Climate Smart Communities Webinar

Telephone call-in number

• 1-866-394-2346
• Code: 1982360347#
• No audio signal will be transmitted over the Internet
Welcome

Kim Farrow
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Climate Smart Communities Webinar

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Climate Smart Communities
Webinar
Website Address
http://www.dec.ny.gov/energy/50845.html
Climate Smart Community Webinars

- January 9, 10:30 a.m. *The City of Kingston Tidal Waterfront Flooding Task Force: Process and Recommendations*
- February 13, 10:30 a.m. *U.S. Environmental Protection Agency Tools for Local Governments*

Coming Events

New York Land Use Toolkit

available at http://www.dec.ny.gov/energy/50845.html

A tool for New York municipal leaders and planners.
What does the toolkit do?

• Provides customized list of practices to help communities reduce their greenhouse gas emissions and become more sustainable.

• Provides links to examples, guidance documents, background information, and case studies on those practices.

• Provides an opportunity for New York municipalities to showcase their practices and success stories.
Notes Regarding the Toolkit

• Recent events have show how important real, live users are.
• Examples and questions are welcome.
• Stories are also welcome. The toolkit invites feedback.
Getting Started

LAND USE TOOLKIT
A tool for New York municipal leaders and planners

OVERVIEW
The Land Use Toolkit allows New York communities to find recommended practices that will help to reduce greenhouse gas emissions specifically in the areas of land-use, transportation policy, green building, infrastructure investment, green infrastructure, and housing policy. The toolkit is designed to provide results based on local characteristics and priorities. Please note that at this time the toolkit does not contain a database of each community's existing codes, practices, or ordinances. If you have a local practice that you would like to add to the toolkit, contact us.

INSTRUCTIONS
Use the drop down boxes on the right to first choose a county and then a city, town or village.

http://www.dec.ny.gov/energy/50845.html
Thank you

Veda Truesdale
Veda.truesdale@ejb.rutgers.edu
Why This Matters

- Building codes allow for, but don’t encourage, EVSE
- Comprehensive plans likely don’t mention EVs or EVSE
- Most zoning and parking ordinances are silent on EVSE
- Allowable settings for EVSE may not be be well considered
- There are different types of EVSE, approvals should only be given for those that serve the intended purpose
- Municipalities have wide jurisdiction and can greatly influence technology adoptions and EV readiness
Permit processes and fees can vary significantly

<table>
<thead>
<tr>
<th>Region</th>
<th>Count of Permits</th>
<th>Average Permit Fee</th>
<th>Minimum Permit Fee</th>
<th>Maximum Permit Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>66</td>
<td>$96.11</td>
<td>$26.25</td>
<td>$280.80</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>109</td>
<td>$83.99</td>
<td>$45.70</td>
<td>$218.76</td>
</tr>
<tr>
<td>San Diego</td>
<td>496</td>
<td>$213.30</td>
<td>$12.00</td>
<td>$409.23</td>
</tr>
<tr>
<td>San Francisco</td>
<td>401</td>
<td>$147.57</td>
<td>$29.00</td>
<td>$500.00</td>
</tr>
<tr>
<td>Tennessee</td>
<td>322</td>
<td>$47.15</td>
<td>$7.50</td>
<td>$108.00</td>
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<tr>
<td>Oregon</td>
<td>316</td>
<td>$40.98</td>
<td>$12.84</td>
<td>$355.04</td>
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<td>Washington</td>
<td>497</td>
<td>$78.27</td>
<td>$27.70</td>
<td>$317.25</td>
</tr>
</tbody>
</table>

Data from EV Project compiled by Idaho National Laboratory

Unfamiliarity can waste time and money by the clerk, inspector, installer, and owner.
What Can Be Done

- Building code, permitting, or zoning and parking ordinance amendments to promote EVs
- City-wide or regional plans to identify prime locations for EVSE
- Site design guidance for public and private parking facilities
- Signage standardization
EVSE PERMIT PROCESS
BEST PRACTICES
“Minor Work” Classification for Residential EVSE

- Typically specify requirements for using this method
  - Private garage
  - 200A service
  - Breaker within sight
- Lower permit cost
- Less processing time

Examples
- New Jersey, Oregon
- Raleigh, San Francisco
Online Permits for Residential EVSE

- Simpler, faster, and cheaper

Examples

- Virginia
- Cary (NC)
- Houston (TX)
- Los Angeles (CA)
- Sunnyvale (CA)
Permit Best Practices

Installation Guidelines

- Clarifies the requirements (applicable codes)
- Best practices to siting and design

Application for Installation of Electric Vehicle Charging Equipment

NOTICE: The system must be installed in compliance with the National Electric Code® NFPA 70, Article 625 Electric Vehicle Charging System or applicable electrical code currently adopted and enforced within the jurisdiction of installation. All associated work with circuits, electrical service and meters shall be completed in compliance with NFPA 70, national electric code, or applicable electrical code currently adopted and enforced within the jurisdiction of installation.

Section 1: Permit Applicant Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Installation Street Address (P.O. box not acceptable):</th>
<th>Contact Person:</th>
<th>Phone Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>City: County: State: ZIP Code:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner Name:</td>
<td>Address:</td>
<td>Phone Number:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td>State:</td>
<td>ZIP Code:</td>
<td></td>
</tr>
<tr>
<td>Submitter's Name/Company</td>
<td>Street Address:</td>
<td>Phone Number:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td>State:</td>
<td>ZIP Code:</td>
<td></td>
</tr>
</tbody>
</table>

General description of equipment to be installed:

Section 2: Permit Code Information

Requirements for wiring a charging station are taken directly out of the 2011 edition of the National Electrical Code® (NEC) NFPA 70, Article 625 Electric Vehicle Charging System. This article does not provide all of the information necessary for the installation of electric vehicle charging equipment. Please refer to the current edition of the electrical code adopted by the local jurisdiction for additional installation requirements. Reference to the 2011 NEC may be made at www.nfpa.org/70.

<table>
<thead>
<tr>
<th>NEC® Chapter or Article</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch Circuit</td>
<td>A new electrical box added on a branch circuit shall comply with NFPA 70 National Electrical Code® Chapter 2 Wiring and Protection and Chapter 3 Wiring Methods and Materials and all administrative requirements of the NEC or the electrical code in effect in the jurisdiction</td>
</tr>
<tr>
<td>625.4 VOLTAGES</td>
<td>Unless other Voltages are specified, the nominal ac system voltages of 120, 120/240, 208Y/120, 240, 480Y/277, 480, 600V/347, and 600 Volt shall be used to supply equipment</td>
</tr>
<tr>
<td>625.5 LISTED OR LABELED</td>
<td>All electrical materials, devices, fittings, and associated equipment shall be listed or labeled</td>
</tr>
</tbody>
</table>

12/08/21
## EVSE LOAD CALCULATION WORKSHEET

**PROJECT ADDRESS**

**GENERAL LIGHTING LOAD**
- Your home’s square footage: ___________ X 3 VA = ___________
- Small appliance branch circuits (2 min.): 1500 VA X _____ circuits
- Laundry circuit: 1500 VA X _____ circuit(s)

**APPLIANCES AND EQUIPMENT** - Values are minimums, use actual values if known to be greater. Enter N/A if not present at project site.
- Microwave (in dedicated space): 1300
- Compactor: 1000
- Dishwasher: 1200
- Disposal: 800
- Proposed EVSE circuit: 7200
- Pool/Spa Pump 1 horsepower: 1920
- Pool/Spa Pump 1.5 horsepower: 2400
- Pool/Spa Pump 2 horsepower: 2880

*Attach additional sheets if needed*

<table>
<thead>
<tr>
<th>Description</th>
<th>VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microwave</td>
<td>1300</td>
</tr>
<tr>
<td>Compactor</td>
<td>1000</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>1200</td>
</tr>
<tr>
<td>Disposal</td>
<td>800</td>
</tr>
<tr>
<td>Proposed EVSE circuit</td>
<td>7200</td>
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<tr>
<td>Pool/Spa Pump 1 horsepower</td>
<td>1920</td>
</tr>
<tr>
<td>Pool/Spa Pump 1.5 horsepower</td>
<td>2400</td>
</tr>
<tr>
<td>Pool/Spa Pump 2 horsepower</td>
<td>2880</td>
</tr>
</tbody>
</table>

Subtotal (A) ___________

Subtotal (A) minus 10,000 VA = ___________

Subtotal (B) ___________

Total A/C Load, use nameplate rating or A/C circuit breaker rating (C) ___________

D = (B) + (C) ___________

Total demand is D / 240V = ___________ Amps. If this value is less than the rating of the existing electrical service or subpanel NO service or subpanel upgrade is necessary. If the value is greater, an EVSE permit may only be issued if a panel upgrade is included with the work; a subpanel upgrade requires a plan submittal.
Permit Best Practices

Utility Notifications

- Process to share data with Utility (checkbox for permission)
- Utility contact information, reasons to inform them of your EVSE (special rate programs, avoid overloading transformers)

Self-Inspections

- Qualified Electricians approved to self-inspect the system
- Must first complete a set number of successful installations with no issues found during the inspections
- Continue to conduct random inspections at the jurisdictions discretion
EVSE ZONING AND PARKING BEST PRACTICES
Methuen, Massachusetts adopted an addendum to the city zoning resolution that specifies permissible use of level 1 and level 2 charging stations in residential zones. Level 1 and 2 permitted as accessory uses to parking facilities in all areas. DC fast charge permitted as principal use in commercial or industrial zones or conditional use in general.

- Permit EVSE in logical locations
- Defining EVs and EVSE as a permissible use
- Set out high-level criteria for design and accessibility
- Encourage or incentivize EVSE pre-wiring or infrastructure in new development (provide development bonuses, recognition)
- Require EVSE pre-wiring or infrastructure in new development
Vancouver
- 20% of parking spaces in multi-family homes must be wired for EVSE and must provide space in electrical room for electrical expansion to service 100% EVs

Sunnyvale, CA
- At least one EVSE per installation be wheelchair-accessible

California’s CALGreen
- Includes “tiers” of compliance in the voluntary appendices, so that jurisdictions adopting the code can choose the level of enforcement most appropriate for the local market

**Designated Parking.** Provide designated parking, by means of permanent markings or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles.

<table>
<thead>
<tr>
<th>Mandatory</th>
<th>8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary (Tier 1)</td>
<td>10%</td>
</tr>
<tr>
<td>Voluntary (Tier 2)</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Electric vehicle supply wiring.** For each space, provide one 12- VAC 20 amp and one 208/240 V 40 amp, grounded AC outlets or panel capacity and conduit installed for future outlets.

<table>
<thead>
<tr>
<th>Total Parking Spaces</th>
<th>Required EVSE wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50</td>
<td>1</td>
</tr>
<tr>
<td>51-200</td>
<td>2</td>
</tr>
<tr>
<td>201 and over</td>
<td>4</td>
</tr>
</tbody>
</table>
Parking

**Signage**

- Symbols that have not been adopted in the USDOT Manual of Uniform Traffic Control Devices (MUTCD) cannot be used outside of official tested applications.

- The term “charging” should be used to ensure hybrid vehicles do not use the spaces for parking and plugin electric vehicles vacate the spot once fully charged.
**Enforcement**

- Signage must be clear and consistent
- Don’t let EV drivers get ICE’d
- Establish laws to ticket or tow vehicles that should not be in an EV parking space

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**Raleigh City Council adopted an Ordinance as follows:**

Spaces designated as reserved for electric vehicles shall be clearly marked as such. When a space has been so marked no person shall park or stand any nonelectric vehicle in that space. If an electric vehicle is parked in such a designated space but is not attached to the charging station it is in violation of this ordinance. Any nonelectric vehicle so parked is subject to civil fine or removal. The fine for violation of this ordinance is fifty dollars ($50.00) and shall be collected in the same manner and with the same penalties for late payment as other on street parking violations.

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**Additional benefits for EV drivers**

- Use of HOV lanes
- Waive parking fees

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Owners of zero-emission vehicles in Santa Monica can park for free, provided that the vehicle is at a metered stall and has a current and valid permit (HOV or other tag identifying it as zero emission).
ENERGETICS
A Subsidiary of USE Corporation

nyserda

CLEANER, GREENER COMMUNITIES PROGRAM, PHASE II IMPLEMENTATION GRANTS

PROGRAM OPPORTUNITY NOTICE (PON) 2721
Eligible Applicants

- Entities having jurisdiction for permitting, land use planning, and zoning are eligible applicants.

Funding Awards

- $2,500 per project for applicants representing a population up to 30,000 residents.
- $5,000 per project for applicants representing a population larger than 30,000 residents.
- Applications must be submitted AFTER all work has been completed with all relevant documentation attached.
Program Participation Requirements

1) Demonstrate that permitting fees for EVSE installations are in line with other similar procedures in the jurisdiction

2) Incorporate a step into the permitting process by which the building owner must notify the local electric utility of the EVSE installation

3) Incorporate a streamlined EVSE permitting process

4) Incorporate zoning or parking ordinances that encourage EV use
Streamlined EVSE Permitting Process

- **Minor Work Classification**: update permitting process to define EVSE installations as “minor work” and that the permitting process for EVSE installations now consists of a simplified application process and permitting fees consistent with similar “minor work”

OR

- **Permitting Template**: where the existing permitting procedures do not properly facilitate EVSE installations, a separate permit specific to EVSE should be created that includes an EVSE load calculation worksheet
Zoning or Parking Ordinances for EVs

- **Zoning:** clarifying zoning ordinances by defining an “electric vehicle charging station” and what type of electric vehicle charging is permissible in each zoning category OR define “electric vehicle charging” as an accessory use for appropriate zoning categories

- **Parking:** eliminate hourly parking fees at public lots for EVs (where applicable) and bar cars that are not charging from parking in designated EVSE-adjacent parking spaces
Consolidated Funding Application (CFA)

Applications will be reviewed starting July 1, 2013 and until September 30, 2014 or until funds are exhausted ($1M total for EVSE and PV permit streamlining)

Contact CGC@nyserda.ny.gov for guidance
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