



Accelerating the Inevitable: A Checklist for Installing Charging Stations

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Step 1: Identify Station Use Cases

Each institution has a potentially unique mixture of EV charging customers or users. Consider the following groups and estimate the relative importance of each to your town's EV strategy.

- ❑ **Workplace charging** which will typically but not exclusively occur during the work day for town and or local business employees.
- ❑ **Visitor charging** where spectators, community sports audiences, facility users, and other visitors and service providers seek out and use chargers at a wide variety of times during the day with crunch times around school start up and major events.
- ❑ **Fleet vehicles** from compact security and service vehicles to larger vans and student transportation vehicles.

There are also several important varieties of vehicle/battery technologies that present different needs and opportunities:

- ❑ **Longer range/higher capacity all electric vehicles (BEV)** (Tesla, Bolt, i3 BEV, Leaf) that require more power over 2-8 hour blocks and have no other source of fuel.
- ❑ **Low range gas/electric plug in hybrids** (Volt, Prius Prime, various SUVs, Plymouth minivan) and electrified low speed campus utility vehicles will all benefit from designated 110 outlets to lower the demand and crowding around the Level 2 stations.
- ❑ **Electric bicycle, moped, and motorcycle** charging typically handled by 110 outlets.

Step 2: Map Pilot, Medium-Term, and Longer-Term EV Stations

With your most important station use cases in mind, consider all the potential parking locations available to your organization. Depending on the layout of your parking resources, one of several EV charging location strategies might be the best fit:

- ❑ **Central parking structure with Level 1-3 chargers** in a highly accessible and visible bank like the massed stations around terminal entrances in Logan Airport's Central Parking.

- ❑ **Distributed parking stations** integrated with street parking, residential apartments, and short term visitor parking and high-profile facilities that attract a disproportionate number of visitors.
- ❑ **Dedicated secure service stations** located for dedicated use by service, busing, and security personnel adjacent to their existing facilities.

Be alert to special opportunities in your facilities planning process for low cost expansion of your charging infrastructure such as:

- ❑ **Renovation/street work opportunities** when pavement, electrical service panels, and curbing might present significant cost savings to the EV installation budget.
- ❑ **New construction** presents cost savings for planning if not implementing the extra circuit space and conduit required for a charging setup at nearby parking places.

Lastly considered a phased approach that envisions a complete campus strategy suitable for projected needs for 10 years, but builds out the electrical capacity and facilities over time according to utilization and feedback. In a phased plan, limited Level 2 and a half dozen Level 1 chargers might be deployed in a central parking location, followed by one or more high speed Level 3 charger in a prominent short term parking location, and then over time by additional charging stations and levels as the institution learns about its potential responsibilities as a workplace and cultural destination in an all electric transportation system.

Step 3: Fund Initial Capital Expense and Ongoing Operations

Stations have an initial upfront capital cost and ongoing electrical, maintenance, and sometimes network and software fees. Partnerships with Tesla, BMW, Volkswagen, and other vendors interested in donating equipment at a premier destination like Exeter is also a reasonable avenue to pursue. Depending on the location and audience, your team will have to decided whether to install inexpensive low maintenance units with minimal network or servicing costs and more expensive fully configurable units with flexible pricing, reservations, and state of the art reporting. Consider some of the following pricing scenarios:

- ❑ **Free and open access** provides electricity and parking on a first come first serve basis or as enforced by current parking rules to electric vehicles, incentivising emissions free travel by employees and visitors perhaps as part of a greenhouse gas emissions program with charging units that allow you to report out the kWh used and calculate the environmental benefit that might otherwise cost money to achieve by another method.
- ❑ **Fee structures** from time, usage, and a combination of both to cover electrical costs, recoup capital investment in the equipment, and -- perhaps most importantly -- incentivize sharing of the limited charging resource will fees that start or rise after charging is complete.
- ❑ **Employee RFID or private system** that allows an RFID or other code to enable staff and employees to charge vehicles and maintain accounting for each vehicle.