

The ChargePoint logo, consisting of the word "chargepoint" in a white, lowercase, sans-serif font, with a registered trademark symbol (®) to its upper right. The logo is positioned in the upper right quadrant of the image, overlaid on the side of a dark-colored car. The background of the entire image is a blurred city street scene with trees and buildings, suggesting motion and an urban environment.

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Bi-State Electric Vehicle Connector

September, 27th 2019



EV LaunchPad®

Agenda

1. **Introductions**
 - **ChargePoint, EV Launchpad, & Eversource Overview**
2. **Typical Host Questions**
3. **Hypothetical Project**
4. **Open for Questions & Answers**

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EVERSOURCE
ENERGY

Introductions



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Typical Questions



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Question

For a typical EV charging station installation, what work does the Utility perform and manage, and what is the responsibility of the site host?

Follow up question: What are some considerations that should be contemplated from an electrical infrastructure standpoint when installing EV charging stations?

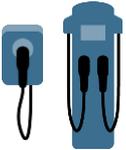
Question

Does Eversource have any programs to incentivize charging station installation in NH?

Question

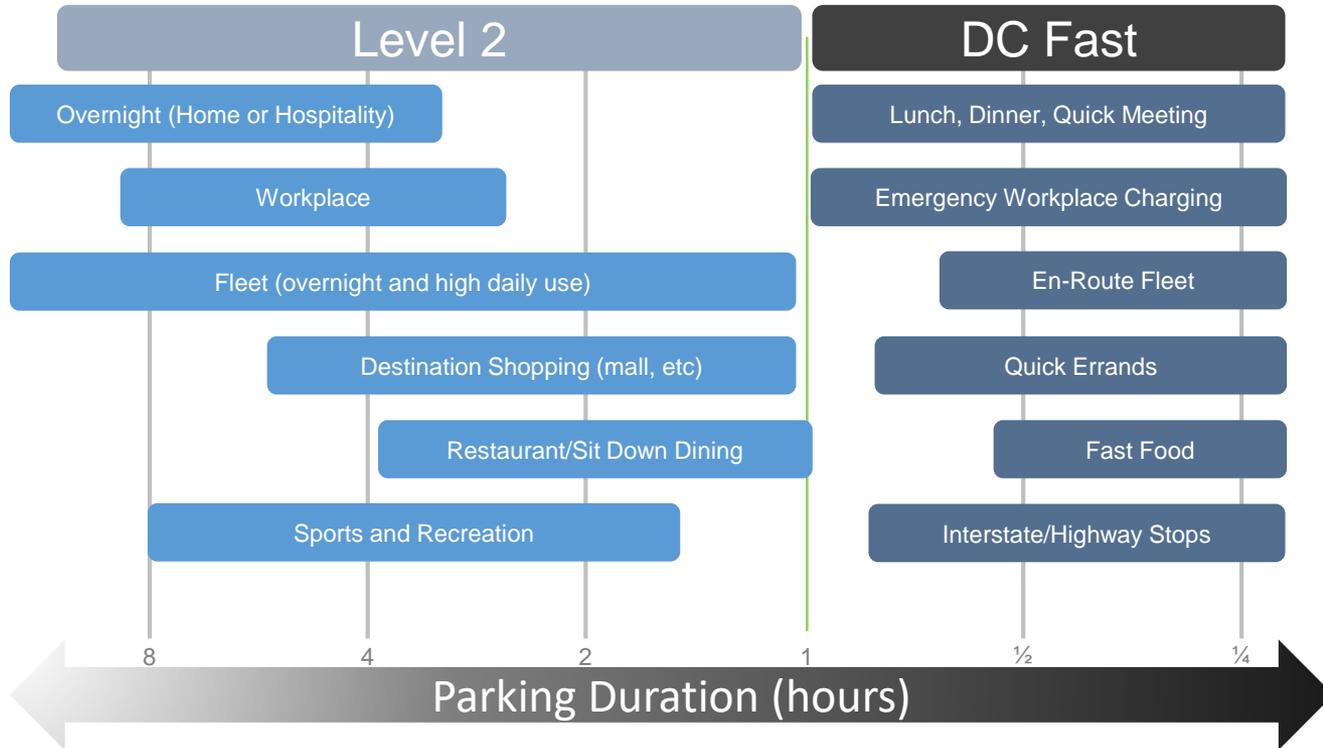
Do all EVs charge at the same rate and do we need different types of chargers? Is 'faster' synonymous with 'better'?

Charging Levels



Level	Amperage	Voltage	Kilowatts	Typical Charging Time	Connector	Primary Use
AC Level 1	12–16 amps	120 V	1.3–1.9 kW	12–80 hours 2–5 miles RPH	J1772 connector	<ul style="list-style-type: none">• Backup charge• Some home use
AC Level 2	6–80 amps	208 V or 240 V	Up to 19.2 kW	2–4 hours 20–25 miles RPH	J1772 connector	<ul style="list-style-type: none">• Park and charge• Home, commercial, and public charging
DC Fast Charge	70–125 amps	480 V	50–500+ kW	10–45 minutes 200–500 miles RPH	SAE Combo, Tesla, ChaDeMo connector	<ul style="list-style-type: none">• Commercial, public• Charging while traveling long distances

Identifying Appropriate Hardware



Level 2: Commercial Charging Stations

- **Speed:** Provides 20-25 RPH (miles of Range Per Hour).
- **Clean Cord Technology:** Self-retracting, maintenance free, ultra-lightweight cord management system.
- **Power Management Options:** Cut installation costs and double the number of parking spots served.
- **Branding and Customization:** Promote your brand with an LCD screen and customizable signage.
- **3G “Smart” Connectivity:** Allows for many driver experience enhancements as well as station owner flexibility controls.
- **Consumer Friendly User Interface:** Available in multi languages (English, French, and Spanish), interactive animated user interface, and touch buttons for input (glove and ice operations).
- **Compatibility:** 100% of EVs can charge with our Level 2 Chargers including Tesla



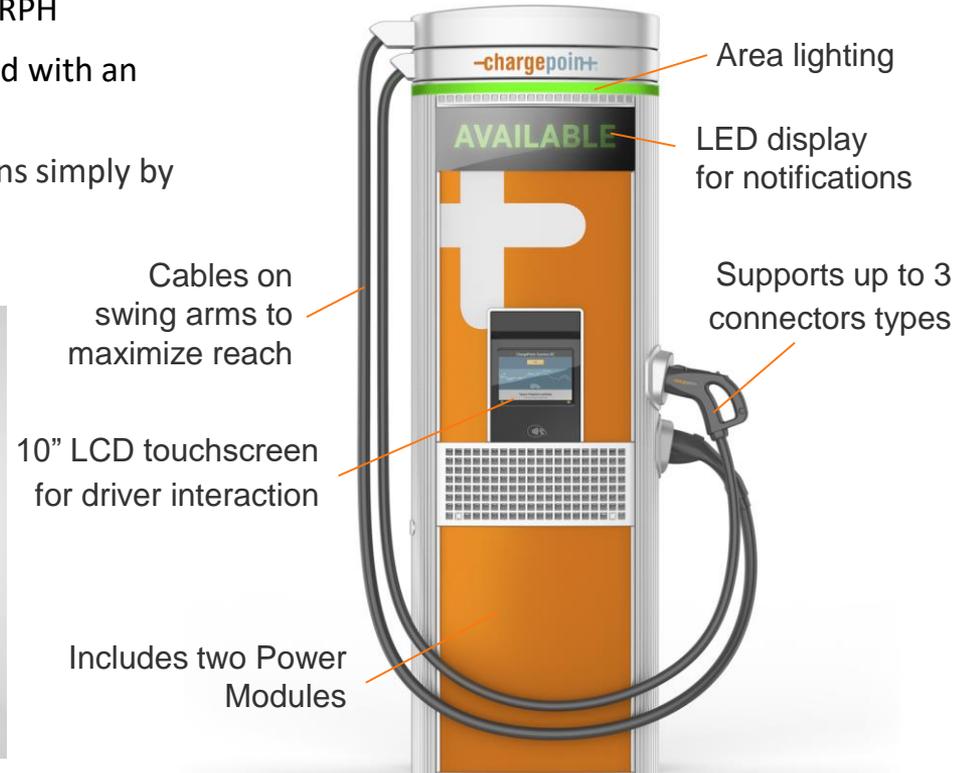
CT4000



CPF25

Level 3: DC-Fast Charging

- **Speed:** 50kW up to 500kW. Provides 200-1000+ RPH
- **Branding and Customization:** Promote your brand with an LCD screen and customizable signage.
- **Compatibility:** 100% of BEVs charge at our stations simply by choosing which connector suits their car



CPE250 & ExpressPlus

Question

I've heard about dumb and smart chargers - can you explain the difference?

Networked Charging Stations vs Dumb Stations

	Smart Charger	Non-networked Charger
Dispense Electricity	✓	✓
 Visible to Drivers * through mobile app, turn by turn directions, nearby amenities, real-time availability, 24/7/365 driver support	✓	✗
 Waitlist & Driver Alerts * reserve a station, know when car is fully charged	✓	✗
 Access Control for Owners * public/private, loyalty rewards, fleet services	✓	✗
 Recover Revenue: Session Fees * charge per kWh, hourly, or per driver group	✓	✗
 Data Analytics * station usage, # of unique drivers, charging behavior, utilization, revenue, costs, and GHG offset	✓	✗
 Remote Access and Maintenance * proactive monitoring & fixes, software updates	✓	✗

Question

What's the value of a smart charging station for my organization/business/city/fleet/home?

Value of Smart Charging

Reduce Expenses and Generate Direct & Indirect Income

Home	Fleet	Workplace	Multi-Family Homes Commercial Property	Parking	Retail & Hospitality
 <p>GAIN GREATER CONTROL & VISIBILITY</p> <ul style="list-style-type: none"> + Track usage and expenses + Charge during off-peak hours + Achieve sustainability goals 	 <p>LOWER COST OF TRANSPORTATION</p> <ul style="list-style-type: none"> + Meet government mandates and regulations + Reduce operating expenses with lower fueling and maintenance costs + Achieve sustainability goals + Proactively manage expenses + Manage power in a grid-friendly way 	 <p>ATTRACT & RETAIN TALENT</p> <ul style="list-style-type: none"> + Increase employee satisfaction + Improve productivity + Achieve sustainability goals + Provide pricing controls to support your business goals 	 <p>ATTRACT & RETAIN RESIDENTS & TENANTS</p> <ul style="list-style-type: none"> + Increase average rent and property value + Provide valued amenity + Meet emerging state and city regulations + Achieve sustainability goals 	 <p>ATTRACT NEW CUSTOMERS</p> <ul style="list-style-type: none"> + Drive revenue + Provide differentiating amenity 	 <p>INCREASE SALES</p> <ul style="list-style-type: none"> + Attract new and repeat customers + Increase shopping time + Boost customer satisfaction + Achieve sustainability goals + Integrate with loyalty programs

Question

How do the financials work? Should we charge money to drivers to use the stations? If so, how much?

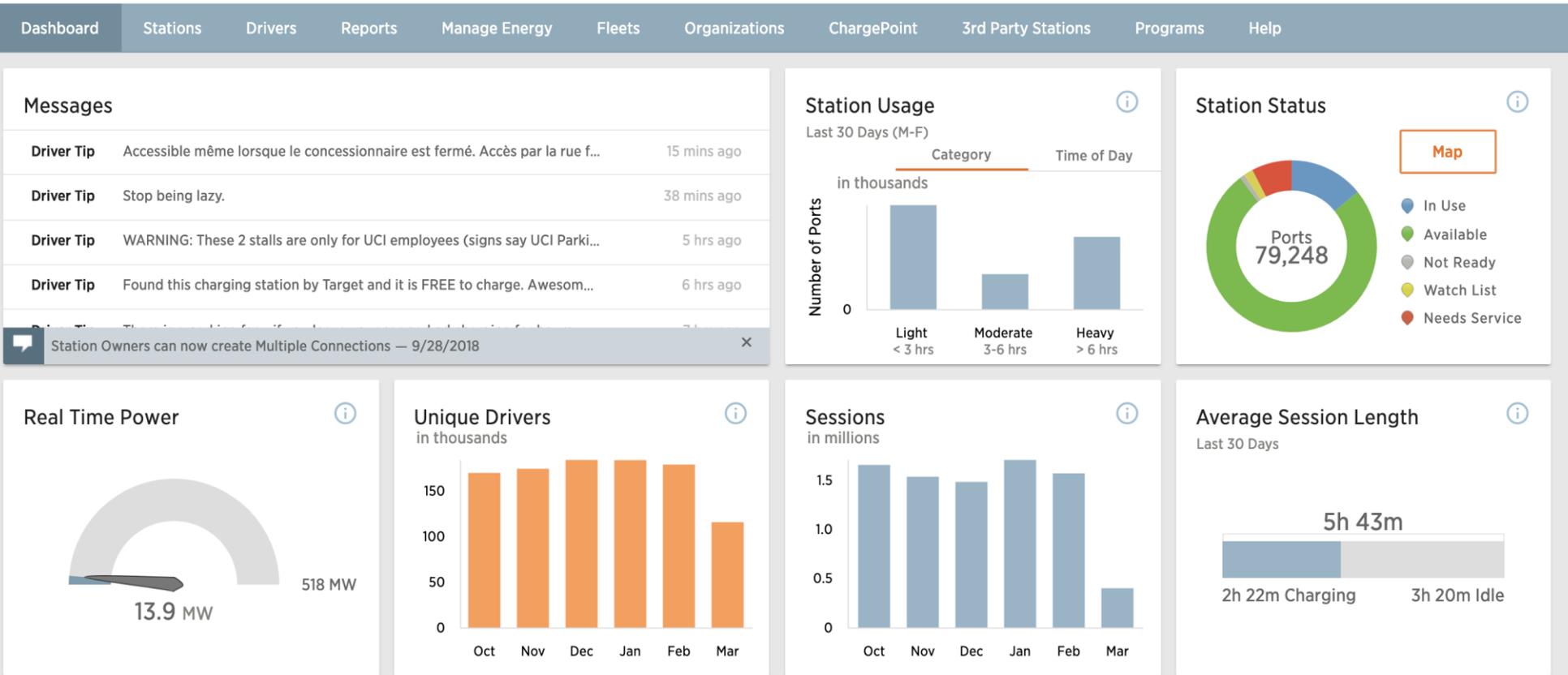
Pricing Options

- **A fixed rate per charging session:** The driver pays a set fee for the entire session
- **An hourly rate:** The driver pays per hour, similar to how a parking meter operates
- **An hourly rate while charging:** The driver pays per hour but only while drawing energy
- **An energy rate:** The driver pays for the energy consumed on a per kWh basis
- **Length-of-Stay Graduated pricing:** One price is charged during the first x minutes/hours and another price is charged afterwards. Note: graduated kWh pricing is not supported
- **Charge Complete Graduated pricing:** One price is charged while the vehicle is actively charging, then a different price applies once the vehicle is finished, with a grace period.
- **Time-of-Day pricing:** One price is charged during peak hours and another during off-peak hours
- **Combinations of the previous, for example:**
 - A flat session fee PLUS an energy rate
 - A minimum session fee PLUS an hourly rate.
- **Change the policy based on *who* is charging**
 - Station owners may set unique policies for different classifications of drivers. For example:
 - Employees, Visitors, Fleet vehicles

Question

How do I know if the stations are being used? And, how can I make them only accessible for my employees?

Overview of ChargePoint Stations on the Dashboard



Manage your stations

- View the stations in a table, by groups, or by state (available, in use, need service)
- Add pricing rules, and access rules to a group of stations, and/or a group of drivers.
- Integrate promotional videos
- Add a waitlist feature: when all stations are busy, the driver gets in line, and is notified when charger is available.
- Apply a scheduled charging policy to a single charger, or a group of chargers.

The image displays a web-based dashboard for managing charging stations. The top navigation bar includes links for Dashboard, Manage Stations, Reports, Manage Energy, Fleets, Organizations, ChargePoint, Programs, and Help. Below this, there are sub-links for Stations Overview, Pricing and Reservations, Access Control, Video Ads, Station Messages, Waitlist, CTLog, Auto OTA, Remote Stop Charging, and Scheduled Charging.

The main content area is divided into three sections:

- Table View:** A table listing individual stations with columns for Name, WAT Address, Address 1, Address 2, Power, City, State, Country, and Status. The table shows several stations in California, all with a status of 'In Use'.
- Map:** A map of the United States with a red pin indicating the location of the selected station in California.
- Station Overview:** A detailed view of a station showing its status (In Use), power (945.115 kW), and a list of recent events such as 'Vehicle End', 'Hardware Fault: Station Out Of Service', and 'Emergency stop button pressed - turn button to reset'.

Question

Remind me again why I should pay more for a Smart charging station?

Most Advanced Charging Software and Services



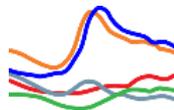
Dashboard & Analytics

Station owners see how stations are being used and when it's time to add capacity.



Waitlist

Drivers can get in line and get notified when the station is available – improves utilization.



Energy Management

Efficiently and automatically utilize power available for charging vehicles. Save money on costly upgrades and avoid demand charges.



Flexible Pricing

By hour, by kWh, by time of day, by customer type, or by any combination.



Access Control

Limit who can use the charging stations and when. Station owners can disable charging during “closed” times.



Fleet Services

Fleet Managers can track vehicle charging and pay for fuel if the vehicles need to charge at other stations.



Driver Services

Automatically notify drivers when: fully charged, a station becomes available, power outage or decrease, and more.



APIs

Most functions are also available through SOAP/XML and REST APIs that follow the same data access rules as the UI.



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Hypothetical Project



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Hypothetical Project Overview

Site Specific Bullet Overview:

- ~1200 employees
- 24 EV drivers currently
- 75 customers per day
- anticipate that growing over the next 10 years and want to accommodate
- fleet is mix of 20 administrative passenger vehicles (sedans and SUVs)
- Average 12000 miles
- 8 grounds and maintenance vehicles
- Average 7000 miles



Phase 1

Phase 2

Customers

Senior Management & Employees

Fleet and Employees

Distribution panel

Transformer

Utility pole

Google

Phase 1

○ Double plug charging station

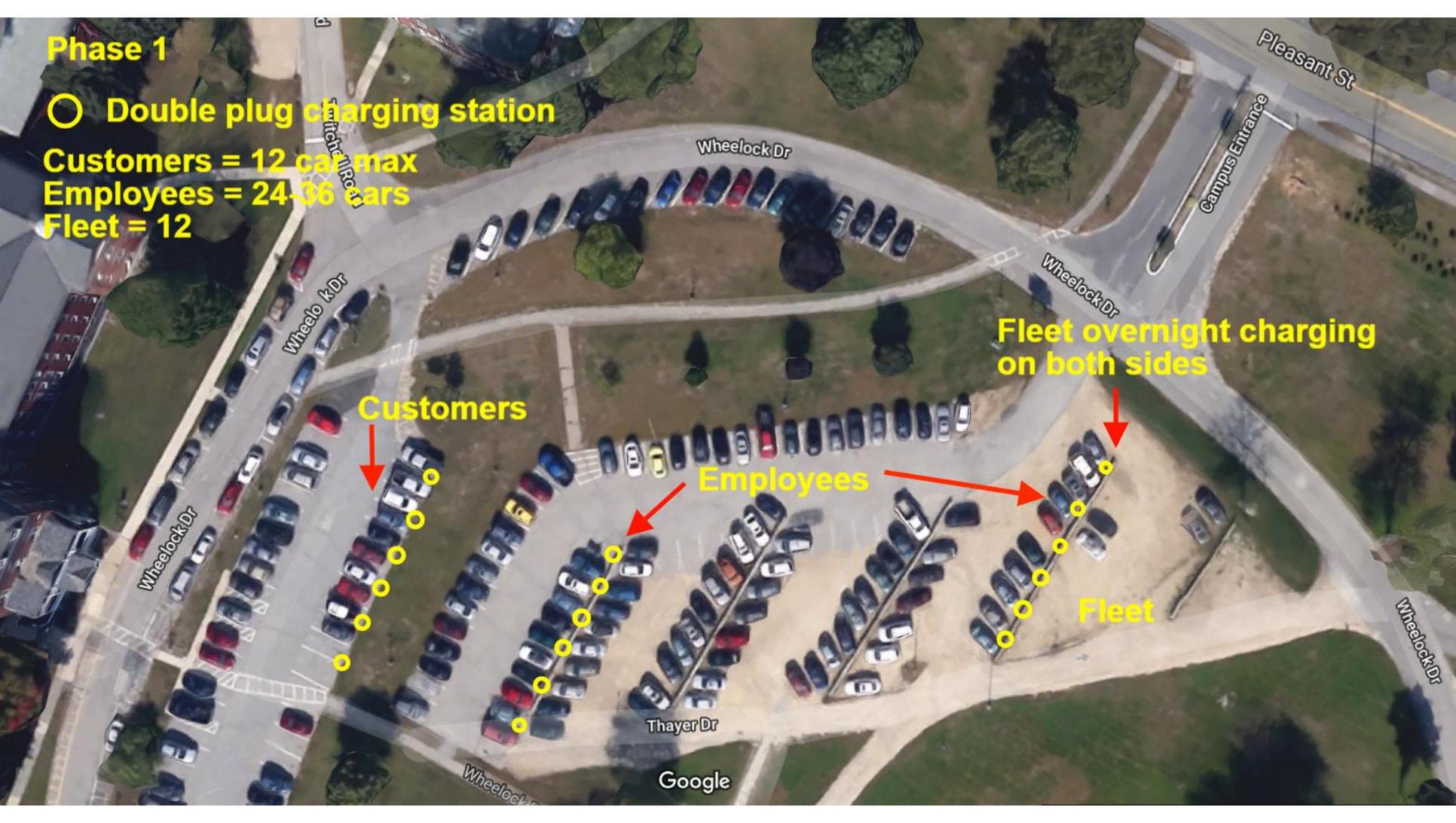
Customers = 12 car max
Employees = 24-36 cars
Fleet = 12

Customers

Employees

Fleet overnight charging on both sides

Fleet



Open Discussion with Panel. Thank you!



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