

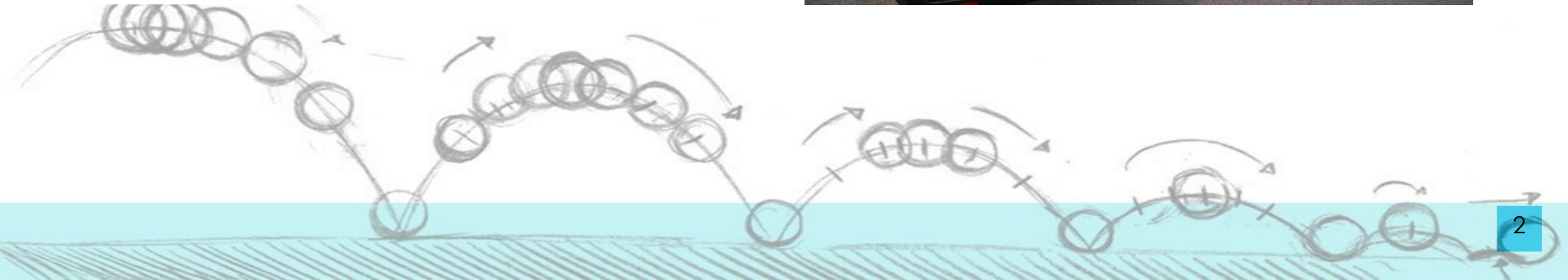


Electrification Plan



★ Main groups

- Identifying locations
- Number of chargers
- Choosing a charger
- Installation



★ Identifying locations

Prioritized locations

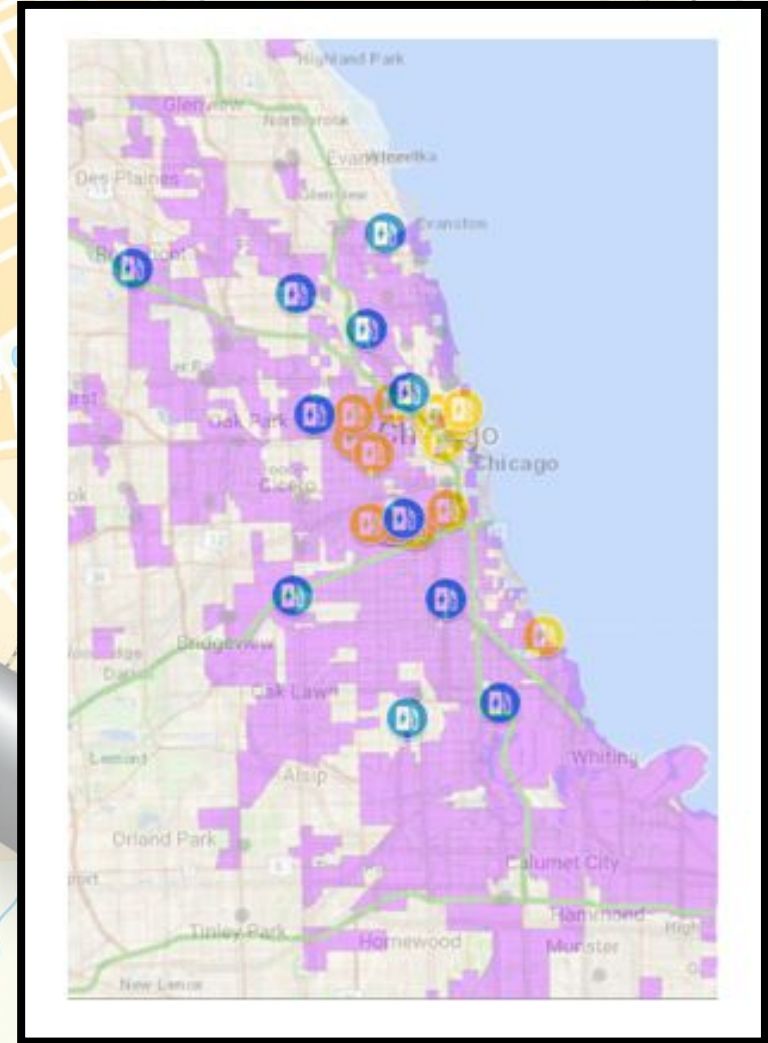
- Targeting heavily polluted areas

Signal Strength

- Does the area have adequate signal strength.
- Ex. Cellular, WIFI, Ethernet.

Power availability

- Can the building support the load of the stations.
 - Enough power
 - Upgrading utility service
 - New utility service



★ Number of chargers

Rule of thumb – 1 to 1

- Keep it simple, 1 Level 2 charger per electric vehicle.

Other Factors

- Number of vehicles
 - More vehicles = More chargers or faster charging speed
 - Note using DCFC constantly will not damage the battery
- Down time
 - Keep a strategic schedule of the fleet
 - Vehicles do not need to be charged to 100%



★ Choosing a charging station

Charging stations

- Level 1
 - 110 Volts
 - 12 Amps and 1.2-1.8KW
 - 3-5 miles per hour
- Level 2
 - 208-240 Volts
 - 15 Amps and 3-19.2KW
 - 12-80 miles of range per hour
- DCFC
 - 480 Volts
 - 100+ Amps and 15-350 KW
 - Up to 150 miles of range per hour
- Single or dual port pedestal or wall mount – Level 2
- Single or dual port pedestal - DCFC
- Chargers can be stepped down using software
 - Connect with AssetWorks to meter all fields



Single port
pedestal



Dual port
wall mount



Dual port
pedestal

★ Installation

Best case scenario

- All parts and supplies are in stock as well as the building having enough power
 - Approximately 1 week install time.

Worst case scenario

- Waiting on parts such as breakers and transformers or even upgrading or adding new utility service.
 - A few months to possibly a year

Request new service

- Fill out load calculation letter
- Meet with service provider's engineer
- Either party can design the scope of work
 - Be approved by both parties
- Contractor pulls permits and builds a distribution of power
- Installation of chargers



★ Main Goal

- Install 182 level II chargers & 6 DCFC by the end 2023
- Convert 25% of Non-emergency Light Duty Fleet by the 2023
- Explore converting City operations fleet (garbage trucks, sweepers, snowplows, etc) to EV
- Electrify 100% of the City Fleet by 2035



You have to match the convenience of the gasoline car in order for people to buy an electric car.

– Elon Musk

★ EV Vehicles



Chevy Bolt



SEA Electric Step-up van



Hino Box truck



Ford Lightning



Ford E-Transit



Rivian R1T