gov

Main Office
Permitting Services Division
400 South Orange Avenue, 1st Floor
Orlando, FL
32801
[View Map](#)

Related Services

- [Schedule a Virtual Inspection](#)
- [Digital Plans Strategy](#)
- [Find Your Property's Zoning Category](#)
- [Temporary Traffic Control Guide](#)
- [Sidewalk Cafe Guide](#)

Was this page helpful?

Yes

No





Questions and Answers

Resources

Florida Streamlined Permitting Best Practices **coming soon*

Alternative Fuel Data Center – Permitting Processes for Electric Vehicle Charging Infrastructure

https://afdc.energy.gov/fuels/electricity_permitting_processes.html

EV Charging Station Permitting Guidebook

<https://business.ca.gov/wp-content/uploads/2019/12/GoBIZ-EVCharging-Guidebook.pdf>

The screenshot shows the top portion of the Alternative Fuels Data Center (AFDC) website. At the top left is the U.S. Department of Energy logo with the text 'Energy Efficiency & Renewable Energy'. To the right is a navigation link: 'EERE Home | Programs & Offices | Consumer Information'. Below this is a green header with the title 'Alternative Fuels Data Center' and a search bar labeled 'Search the AFDC' with a 'SEARCH' button. A secondary navigation bar contains several menu items: 'FUELS & VEHICLES' (highlighted), 'CONSERVE FUEL', 'LOCATE STATIONS', 'LAWS & INCENTIVES', 'Maps & Data', 'Case Studies', 'Publications', 'Tools', 'About', and 'Home'. Below the navigation is a breadcrumb trail: 'EERE » AFDC » Fuels & Vehicles » Electricity'. On the right side of the breadcrumb trail is a 'Printable Version' link. The main content area features the title 'Permitting Processes for Electric Vehicle Charging Infrastructure' in green. Below the title is a paragraph of text: 'Existing permitting processes should be examined to determine if they create barriers for electric vehicle (EV) infrastructure development. Several states, municipalities, and utilities provide guides to streamline the permitting process for EV charging station installation to help overcome any barriers identified. For strategies local and state governments can use to streamline EV charging station approvals see the [fact sheet: Improving Permitting and Zoning for EV Fast Charging Stations](#), developed by the Northeast State for Coordinate Air Use Management (NESCAUM).'



Upcoming Webinar Topics

February 15th

**Navigating Zoning and
Building Codes for
EV Charging Infrastructure**

February 27th

Curbside EV Charging
Strategies

driveelectric.gov/webinars

** Some dates may be subject to change*

Thank you!

Today's Presentation:
Permitting and Site Selection Strategies for
EV Charging Infrastructure

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be posted within a few weeks here:
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