

# ***ELECTRIC VEHICLES FOCUS AREAS***


*PRESENTED BY:*

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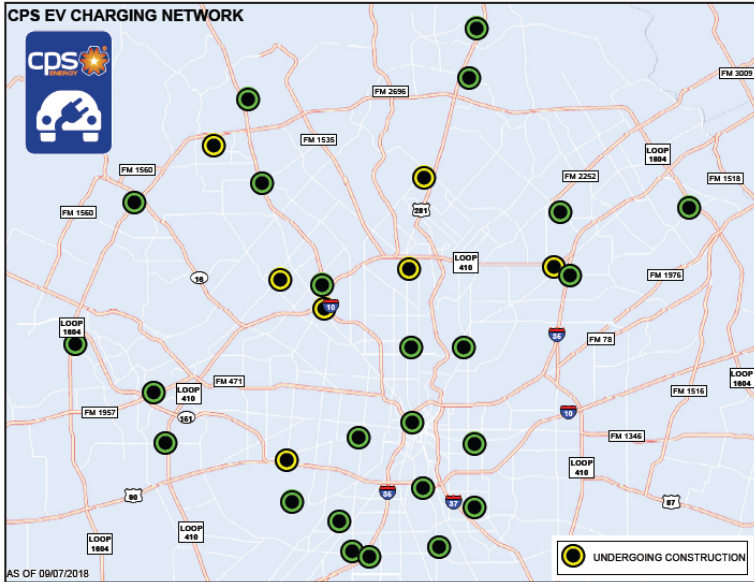


# CHARGING INFRASTRUCTURE



## CPS Energy ChargePoint® Network

Searchable map online at [cpsenergy.com/ev](https://cpsenergy.com/ev)



150 charging ports  
at more than 30 locations

**HEB Grocery Stores:**  
De Zavala & IH-10W, Central Market, Marbach & Loop 410, Olmos, Zarcamora

**Santikos Movie Theaters:**  
Palladium IMAX, Embassy 14, Northwest 14, Silverado 16, Rialto, Mayan Palace 14

**University of Texas at San Antonio:**  
1604 Campus, Bauerle Garage & Ximenes Garage, Downtown Garage

**Alamo Community College District:**  
St. Phillips College, Northwest Vista College, Northeast Lakeview College

**University Health System:**  
University Hospital Staff and Visitor Garages  
North - University Family Health Center  
Southwest - University Family Health Center  
Southeast - University Family Health Center  
Texas Diabetes Institute, Robert B Green Campus

**Wonderland of the America's (Cross Roads) Mall:**  
Near Steinmart along Fredricksburg Rd  
Near Burkes Outlet along Loop 410 Access Road  
Behind Target

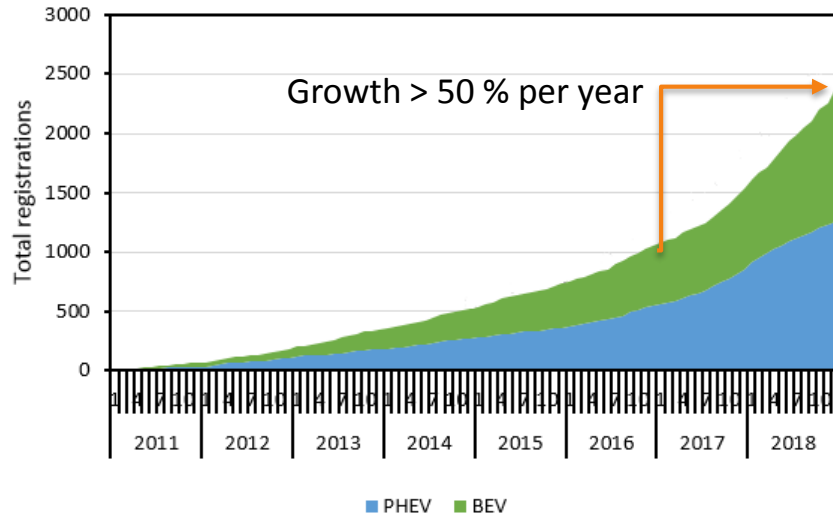
**City, Government and Public Entities:**  
Main Library (Soledad St.) & Thousand Oaks Library  
Marina Public Garage, Houston St. Public Garage,  
St. Mary's Public Garage  
Bexar County Tax Main Office - Downtown  
Bexar County Juvenile Detention Center  
Via Park and Ride Center at Stone Oak  
Port San Antonio Kelly Center - Billy Mitchell Rd  
Port SA Kelly - Pearson Ave  
San Antonio Missions Historic Park

**Workplace:**  
AVNET, Rackspace

- CPS owns and operates Level 2 EV stations at over 30 locations with 150 ports since 2011
- In 2019 the count of Level 2 Charging ports has grown to over 200 in the San Antonio area
- 1<sup>st</sup> EV Fast Charging Station - owned by Electrify America - opened in mid April

# EV ADOPTION

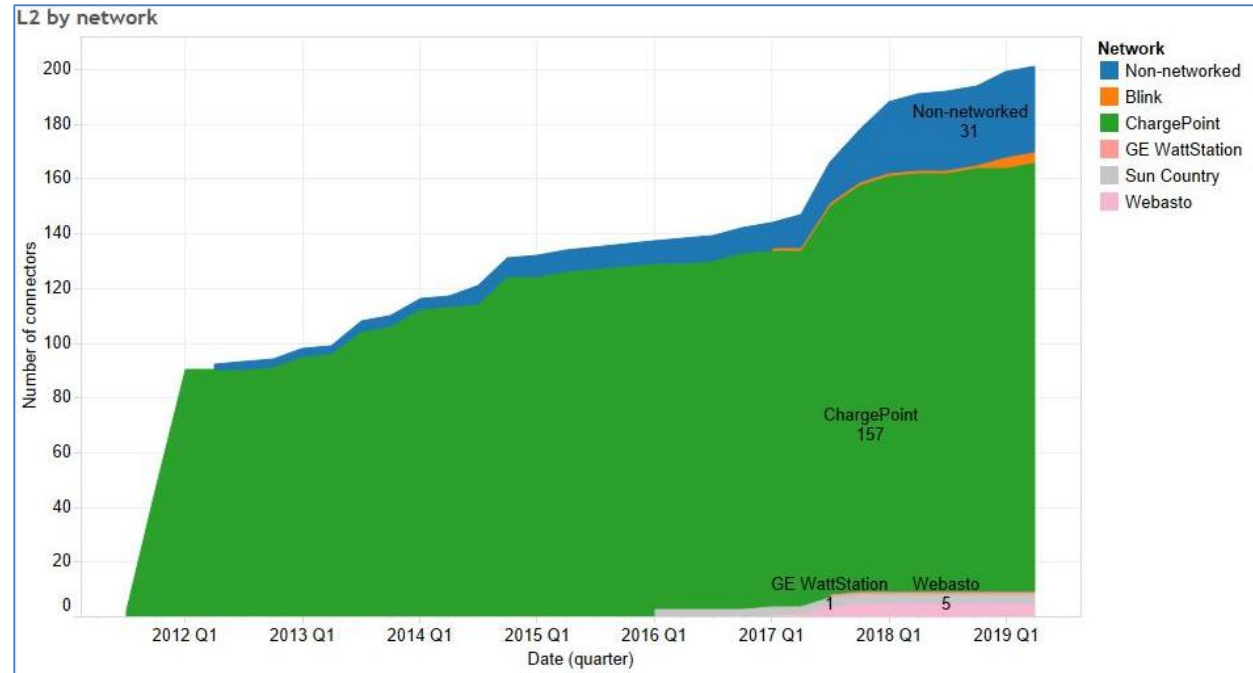
## Rapid Local Adoption of Electric Vehicles



- Over 2400 EV's in San Antonio through Dec 2018
- 40-55% annual growth rate since 2014
- San Antonio EV adoption is following national average trends
- 50% of drivers use the CPS Energy public charging network

Over half of 2400 EV's in San Antonio area take advantage of the CPS Energy public charging network.

# EV CHARGERS AND NETWORKS



Most of CPS Energy's charging stations are ChargePoint networked stations, which are the most popular in our area.

# LEVEL 2 CHARGING DESIGN CONSIDERATIONS



- Typically 3<sup>rd</sup> Party Property
- No easements- Access granted through host agreements
- Separate metering was feasible only in 1/3 of locations (usage data mostly relies on charger measurement device)
- Equipment attracts ants – pest management strategies needed
- Breaker trips are most common maintenance issue. Easy access to breakers recommended. Causes:
  - Breaker worn out
  - Improper software configuration when in circuit share mode
  - Problem with vehicle

Sites should be designed with breakers within line of site of EV stations and with an integrated pest management strategy.

# ELECTRIFY AMERICA DC FAST CHARGING PLAZA



- Site energized mid April 2019
- 1.6 MW of Connected Load
  - Two 350 kW Chargers
  - Six 150 kW Chargers
  - 16 Ports (15 CCS C1, CHAdeMO)
  - Served by 1500 kVA pad mount transformer (no diversity factor used)
- Demand is measured with MV90 Meter.  
**kWh is measured with high accuracy CT's**
- Easements were granted by Walmart

Metering strategy for large DC Fast Charging plaza's will need to consider multiple devices to measure both demand and kWh accurately.



***Questions***