



California Network

January 28, 2015

California Energy Commission Workshop

DC Fast Charging

1. Fast charging stations, deployed, operational, and utilized today
2. Does not appear to be a gap today in most regions, due to NRG-CPUC settlement agreement, CEC investment, and automaker investment
3. Key question is how to plan for the future

Geography	Permit Packages Ordered	Permits Submitted	Permits Received	Construction Starts scheduled/commenced	Energized	Total
LA Basin	6	6	15	10	25	62
Sacramento	0	0	2	0	1	3
San Diego	0	1	0	2	8	11
San Joaquin Valley	1	2	2	0	1	6
SF Bay Area	1	4	3	5	24	37
Total Freedom Stations	8	13	22	17	59	119
Additional Sites					65	65
Grand Total DC Charging					124	184

CA-CCS Deployment

Geography	Retro Permits Received	Installed New Sites	TOTAL EVSEs Installed
LA Basin	20	10	21
San Diego	7	0	4
SF Bay Area	19	13	20
Sacramento	0	0	1
San Joaquin	N/A	N/A	1
Grand Total	46	33	47



Carlsbad Premium Outlets

Scheduled Installs this Week

- Plaza Rio Vista- Cathedral City
- Ontario Mills
- Rosemead Fresh & Easy
- Victor Valley Mall

SF Bay Area Network map



San Diego Network Map

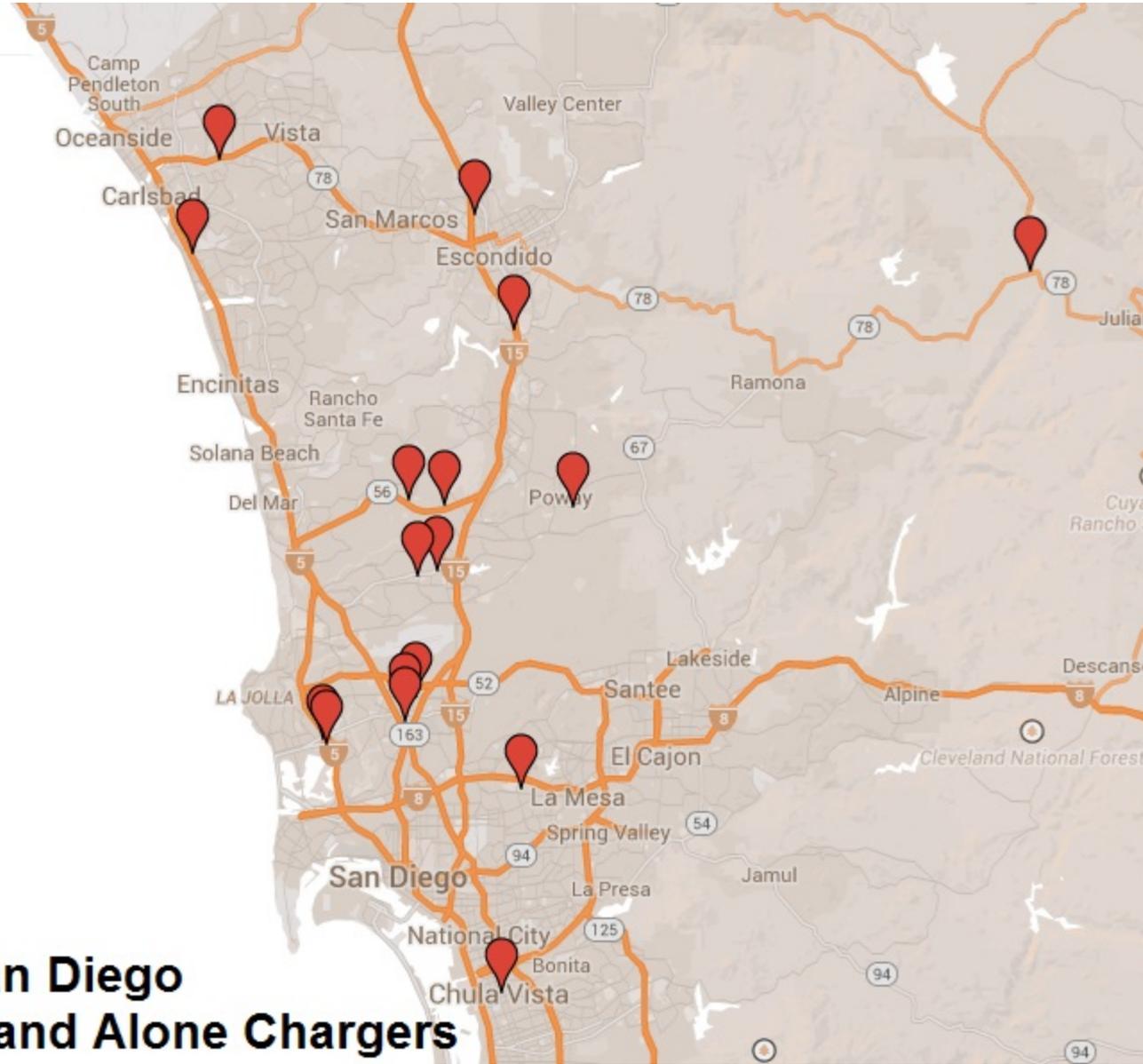


Los Angeles Network

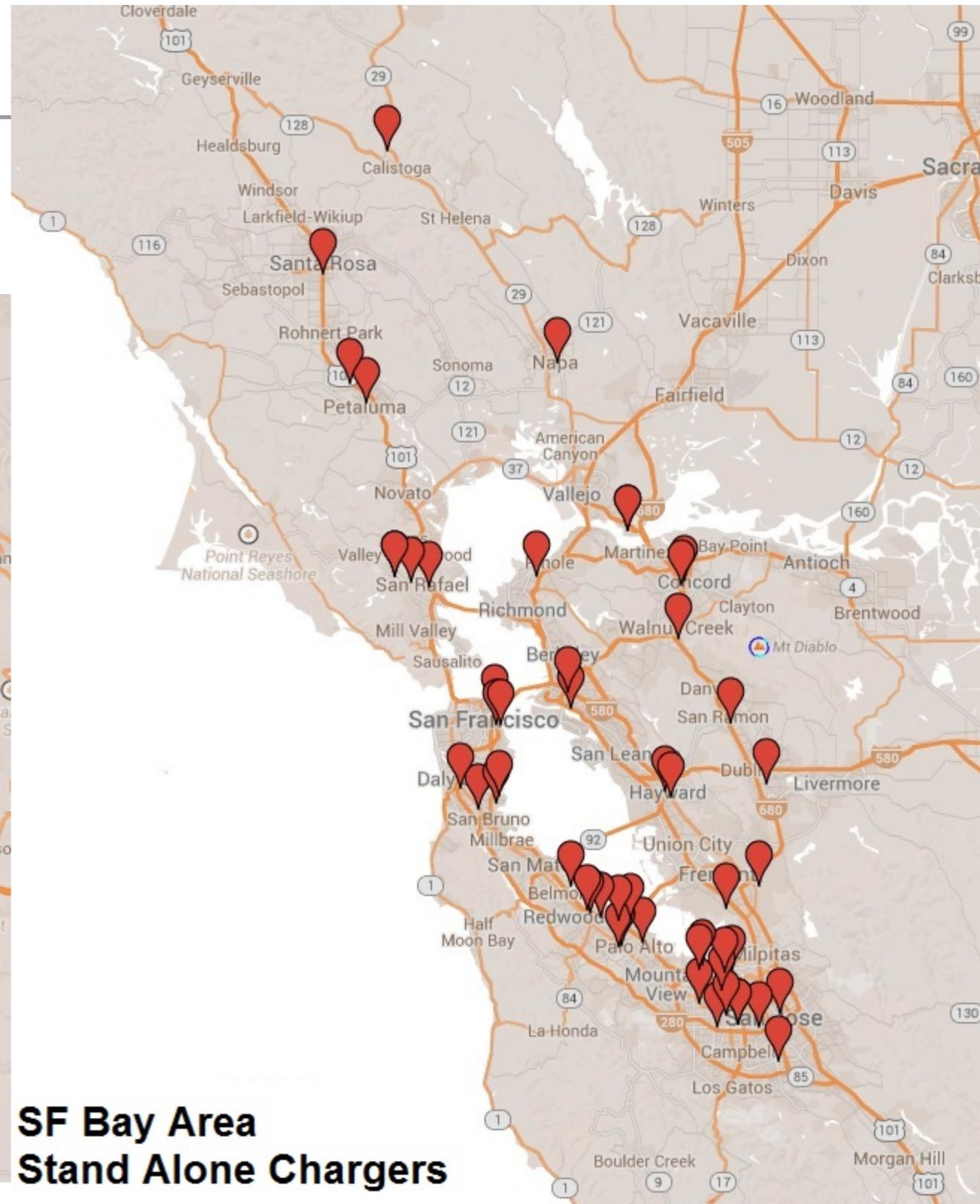


Single DC Chargers

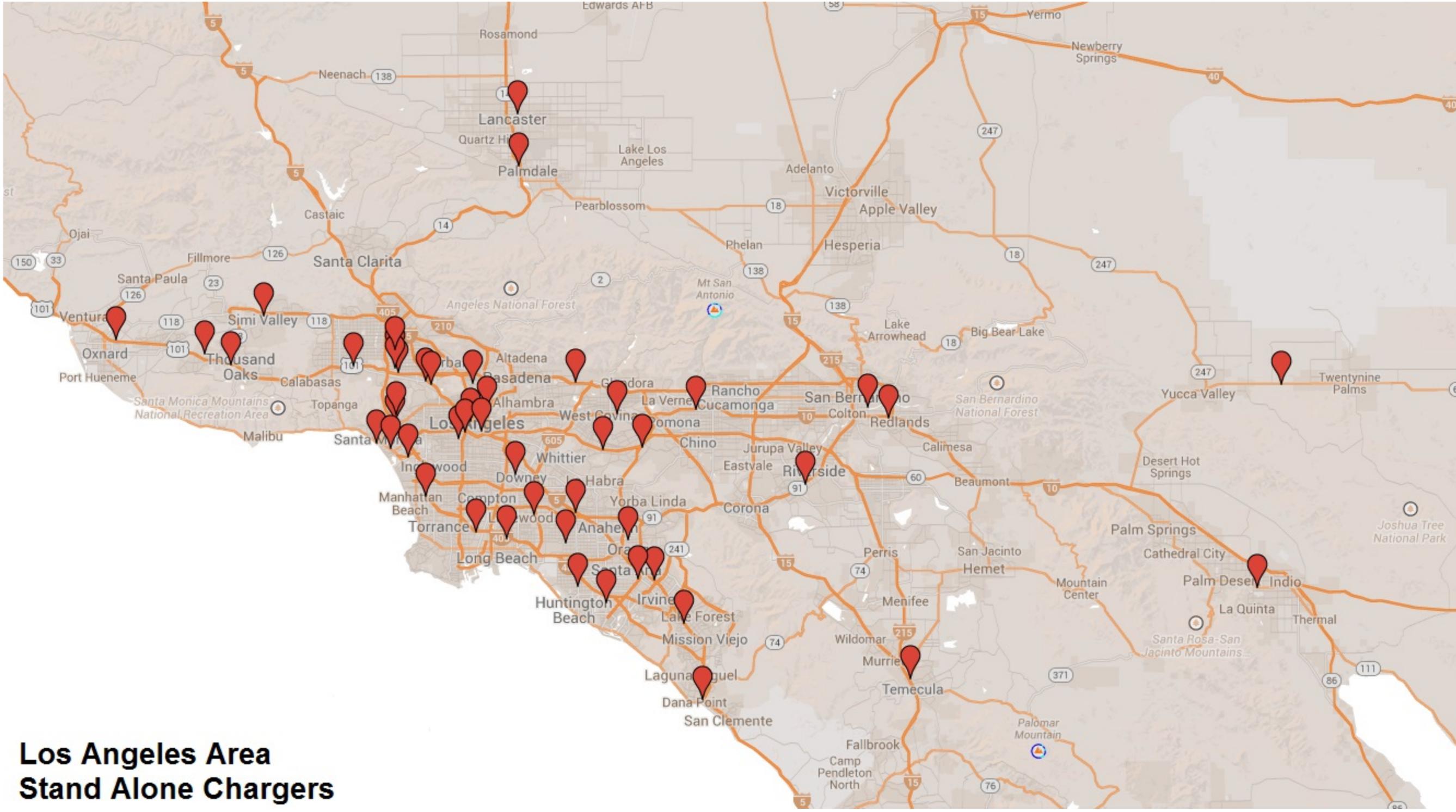
All Networks



**San Diego
Stand Alone Chargers**



**SF Bay Area
Stand Alone Chargers**



**Los Angeles Area
Stand Alone Chargers**

Infrastructure Funding

- Consider the picture in three years
 - 200+ mi batteries are common
 - Multiple PHEVs have DC charging
 - Renters and single-car families emerge as a key market
 - Used vehicles have important market share
- Focus on areas lacking investment
 1. Multi-family (buildings and neighborhoods)
 2. Municipal service territories
 3. Super high speed
 4. Larger centers
- Public charging
 - DC Charging for anything 1 hour dwell or less
 - L2 for malls, theaters, venues, parks
 - Utilization becomes key

Barriers and Solutions

Barriers

- Property relationships
 - Willingness
 - Rent / revenue payments
 - Expensive locations
- Overlapping approvals
 - Workloads
 - Timelines
- Utility interconnection
 - Time
 - Cost
- Permitting
 - ADA
- Utilization
 - Availability versus queuing

Solutions

- Property
 - Market momentum
 - City influencers
 - Activist drivers and tenants
- Approvals
 - Establishing a standard
 - Retail version of SB810?
- Utility interconnection
 - Establish specialized teams to remove utility queues
 - Amended allowances for EV
- Permitting
 - ADA is already stringent
- Utilization
 - Larger stations, integrated IT