



Director of Strategy – Sacramento EV  
President Emeritus - Sacramento EV  
Board Secretary Electric Auto Association

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Nissan LEAF (3), Chevy Volt, Tesla Model X



Only EV driver from California to Alaska

# Agenda

- Who We Are
- Market Now
- Why Owners Like EVs
- Current Situation
- Sacramento's Early Leadership
- Next Steps
  - Incentives
  - Environment Justice
  - Infrastructure



# Electric Auto Association - Our Purpose

**For the public:** EV education

**For our chapters:** Enable success

**For our members:**  
Information source and  
advocate for owners





26 Public Events  
>8,000 Conversations



Youth Education



EV Owners Meetings  
>600 Members



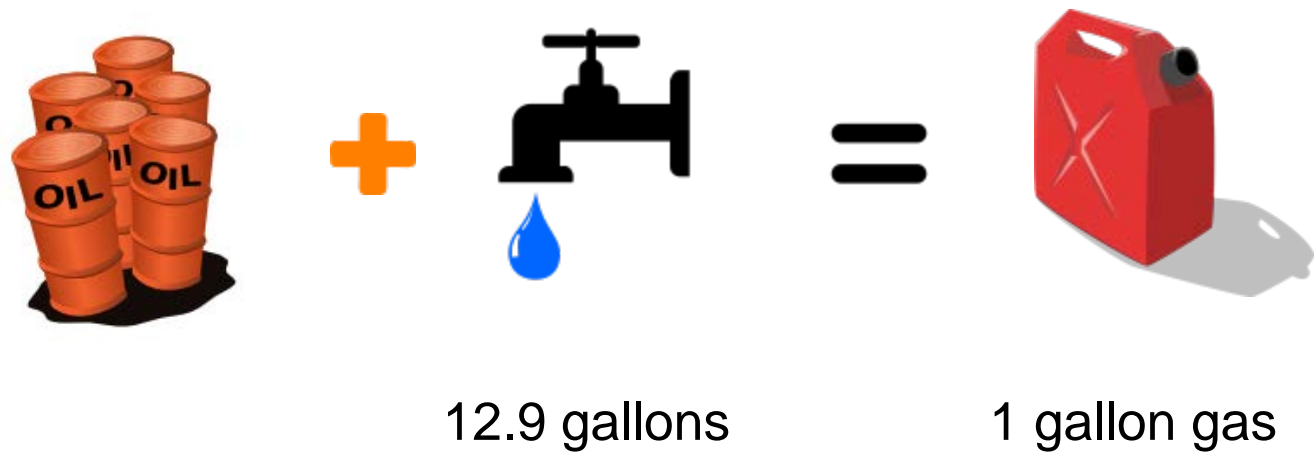
~2,000 Test Drives

# EV Owners Love their Cars

- Instant pep!
- Low center of gravity
- Smooth acceleration
- Fill ups
- Low maintenance
- Quiet, relaxing
- Save money



# GAS CONSUMES WATER



# CAR POLLUTION KILLS MORE THAN TWICE AUTO ACCIDENTS

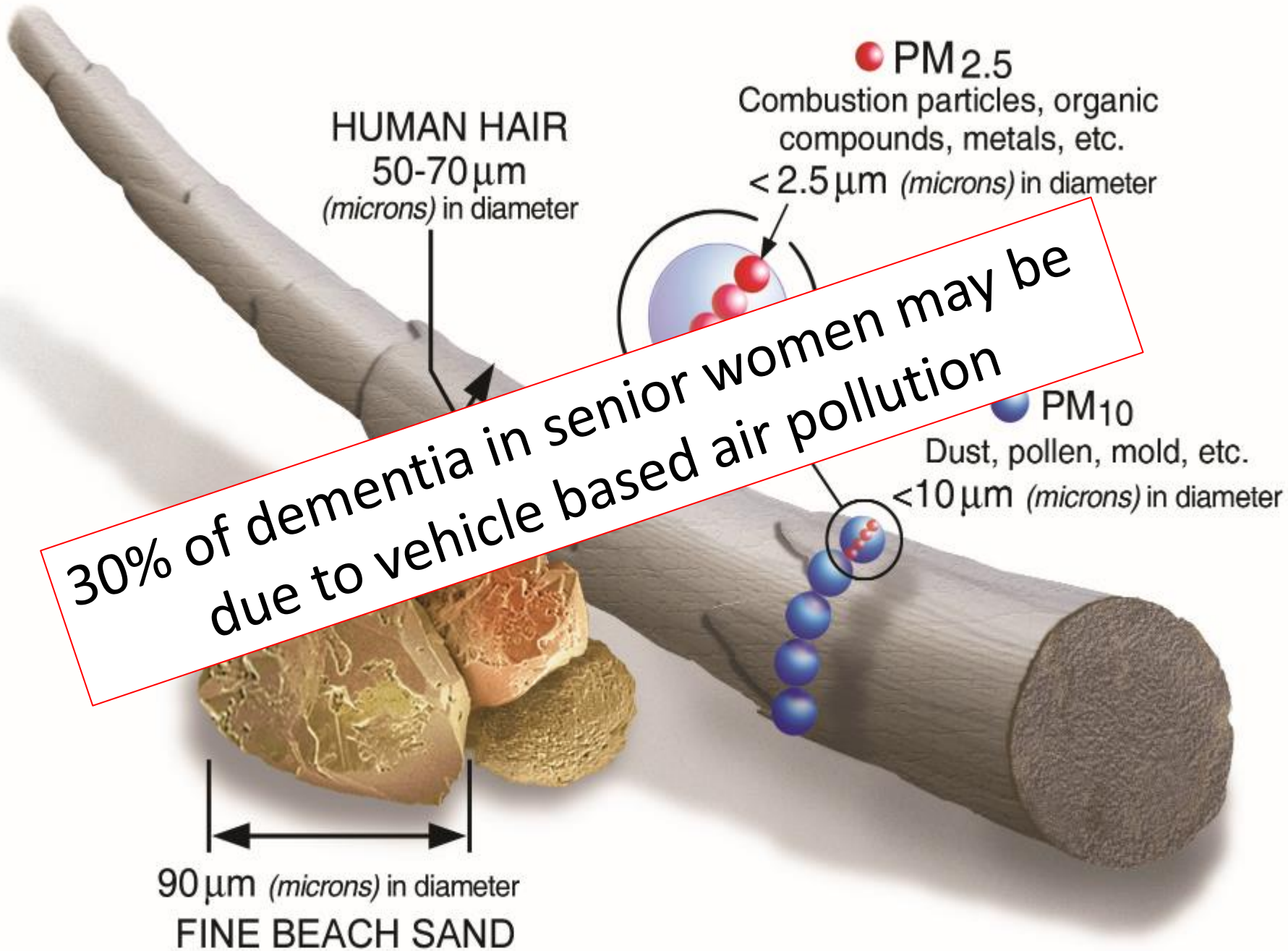




Sacramento  
On Most Polluted US Cities List

- 14<sup>th</sup> Short Term 2.5 Particle Pollution (Grade F)
- 8<sup>th</sup> Highest Risk In Ozone-Polluted Cities (Sacramento-Roseville, Grade F)





HUMAN HAIR  
50-70  $\mu\text{m}$   
(microns) in diameter

● PM<sub>2.5</sub>  
Combustion particles, organic  
compounds, metals, etc.  
< 2.5  $\mu\text{m}$  (microns) in diameter

30% of dementia in senior women may be  
due to vehicle based air pollution

● PM<sub>10</sub>  
Dust, pollen, mold, etc.  
< 10  $\mu\text{m}$  (microns) in diameter

90  $\mu\text{m}$  (microns) in diameter  
FINE BEACH SAND

Average Gas  
Station:  
\$4M/Year on  
Fuel Sales

EV Fuel \$'s  
Stay Locally



# Affordable 200 Mile+ Vehicles

2017-2018



Tesla Model 3



Hyundai Crossover SUV



Nissan 2018 LEAF

Copyright Carscoops.com

**10 Months, 11,000 Miles**

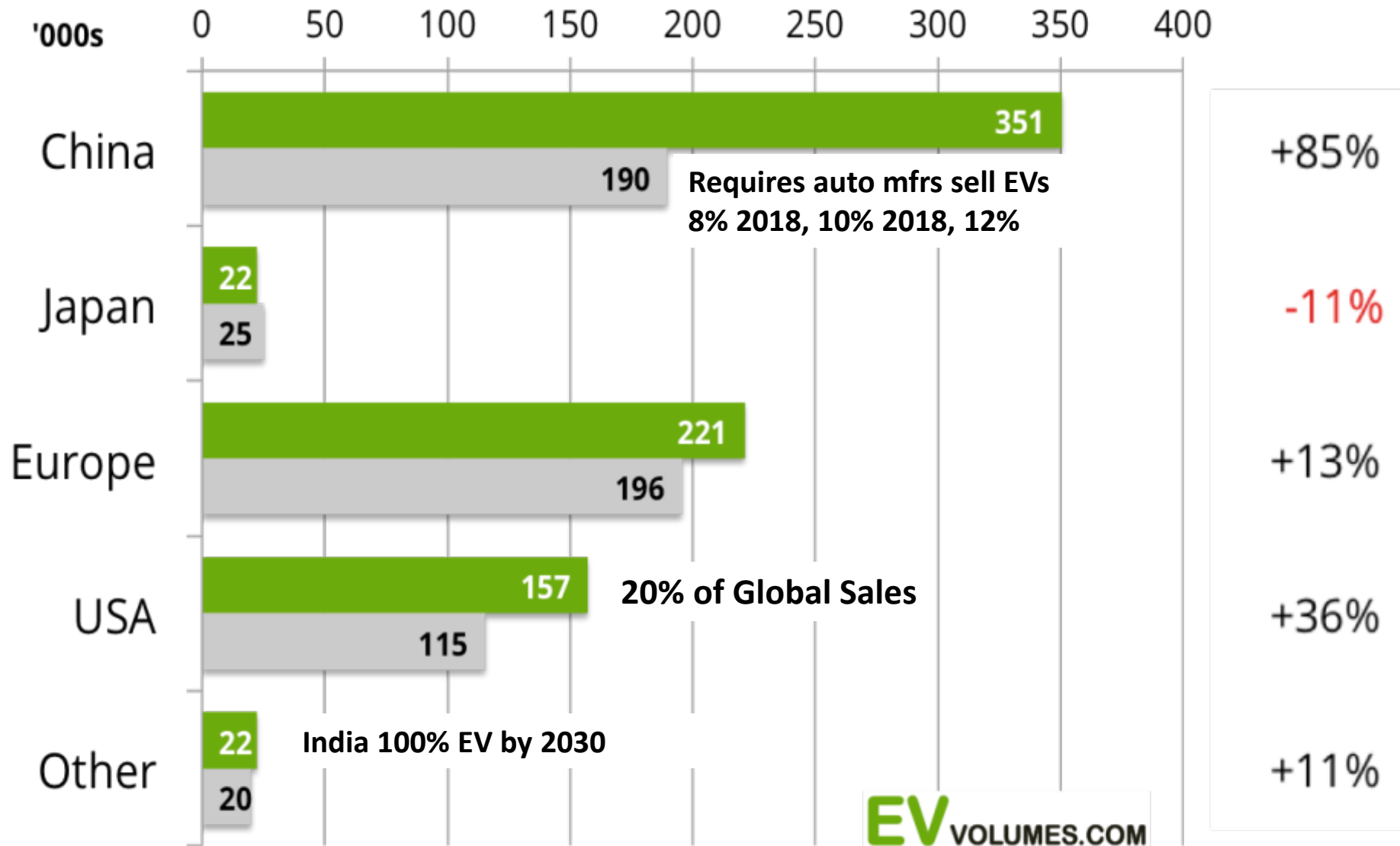


**Still on first tank of gas**

# Plug-in Sales and % Growth

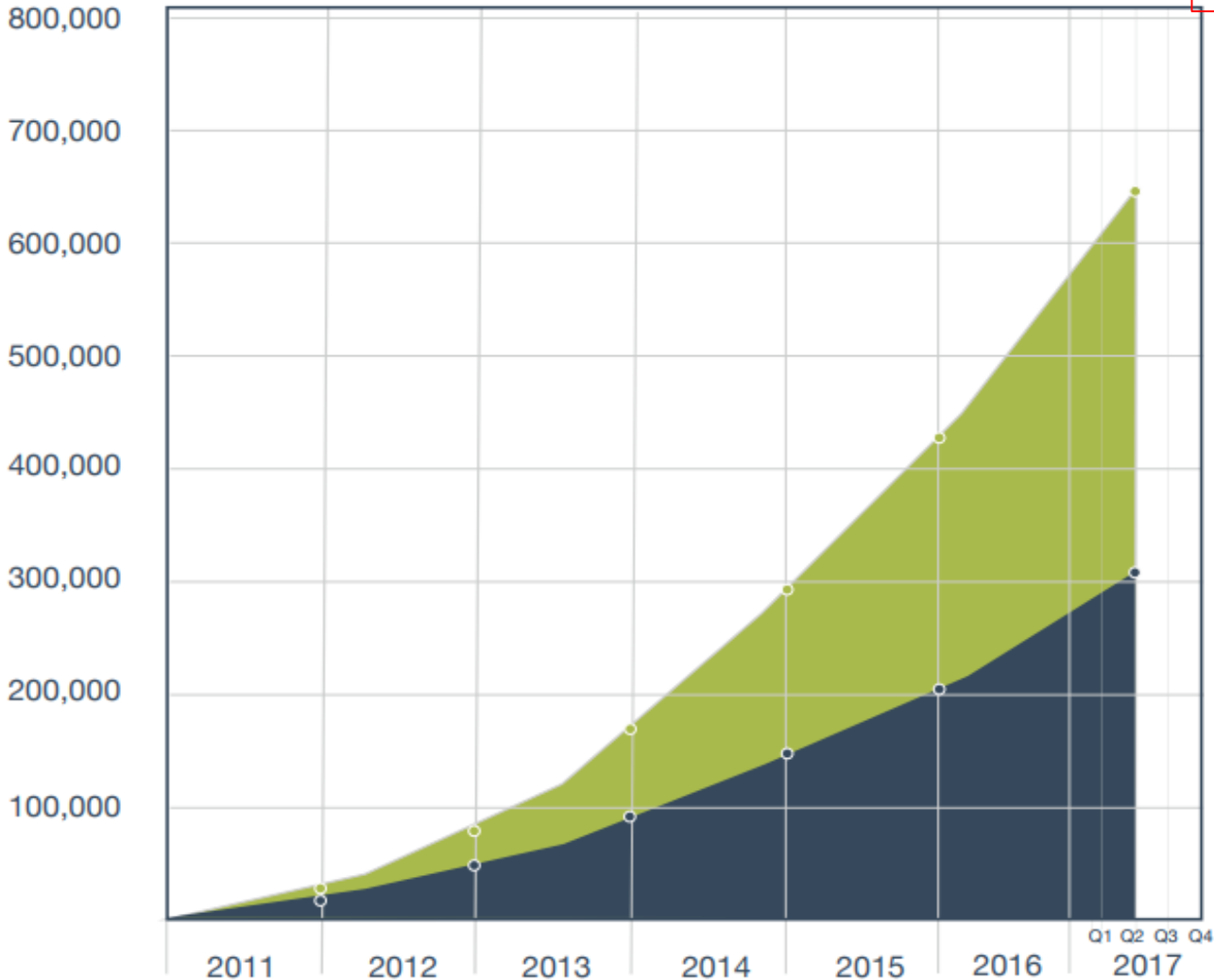
■ 2016 Jan-Dec

■ 2015 Jan-Dec



**Sacramento Region: ~10,000**  
**State: 3.5% New Cars are EV**  
**Sacramento: 2.5% EV**

CUMULATIVE SALES

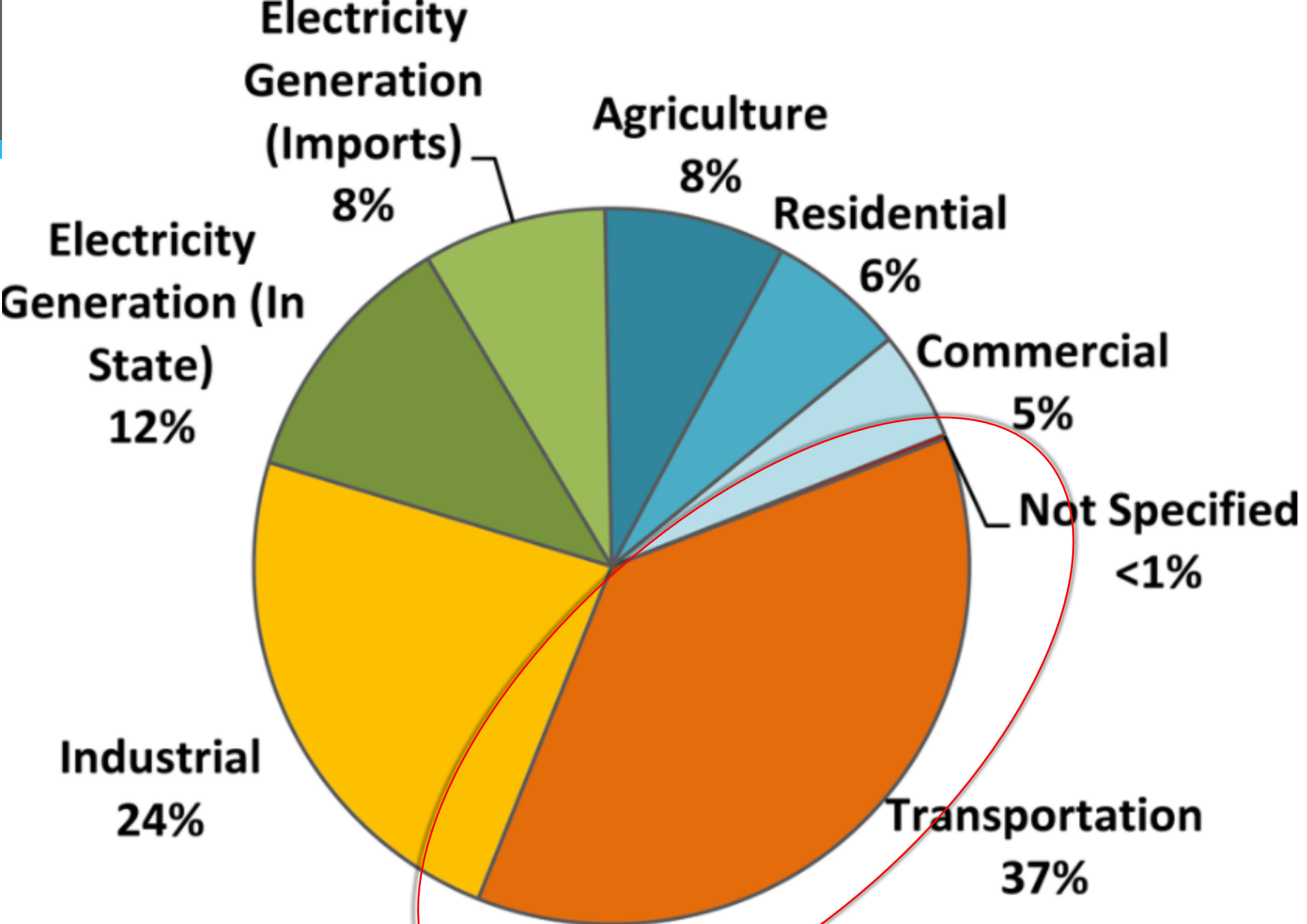


- NATIONAL SALES  
June 2017: 16,591  
2017 Sales: 86,934  
Cumulative 2011-present: 647,956

- CALIFORNIA SALES\*  
June 2017: 8,296  
2017 Sales: 43,467  
Cumulative 2011-present: 308,174

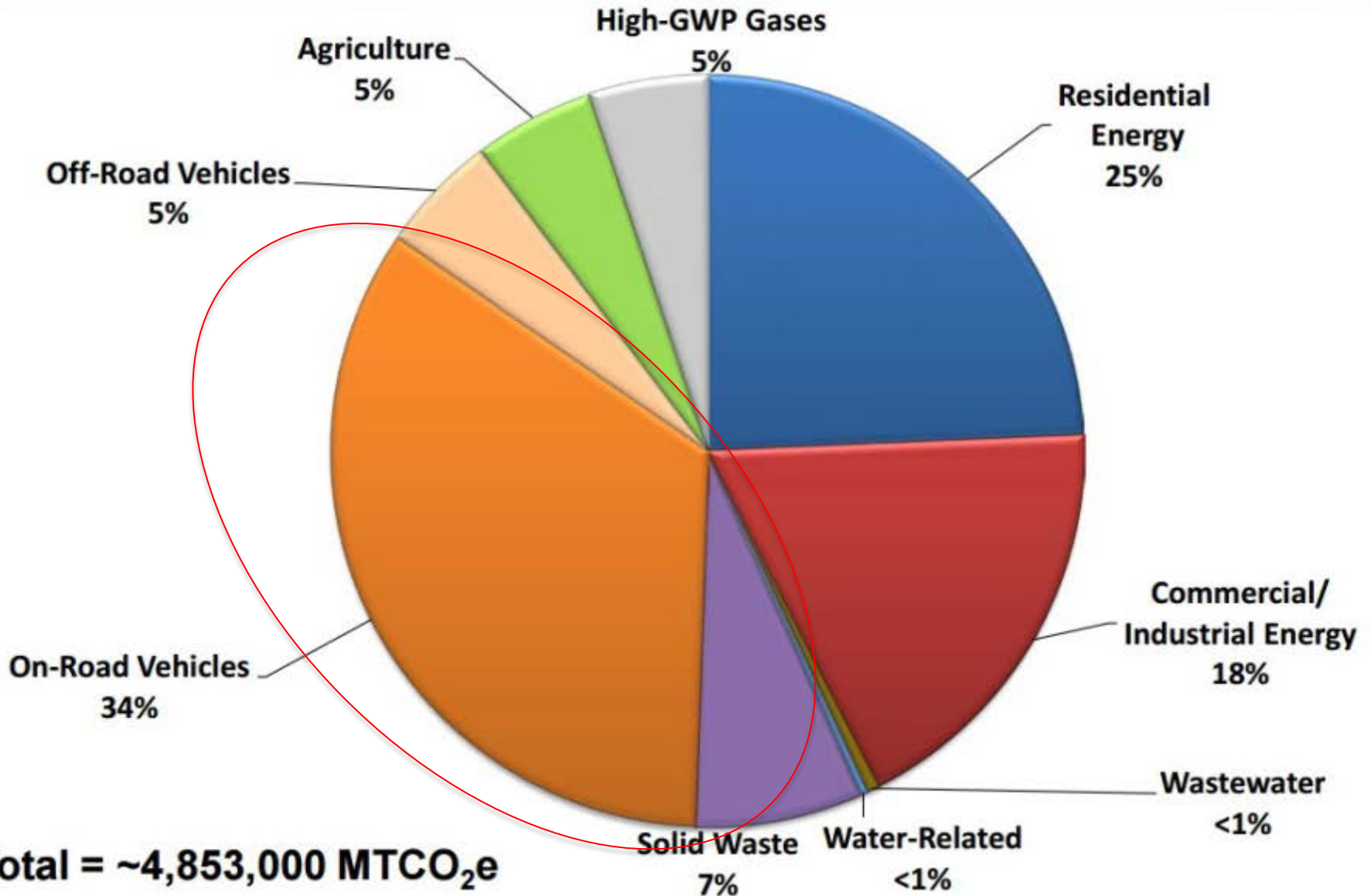
View Data Calculation  
[www.pevcollaborative.org/data-caculation](http://www.pevcollaborative.org/data-caculation) >>

\* Assumes CA sales are approximately 50% of National sales (7/5/2017)  
Reference: [www.hybridcars.com](http://www.hybridcars.com)



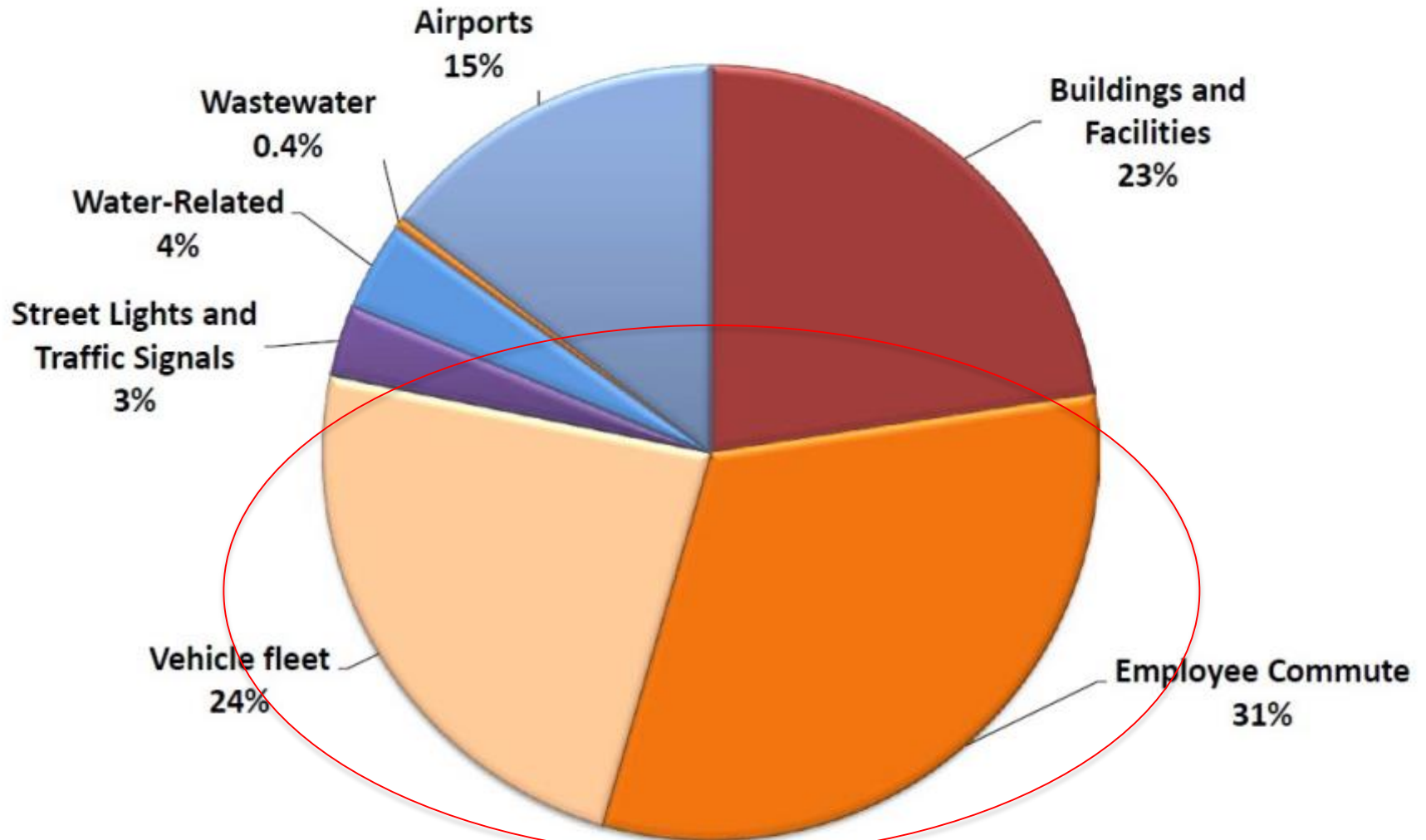
**2014 Total CA Emissions: 441.5 MMTCO<sub>2</sub>e**

# 2015 GHG Emissions Inventory, Unincorporated Sacramento County





# 2015 GHG Emissions Inventory, Sacramento County Operations



Total = ~123,397 MTCO<sub>2</sub>e

# Charging Stations

## Early Successes

- Congestion, Uncertainty
- Musical chairs
- Parking Violations

## Level 1 – Trickle Charging

- 36 Miles per workday
- >90% of commuters
- Electricity cost ~ cup of coffee
- Enabler for many
- People like free



Marc Geller, Electric Auto Association  
**CurrentEvents 6/2017: There's No Place Like Work! *The Overwhelming Case for Underwhelming Power***

# Sacramento Early EV Leadership

- Leader, Early Adopter
- Set EV Policy in 1993
- SMUD partnership
- Free charging
  - City, County and SMF
- City provided free or discounted parking



# City Hall Parking Garage

- 1035 Parking Spaces
- Discounted Monthly Pass
- 21 Charging Spaces
- 120-150 EV drivers
- Full

## Consider:

- Review 1993 Policy
- Increase Trickle Charging
- Increase ICE Parking Fees
- Discount EV Parking Fees



Charge Level	Charge Rate	Purpose	Use
AC Level 1	4 Miles / Hour	Trickle, Long Dwell	Homes, Hotels, Workplace, MUDs
AC Level 2	11 - 20 Miles / Hour	Medium Dwell	Homes, Fleets, Shared EVs
DC Fast Charge	100 – 400 Miles / Hour	10 to 60 minutes	Corridors, MUD, Insurance ...



Colfax

20 to 200 miles in 10 mins.



Sac Airport



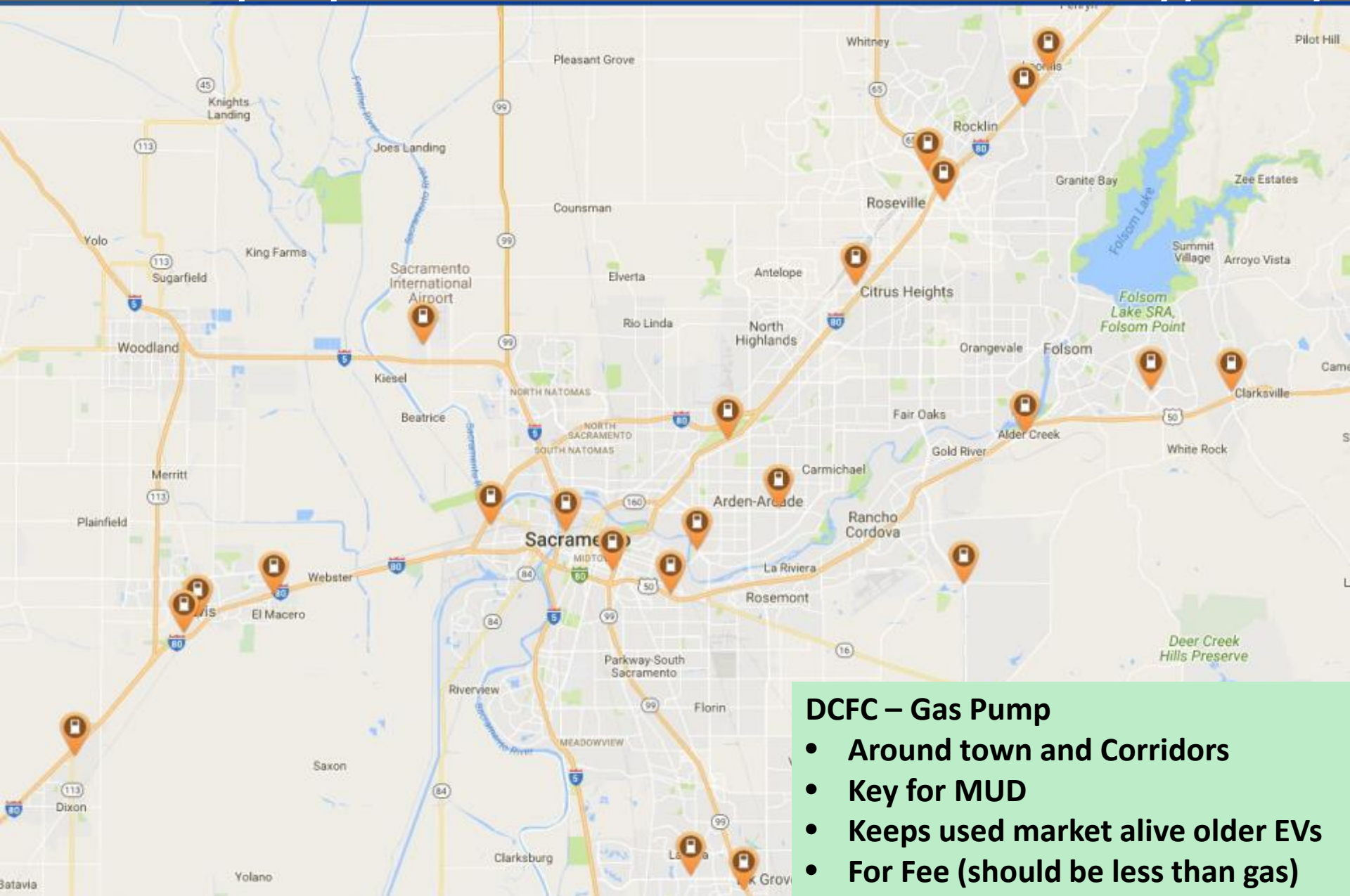
Elk Grove



Emigrant Gap

# Charging Stations

7/2017



- DCFC – Gas Pump**
- Around town and Corridors
  - Key for MUD
  - Keeps used market alive older EVs
  - For Fee (should be less than gas)

## Early Successes

- 2001 Installed EV chargers
- Level 2 - 11 to 20 miles/hour
- Free, popular, congested
- Added 12 Trickle chargers

## Level 1 – Trickle Charging

- Perfect match
- Electricity cost ~ \$1 to \$10 / trip
- People like free

## DCFC – Fast Charging

- Perfect match
- Guaranteed charging
- Passenger drop offs



## Auto Rentals:

- Long range EVs for visitors
  - Volt, Prius Prime, Bolt, Tesla 3
  - Free downtown parking



## Used EV Market Is Confused

- New prices are very confusing
  - Incentives differ wildly
    - State, Air District, Utility, Income Level
    - Federal Incentive is tax rebate
- Can't take it to local mechanic
- Range can vary significantly
- Expected life not understood

Infrastructure needs to include used car owners



# Used EVs

MSRP:	\$31,500
Less Federal:	\$ 7,000
Less State:	\$ 2,500
Less Mfr Incentive:	\$ 10,000
Less Dealer Incentive:	\$ 3,300
SMUD Incentive	<u>\$ 600</u>

Net (before tax, ship) \$ 17,100

OR

4 Year/30,000 Used: \$ 14,000

OR

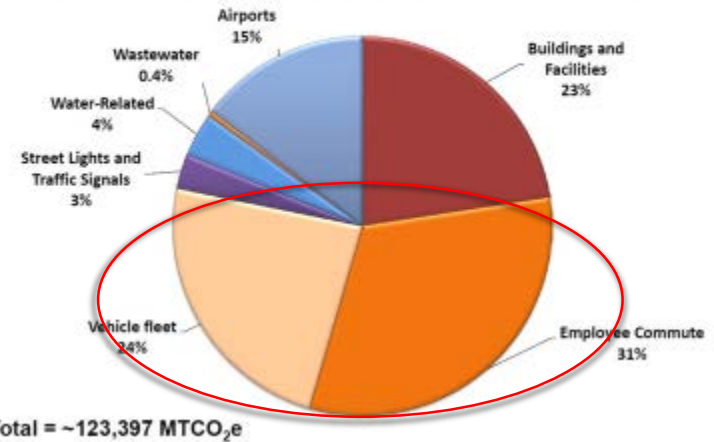
3 year lease \$100 or less, \$0 net drive off



# EV Adoption Can Be Increased

- Adjust parking rates for clean air.
  - Incent EVs
    - Free, discounted parking
    - Free trickle charging
    - Shift Level 2s to Level 1s
    - Target capacity to EVs
  - Discourage ICE Vehicles
    - Higher Parking Rates
- Blend use of Trickle L1 and DCFC
- Don't assume all EVs will have 200 mile range
- Support development of used market

## 2015 GHG Emissions Inventory, Sacramento County Operations



## 2015 GHG Emissions Inventory, Unincorporated Sacramento County

