



Sports & Exhibition Authority
When you have the time, Pittsburgh has the place.

ELECTRICAL VEHICLE CHARGING

SIMONA LOBERANT

SEA EV STATIONS



David L. Lawrence Convention Center:

4 Tesla Level II Chargers

4 Universal Level II Chargers

Gold 1 Garage

2 DC Fast Chargers

4 Tesla Level II Chargers

2 Universal Level II Chargers

West General Robinson Street Garage

4 Tesla Level II Chargers

2 Universal Level II Chargers

TIMELINE

David L. Lawrence Convention Center

Eaton Level II Units (2) - Early 2013

Tesla Level II Units (4) and Tesla Branded
Universal Chargers (2) – Fall 2018

West General Robinson

Tesla Level II Units (4) and Tesla Branded
Universal Chargers (2) – Fall 2018

Gold 1 Garage

DC Fast Charging Units (2) – Summer 2017

Tesla Level II Units (4) and Tesla Branded
Universal Chargers (2) – Fall 2018



DC FAST CHARGING



ISSUES

Users still not familiar with the DC Fast Chargers

Most hybrids and older electrical vehicles aren't compatible

Noisy! When they first debuted people were scared of the noise they make - of course a large battery discharging quickly will make noise!



BENEFITS

Fast Charging great for attracting curious EV owners and short term EV parking

Future benefit could point towards leased spaces from rideshare services, and group ride services like shuttles.

25 & 50 kW DC Fast Charger

Model	L3R-25-480-CS	L3R-25-208-CS	L3R-50-480-CS	L3R-50-208-CS
Power Rating	25kW	25kW	50kW	50kW
Connector/Protocol	CHAdEMO and SAE J1772 Combo (CCS1)			
Network Compatibility	OCPP 1.5/1.6, BTCP Network, EVConnect, EVGateway, EVgo, greenlots, innogy			
Access Control - Communication	RFID, Credit Card - 4G, Cat-5 Ethernet			
Input Power VAC 3 Phase	480 VAC	208 VAC	480 VAC	208 VAC
Input Power AC Current (FLA)	44A	80A	75A	160A
Efficiency Rating	>90%			
Max Output DC Current	52A	52A	125A	125A
Max Output DC Voltage	50-500V			
Surge Protection	6000 VAC			
Ambient Condition	-30C to +50C, 95% humidity non condensing, 6000 ft altitude			
Dimension/Weight	43"w, 73"h, 33"d / 1,000lbs			
Safety Compliance	ETL Listed for USA and Canada: Complies with UL 2202, UL 2231 UL50E, NEC Article 625, CSA STD C22.2 No. 107.1 FCC Part 15 Class A			

Standard

- Integrated Cord Retractors
- 15" Outdoor Color Display
- Connector Configuration:
 - SAE J1772 CCS1 and CHAdEMO
- Payment types: (OCPP Network Enabled)
 - Credit Card Reader
 - RFID

Optional

- ISO 15118: 2014
- 4G Modem
- Connector Configuration:
 - Dual SAE J1772 CCS1
 - Single CHAdEMO
 - Single SAE J1772 CCS1



BTCPPOWER

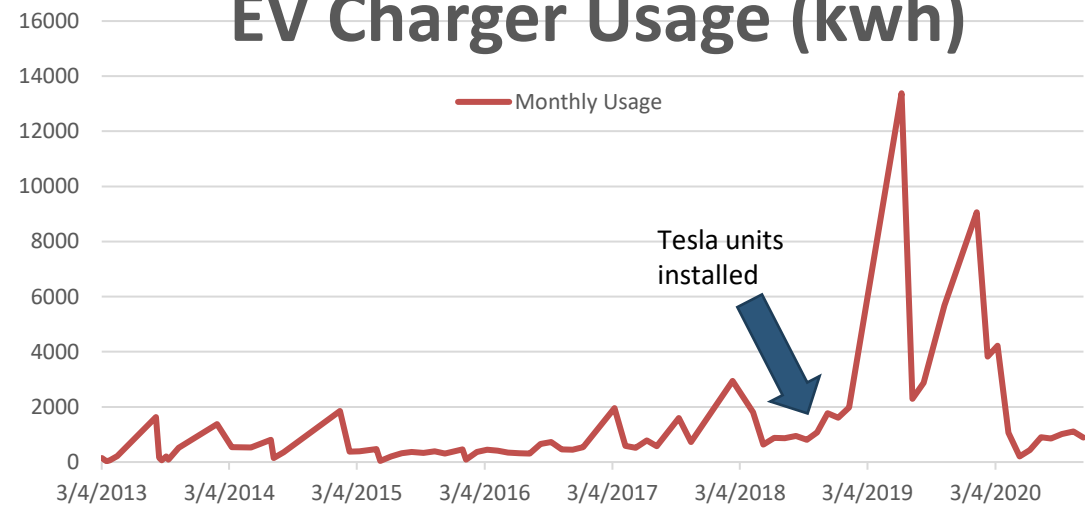
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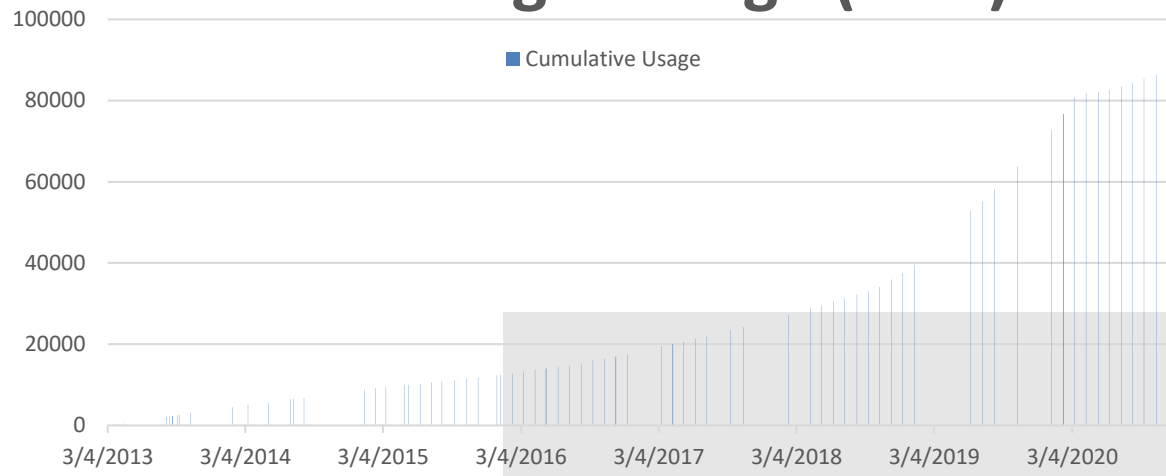
DAVID L. LAWRENCE CONVENTION CENTER USAGE



EV Charger Usage (kwh)



EV Charger Usage (kwh)



BEST PRACTICES

Pre-wire for EV stations to ease increase of units

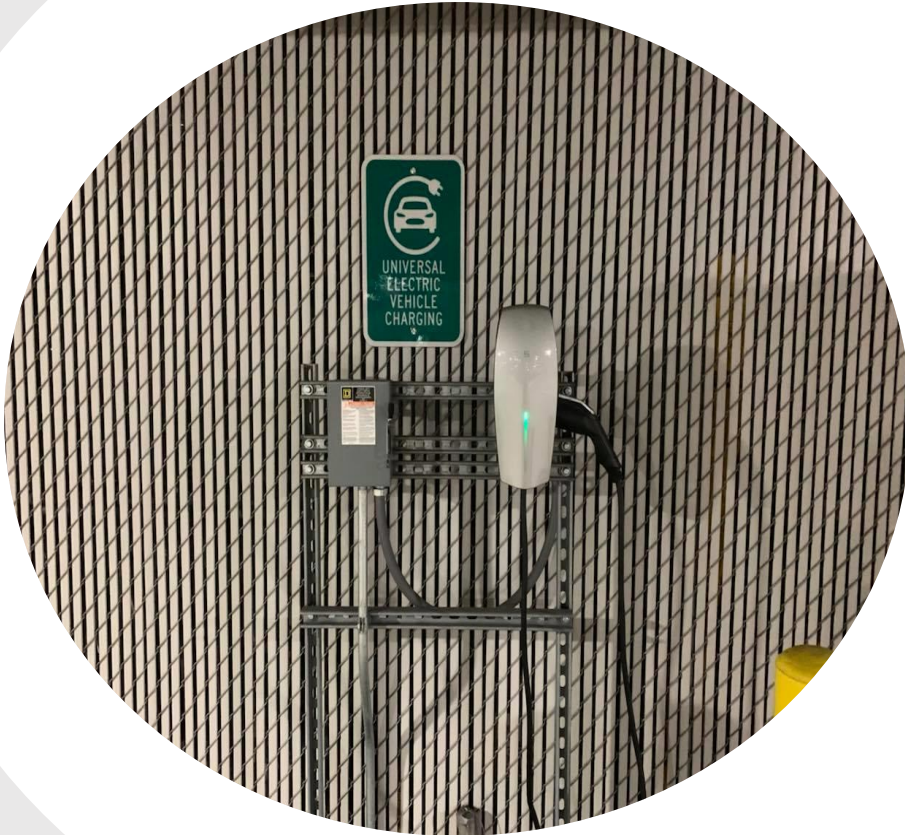
Locate units in “premium” spaces near entrances

Prevent lease holders from “hogging” spaces

MAINTENANCE

SEA EV Units have needed very little maintenance

Biggest repair necessary in 6 years was from intentional damage. Most repairs are a reset or minor wiring replacement





CHARGING FOR CHARGING

SEA EV Charging is free with parking fee

Reasons:

Investment in EV infrastructure

Free vs. Self bought units

Payment units

Consistent and secure Wifi

Monthly charges per unit to process payment

Most spaces used by all day parkers (5-8+) hours
therefore there is little turnover

Ideas for other buildings: Premium EV leases
(guaranteed EV spot)

POTENTIAL FUNDING

Tesla Programs for hotels and publicly accessible buildings

<https://www.tesla.com/charging>

Program opens from time to time to accept new applicants

Driving PA Forward

<http://www.depgis.state.pa.us/drivingpaforward/>

West Penn Power Sustainable Energy Fund

<https://www.wppsef.org/get-funding>





THANK YOU!



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