

## Electric Vehicles Cheat Sheet

Electric Vehicles come in many shapes and sizes. As of January 2018 there were 98 electric vehicles registered in the City of Bloomington. That number is expected to grow exponentially. The tipping point of mass adoption of electric vehicles is forecasted for 2025 when electric vehicles are expected to be comparable in cost to internal combustion engines.

### Plug-in Electric Vehicles

Plug-in Electric Vehicles (PEVs) are vehicles that will utilize electric vehicle charging station and come in two types.

*Battery Electric Vehicle (BEV)* – These vehicles are operated completely by electricity. They utilize a battery and do not have as many moving parts as an internal combustion engine which means less maintenance is required. BEVs currently have a range of 100 miles to 300 miles.

*Plug-in Hybrid Electric Vehicle (PHEV)* – These vehicles have both an internal combustion engine and battery. This allows users to rely on battery for short distances such as day to day commuting. An internal combustion engine provides additional range when needed. Typical EV range is 15-30 miles with total range from 320 – 600 miles.

### EV Charger Types

	<b>Level 1 Charger</b>	<b>Level 2 Charger</b>	<b>Level 3 – DC Fast Charger</b>
Power	110 Volt (typical household outlet)	220-240 Volt (outlet like those used for appliances)	240+ Volt – Commercial installation only
Charge Speed	2-5 miles per hour charge	10-60 miles per hour charge	60-80 miles per 20 minutes of charge
Best application	Home overnight Workplace during the day	Hotels, workplaces, parks, attractions	Shopping, highways, restaurants
Other notes	Least expensive, doesn't require expensive equipment or major upgrades	<ul style="list-style-type: none"> <li>• These can be installed at home.</li> <li>• Most public chargers are Level 2 or higher.</li> </ul>	<ul style="list-style-type: none"> <li>• Three main types, Tesla Supercharger is most prominent.</li> <li>• Much more expensive to install compared to Level 2.</li> <li>• Can wear on the battery if used too much.</li> </ul>

*Electric Vehicle Supply Equipment (EVSE) Infrastructure* - This is the equipment needed to supply electricity to the EV charger. This includes things such as raceway or conduit and electrical panel space. Studies have shown that installing EVSE during construction will save property owners money on installation of EV chargers later. Many of the costs associated with installing an EV Charger such as design, trenching, permitting are negligible when absorbed into a greater construction project.

*Incidental Vs. Primary Use* – Primary use charging stations are similar to other fueling (e.g. gas) stations and are considered the primary use on a property. Incidental chargers are typically accessory to a primary use, such as a retail store, office, or hotel. To date, the City has allowed this type of charger as an accessory use on commercial properties (e.g., MOA).