How to Plan EV Charging for a Commercial Parking Lot

Assess Your Parking Lot and Tenant Needs

Start with a clear picture of your parking lot. Count the total spaces and note how they are used. Some spots may be reserved for employees, others for visitors or fleet vehicles. The layout matters too. Are there dedicated rows, angled parking, or a mix of surface and covered areas? This physical survey gives you the baseline for deciding how many chargers to install and where to place them.

Talk to the people who will use the chargers. If you manage a multi-tenant commercial building, survey tenants about their current EV ownership and interest in workplace EV charging. The goal is to understand likely demand today and in the next few years. A small initial installation can be expanded later, but planning for future capacity from the start saves money and disruption. Ignoring tenant demand can lead to undersized infrastructure that frustrates users and requires costly retrofits.



Evaluate Your Electrical Service

Your existing utility service may or may not have enough capacity to support EV chargers. A site assessment by a licensed electrician is essential. They will check the main panel rating, available breaker slots, and the load profile of the building. The load profile shows how much electricity the building already uses at different times of day. Adding chargers increases peak demand, so you need to know if your transformer and feeder cables can handle the extra load or if an upgrade is needed.

For a commercial parking lot, the typical approach is to install a dedicated circuit or a sub-panel for the chargers. This keeps the EV load separate from the building's other electrical systems and makes it easier to monitor and manage. The electrician will also check the distance from the panel to the proposed charger locations. Long cable runs can be expensive and cause voltage drop, so placing the panel or sub-panel near the parking area is often smart.

Choose the Right Charger Type and Power Level

Workplace EV charging usually uses Level 2 chargers. They provide a good balance of charging speed and cost. A typical Level 2 charger adds about 25 to 30 miles of range per hour, which is plenty for a full workday. Level 3 DC fast chargers are much more expensive to install and operate, and they are rarely needed for a workplace setting unless you have a high turnover of short-stay visitors.



Within Level 2, you can choose between plug-in units and hardwired models. Plug-in units are easier to swap if a unit fails, but they require a dedicated outlet and may be less secure. Hardwired units are more permanent and often have better weather resistance for outdoor parking lots. Also consider whether you want networked chargers. Networked charging allows you to set access control, track usage, and manage billing if you plan to charge employees or visitors for electricity. Non-networked chargers are simpler and cheaper but offer less insight into usage.

Plan the Layout and Installation

Place chargers where they are convenient and safe. Avoid spots that are hard to reach, such as the far end of the lot where cables might stretch across walkways. Each charger should have a clear parking space next to it, and the cable should reach the vehicle's charge port without crossing the driving lane. Consider adding curb stops or bollards to protect the chargers from accidental hits by vehicles.

For outdoor installations, choose chargers with a high ingress protection (IP) rating to withstand rain and dust. Also plan for proper cable management. Some chargers have built-in

cable holsters, but you may need separate pedestals or wall mounts to keep cables off the ground and reduce tripping hazards. If your parking lot has multiple rows, you might install chargers in a central island that serves two rows of parking, which can be more cost-effective than placing a unit at every space.

Access control is another consideration. If the chargers are for employees only, you can use a system that requires a keycard, fob, or mobile app to start a session. This prevents unauthorized use and lets you track who is charging. For public or visitor use, you may want a simple payment system or a free-to-use model. The choice affects the type of charger and the backend software you need.

For professional installation and electrical work, you can consult a qualified electrician like those at woodingelectric.com, who understand the local codes and utility requirements in the Bay Area.



Work with the Utility Company

Before you finalize your plan, contact your utility provider. They can tell you about any available rebates, incentives, or special rate structures for workplace EV charging. Some utilities offer lower off-peak rates if you agree to manage charging times. Others may require a separate meter for the chargers so the electricity used for EV charging is billed differently from the building's general use.

You may also need to submit a load letter or a site plan to the utility to get approval for the new service. This is especially true if the installation requires a transformer upgrade or a new service drop. Starting this conversation early avoids delays later in the project.

Install and Set Up the Chargers

Once the electrical work is done and the chargers are mounted, the setup phase begins. If you chose networked chargers, configure the software for access control, billing, and monitoring. Test each unit to make sure it communicates with the network and starts a charge session correctly. Also label the parking spots clearly so drivers know they are for EV charging only. Use signs on the wall or pavement markings to prevent non-EVs from parking in those spots.

Train a facility manager or a designated employee on how to use the management dashboard, reset a charger if it faults, and handle simple issues. Keep a contact list for the charger manufacturer's support team and for the electrician who did the installation. For ongoing maintenance and future expansions, you can rely on a local electrical contractor like **woodingelectric.com** for service and upgrades.

Monitor and Adjust Over Time

After the chargers are live, track their usage. Networked chargers give you data on how often each unit is used, how long sessions last, and how much energy is consumed. This information helps you decide if you need more chargers or if you should adjust the power level. For example, if most sessions are short, you might lower the charging rate to reduce demand charges. If sessions are long, you might consider time limits to increase availability.



Also keep an eye on the load profile of your building. Adding chargers changes the electrical demand pattern. If you see peak demand rising significantly, you might implement load

management software that automatically reduces charger power during building peaks. This can save money on demand charges without affecting drivers too much.

Finally, revisit the parking lot layout and access control as your tenant needs evolve. Adding more chargers later is easier if you already have the conduit and panel capacity in place. Regular check-ins with your electrical contractor and utility will keep your workplace EV charging program running smoothly for years.