

Seattle Permits

— part of a multi-departmental City of Seattle series on getting a permit

Installation of Electric Vehicle (EV) Charger for Commercial Properties

Sept. 15, 2011

This Client Assistance Memo (CAM) is designed to help guide you through the process of establishing an electrical vehicle (EV) charging infrastructure in commercial properties. It provides general information on what you need to know about the type of equipment required to support an electrical vehicle, and how to apply for a permit to install the vehicle charging station.

Electric Vehicle

An electric vehicle (EV) uses one or more electric motors for propulsion and runs on a rechargeable battery. Electric vehicles can have a positive impact on the environment as they release almost no air pollutants and they have less noise pollution than regular motor vehicles. There is a variety of makes and models for EV currently available on the market. The level of charging required for individual battery modules vary widely depending on the manufacturer of the vehicle. All charging equipment installed in the city of Seattle must be listed by a nationally recognized testing laboratory. Currently, there are several manufacturers producing listed vehicle charging stations.

Car companies and utilities are working together to develop communication capabilities between the cars and the grid that will further reduce the chance of overloading the electrical service and feeder equipment.

Things to Consider

Before purchasing an electrical vehicle charging station, you will need to evaluate the adequacy of the electrical service on your property. We recommend using a state licensed and bonded electrical contractor to evaluate your electrical system.

After determining your service or feeder panel has adequate capacity for additional loads, installing an EV charging station in your parking garage may simply be a matter of installing a new breaker in the sub-panel feeding the garage and routing a raceway to the location of the proposed charging station. However, if you intend to install multiple charging stations, the service or feeder may not be adequate for the additional circuitry required and may necessitate the replacement of existing, or the addition of new, electrical equipment to accommodate the installation.

Adding the equipment needed to supply power to the charging stations will require floor space with adequate working clearances for electrical safety. The new sub-panels will need to be located in an area that will meet the minimum requirements for working space.

Another factor to consider is where you intend to locate the charging station(s) in relation to the location of the electrical equipment that will serve the load. Depending on the location of this equipment, installing charging stations may be a simple task or it could add a significant cost. Routing raceways to feed the charging stations in an existing garage may require special considerations; penetrating firewalls, supporting or securing raceways to the existing structure, locating a path that will not obstruct traffic flow may be a challenge; or the need for construction in the right-of-way and/or relocating utilities may increase the cost of the project.

Some of the challenges that you may need to address when installing vehicle charging stations in commercial properties are:

- Does the property service equipment have adequate capacity for the additional power requirements for electric vehicle charging?
- Does the electrical service room have sufficient space for the additional electrical equipment that will be needed to supply power to the charging station(s)?

www.seattle.gov/dpd



- How will you intercept the power to feed a new sub-panel dedicated to EV charging or the charging station(s)?
- How will electrical raceways or cables be routed to the charging station(s) location from the electrical service room or from the alternative location?
- Will the parking space be dedicated to EV charging or will it be multipurpose?

We suggest contacting a Department of Planning and Development (DPD) land use planner to discuss assignment of parking spaces for utilization of EV charging stations; and, consult with an electrical professional (such as an Electrical Engineer or a Licensed and Bonded Electrical Contractor) prior to making a final decision as to the adequacy of the proposed installation.

Permit Requirements

In general, the person installing the EV charging stations obtains the required permits. State law requires the work to be done by a state licensed and bonded electrical contractor; or you, as the property owner may do the work yourself. For permit information, applicants can contact DPD's over-the-counter (OTC) Permit Center at (206) 684-8464.

Electrical Permit

Electrical permits are required for all electrical vehicle charger installations. There are three (3) levels of charge associated with electric vehicles:

- Level I Charge – trickle charge; 120 volt outlet overnight charging (not likely to be used in commercial properties). This type of charging will take up to 24 hours to fully charge a battery. A permit will be required if a new outlet is installed or an existing outlet is extended to provide power to the charging station.
- Level II Charge – four to six hours to charge (240 volts, 30 amps continuous load). This will be the most common charger for commercial applications in parking garages.
- Level III Charge (D/C Fast Charge) – capable of providing a full charge in less than 30 minutes (208 volts at 200 amps or 480 volts at 89 amps). This charging station will provide the fastest charge. It will also consume high levels of electricity and more than likely require increasing the electrical service capacity for the parking garage or electrical service to the property.

Electrical permits for EV charging stations may be obtained on-line or over the counter at DPD's Applicant Services Center (ASC). Electrical permits for a Level II and III charger system that require 400 amps or larger services or feeders will require plan review. Applications for electrical plan review may be submitted to the DPD's Applicant Service Center's Electrical permit counter.

Permit fees will vary depending on the size and complexity of the system. Visit our web site at www.seattle.gov/dpd for additional information regarding submitting permits and DPD's fee schedule. Technical questions may be directed to DPD's electrical technical support line at (206) 684-5383.

Scheduling an Electrical Inspection

To request an inspection you will need to have the permit number available. Inspection requests can be scheduled by telephone or on DPD's website. Inspections are conducted daily Monday through Friday. An inspection scheduled by 7:00 a.m. will normally be conducted the same day. Schedule the inspection after 7:00 a.m.

To schedule an inspection, call our 24-hour inspection line at (206) 684-8900. Have your permit number available and follow the step-by-step instructions on the automated message system. In addition to scheduling an inspection on the automated line, you may also get inspection results and cancel an inspection. You can leave a voice message with your inspection request, if necessary. Provide any information the inspector will need or indicate you need to be contacted prior to the inspection.

To schedule an inspection on the website, please go to <http://www.seattle.gov/dpd/Permits/Inspections/default.asp>. Click on the 'Request an Inspection' link to schedule the inspection. All you need is your permit number and the automated system will guide you through the rest. You can also get inspection details by following the directions on the 'Request an Inspection' page. If you need to be contacted prior to the inspection, use the "Contact Info" field to provide your phone number and contact information. You can use the "Contact Info" field to send a message with additional information to the inspector.

When to Schedule an Inspection

The type and number of inspections required vary according to the type of work being performed and the permit issued. For example, the electrical permit

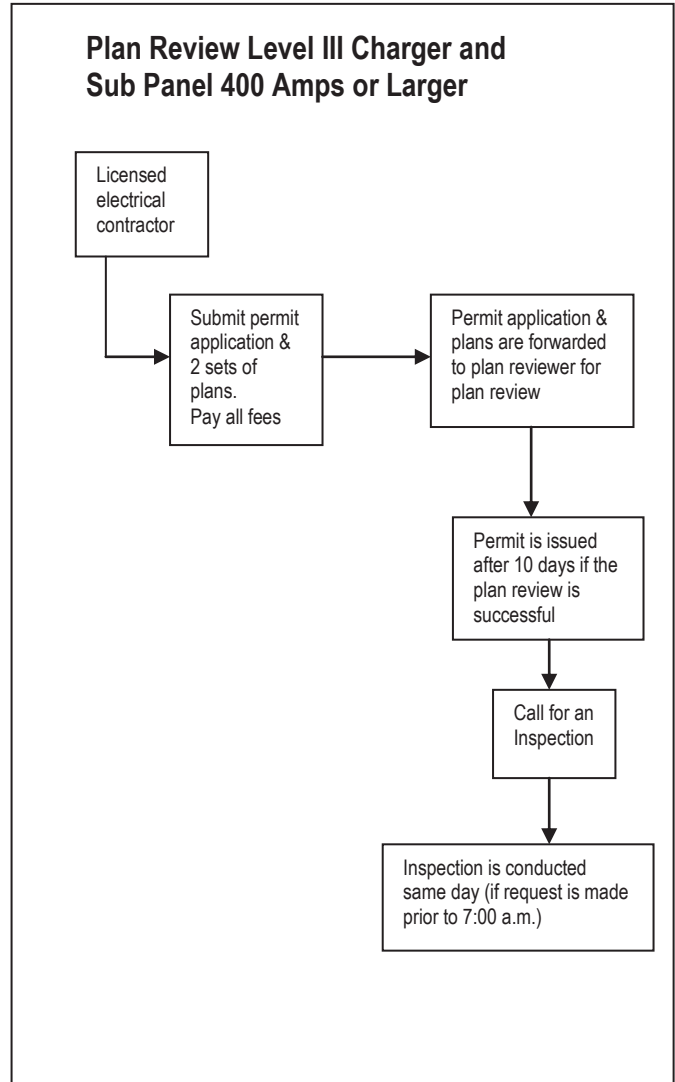
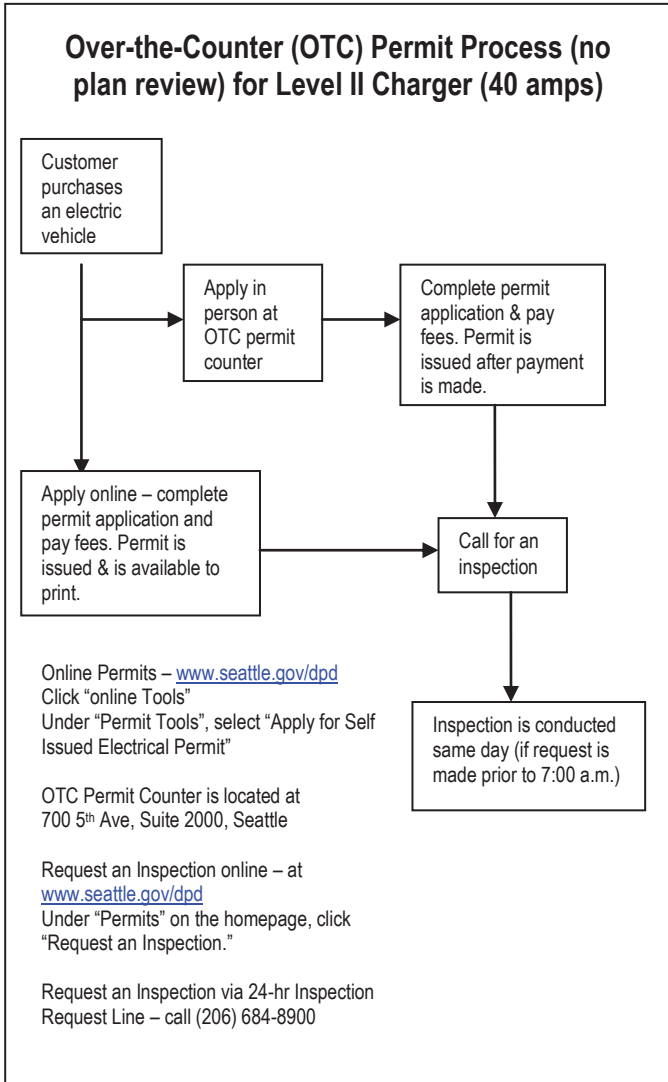
may require a cover inspection. Generally speaking, before any hole (filled with concrete or dirt), wall, or ceiling is covered an inspection should be conducted. Your project does not need to be 100 percent complete to receive an inspection. You may schedule an inspection on the portion that is complete and another inspection for the remainder of your work. If you are unsure of when an inspection should be conducted, contact the inspector responsible for the work at your location to confirm the appropriate time.

Day of Inspection

The property owner or their representative (employee, contractor, etc.) must be present on the day of inspection (DPD's staff will not enter an occupied property without a responsible party present). Vacant properties can be inspected without a responsible party present. You may request either a morning or afternoon inspection. Our staff will attempt to accommodate your request. However, due to volumes of work and workload balancing this may not be possible. If you need a more specific time and/or a morning/afternoon is critical to you, then you will need to contact your inspector directly before they leave the office in the morning; Inspectors are available between 7:30 and 8:30 a.m. Inspector's telephone numbers and the area they inspect can be determined by visiting http://www.seattle.gov/dpd/Permits/Inspections/Requesting_an_Inspection/default.asp on DPD's website. If you do not know who your inspector is, call (206) 684-8950 to speak with an associate who can help you. You can also find the inspector assigned to your project by researching the Permit and Complaint status report at the following web site: <http://web1.seattle.gov/DPD/permitstatus>.

Your inspector will be identified on the inspection requested under the 'Inspections' tab after 9:00 a.m. on the day of your inspection.

The flowcharts on the following page will assist you with the permitting and inspection process.



Seattle City Light

If the evaluation of your existing electric service by a qualified electrical contractor indicates it is not adequate, you will need to contact Seattle City Light prior to starting any work. If the proposed service upgrade exceeds 200 amps or is greater than 120/240 volts, you will be required to complete an electrical service application package and submit it to SCL.

After a review of your request Seattle City Light will provide instructions on the appropriate location for your new or upgraded service point, the cost for connecting your new or upgraded service, and the steps to follow to make this all happen. To speak with an electric service representative please contact Seattle City Light at:

- North of Denny Way at (206) 615-0600
- South of Denny Way at (206) 386-4200

Additional information regarding the process for a new or upgraded electric service can also be found at www.seattle.gov/light/electricservice.

The following basic steps are generally required for upgrading or installing a new service:

1. Contact electric service representative for your location.
2. Complete and submit electrical service application package.
3. Install new electrical service.
4. Schedule inspection with a DPD electrical inspector.
5. Notify electric service representative once installation is complete and has been approved by a DPD electrical inspector.

Ensure all Seattle City Light connection fees are paid.

Other Important Information:

We recommend contacting Seattle City Light prior to commencing any work as Codes and processes may change.

Due to the complexity of electrical services over 200 amperes and underground electric services, plans will be required and a review will be conducted by a Seattle City Light engineering group. Please allow additional time for the review and for crew work. Your electric service representative can provide you an estimate of time frames for this work.

Seattle City Light charges a fee for new service connections and electric service upgrades. The fee is based on size of the service and the complexity of the installation. Large services and underground services are the most costly.

All new or upgraded services must be inspected by both DPD Electrical Inspectors and a Seattle City Light electrical service representative. Please be sure you notify your electric service representative when your service installation is complete and inspected and approved by DPD.

For information regarding your new service or service upgrade, including cost estimates and estimates of time frames for work, contact Seattle City Light at (206) 615-0600. Additional information, including a copy of the electric service application can be found at the Seattle City Light website at www.seattle.gov/light/electricservice.