

# Green Purchasing Roundtable



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Alameda County General Services Agency

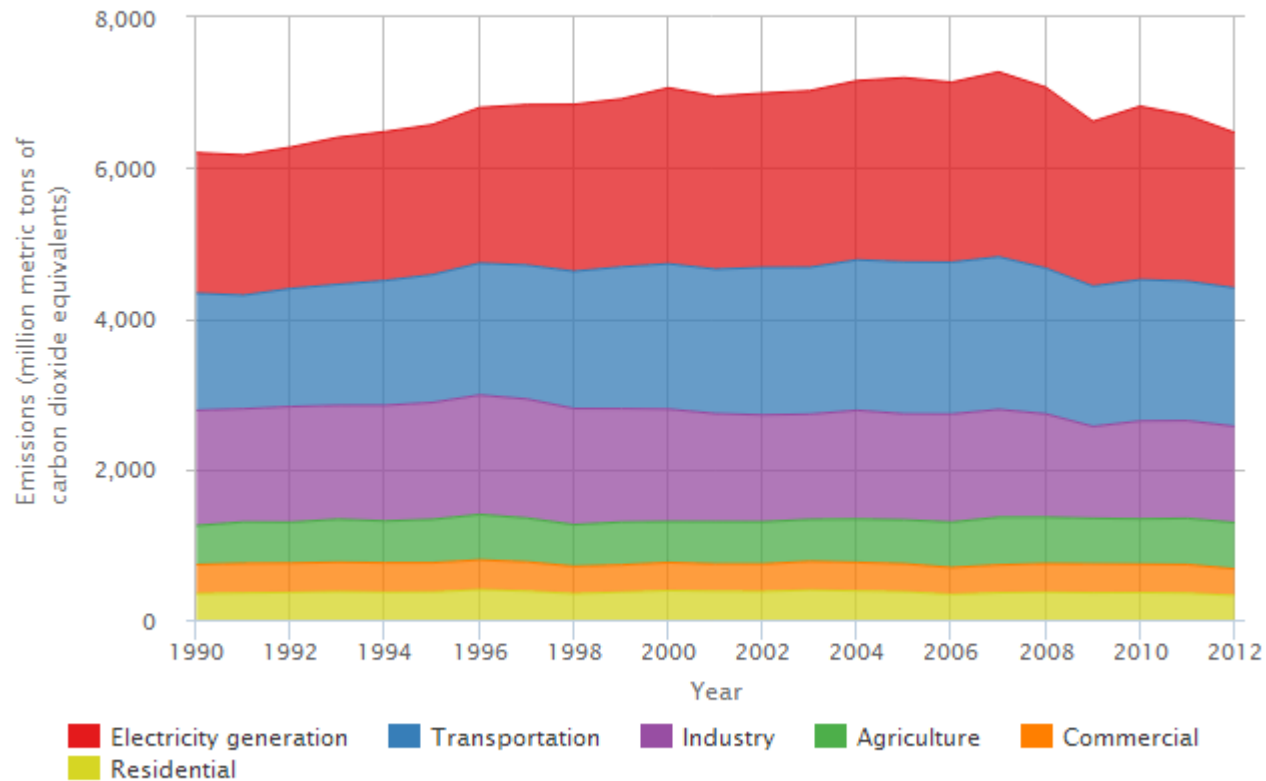
# Agenda

- Introductions
- Why Fleets are Important
- Green Fleet Strategies
- Electric Vehicles 101
- Sonoma County Case Study – True Cost of Installing EV Charging Stations
- Purchasing Opportunities and Resources
- Q&A and Discussion



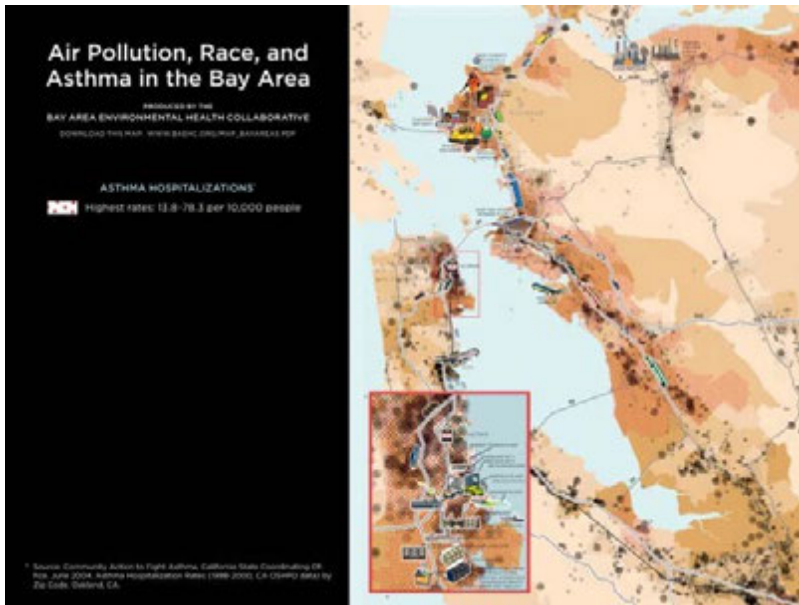
# Global Impact of Fleets

U.S. Greenhouse Gas Emissions  
by Economic Sector, 1990-2012



Source: U.S. EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012.  
<http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>

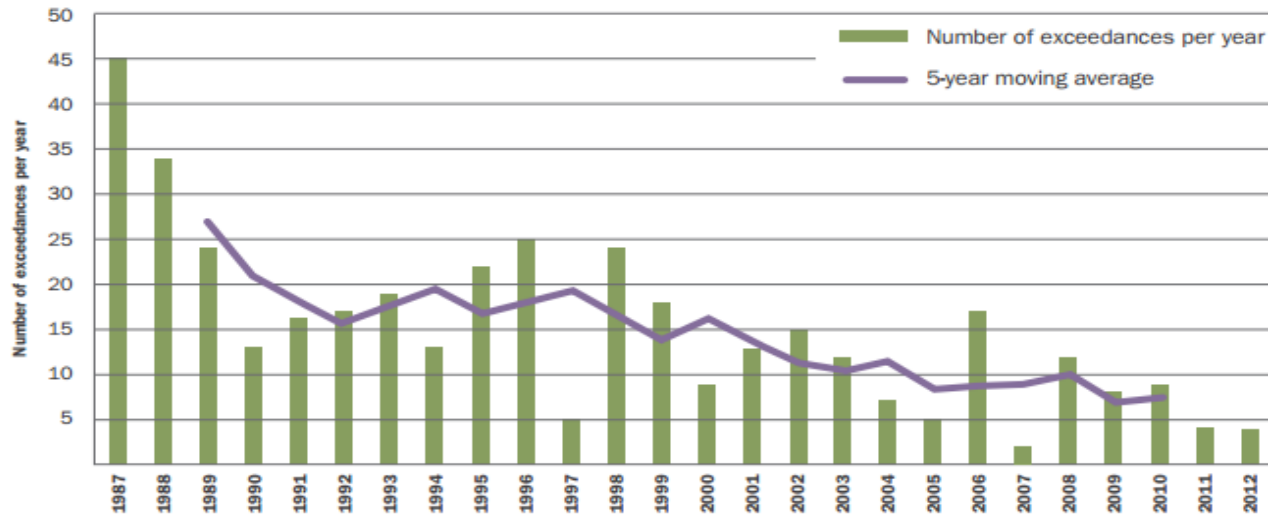
# Local Impact of Fleets



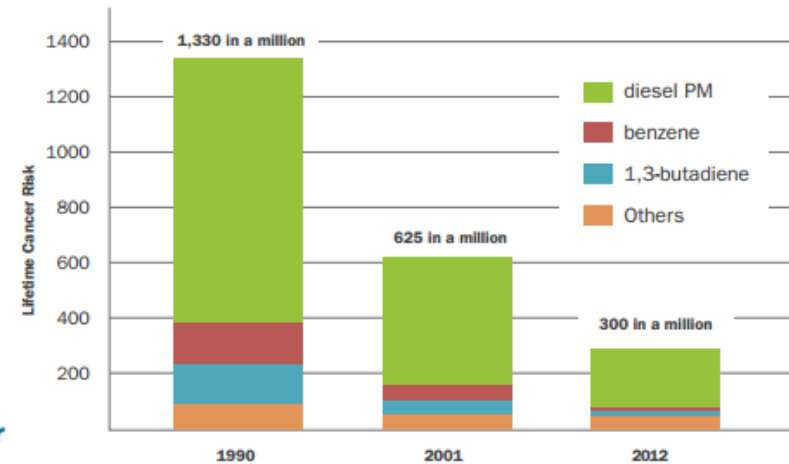
- Criteria emissions (smog, Nox, etc.)
- Asthma/cancer and environmental issues

# It's getting better!

**Figure 1.3** Number of days per year with at least one monitoring location exceeding the current 8-hour ozone national air quality standard (75 ppb)



**Estimated Bay Area lifetime cancer risk from toxic air contaminants, based on air pollution measurements<sup>16</sup>**



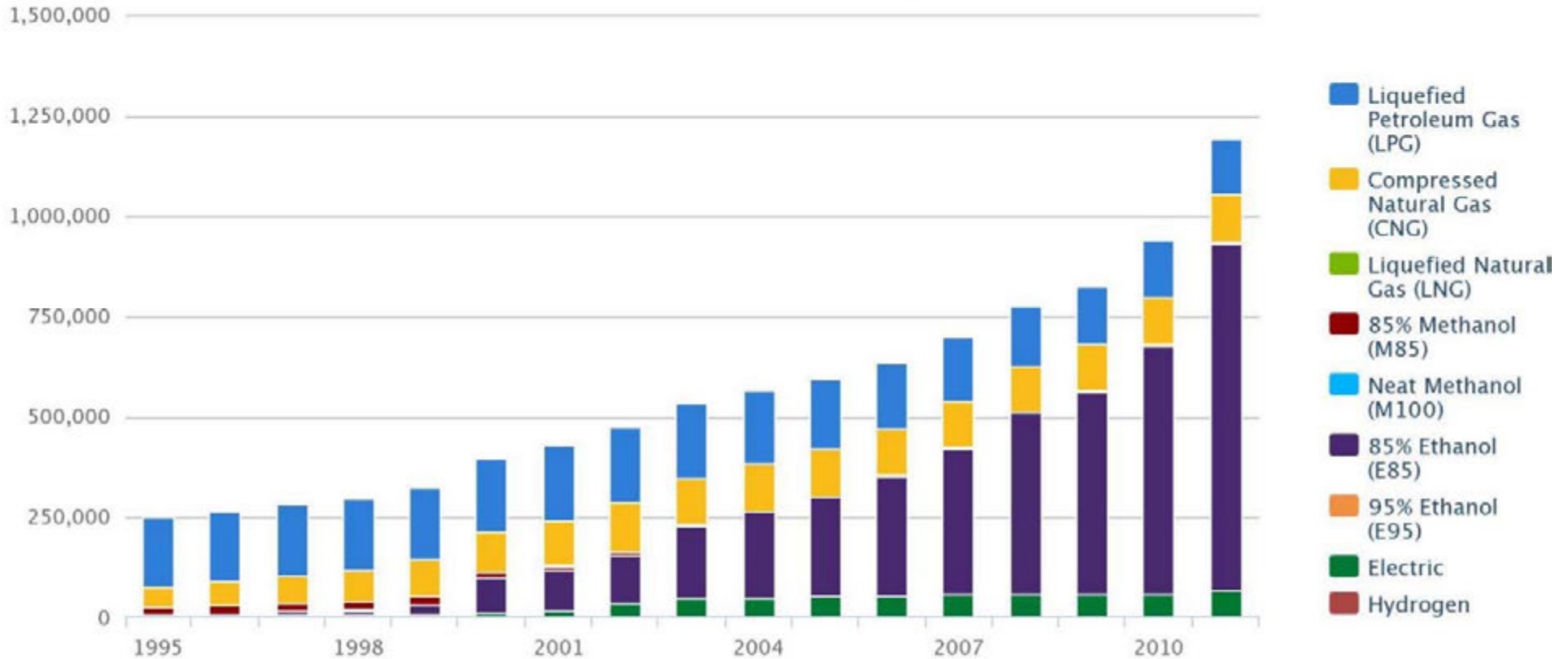
Source:  
BAAQMD

# Advanced Fuel Vehicles



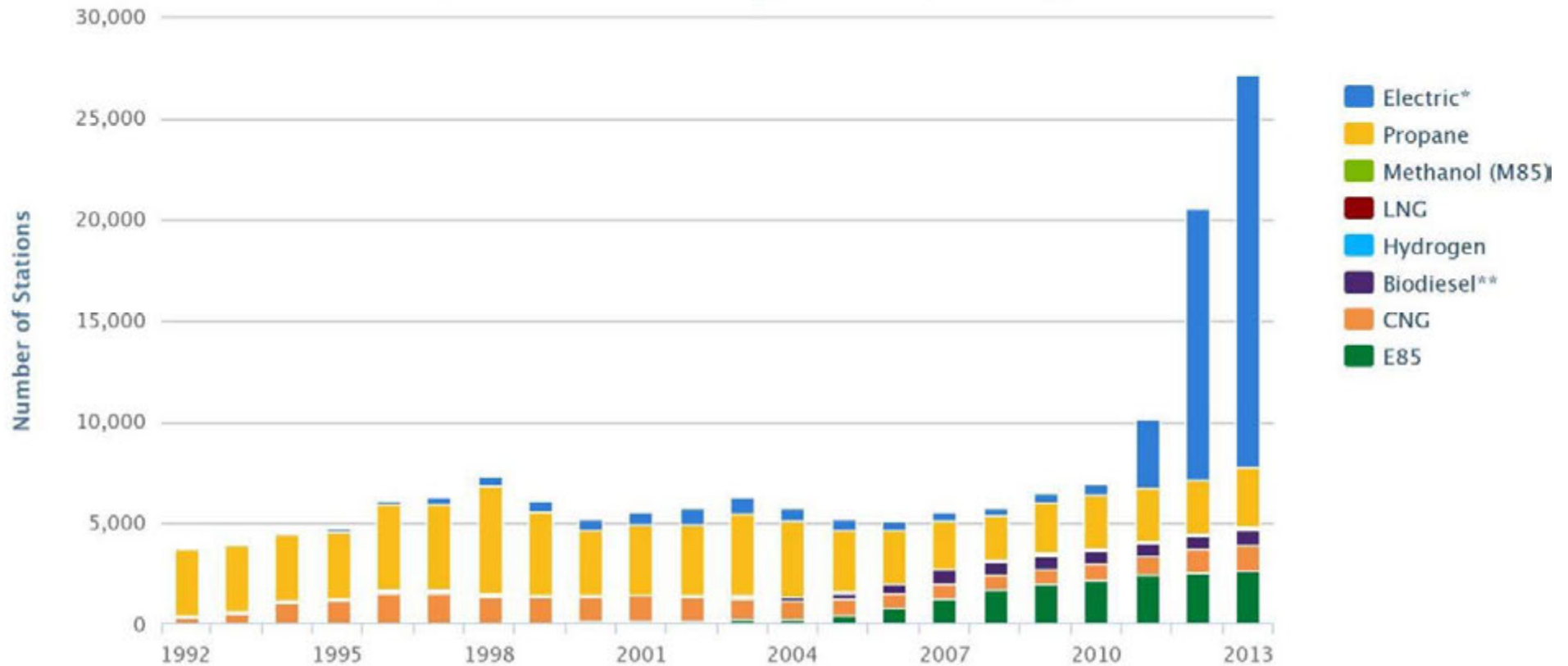
# Advanced Fuel Vehicles

Alternative Fuel Vehicles in Use



# Advanced Fuel Stations

U.S. Alternative Fueling Stations by Fuel Type





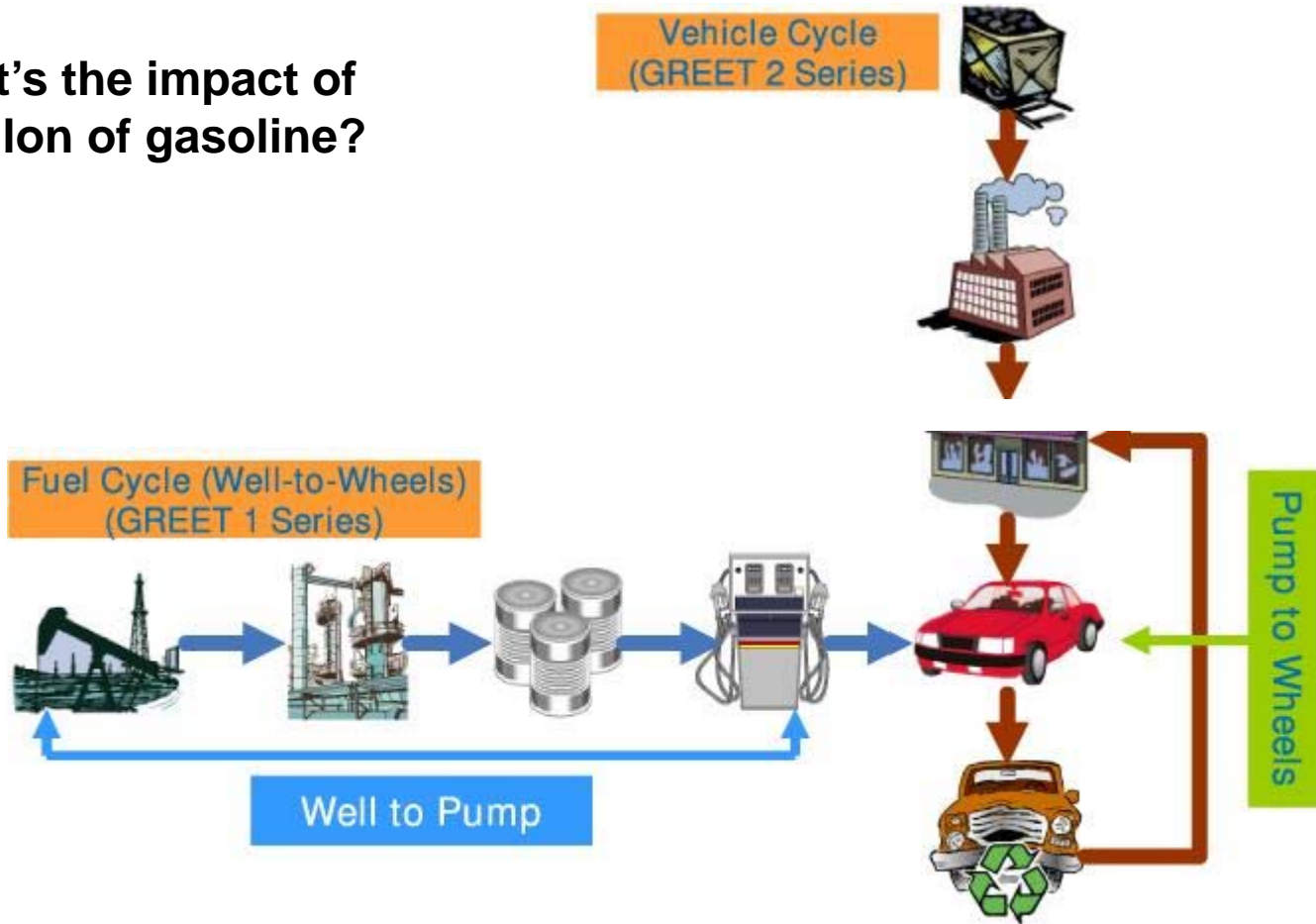
# Advanced Fuel \$

Average Retail Fuel Prices in the U.S.



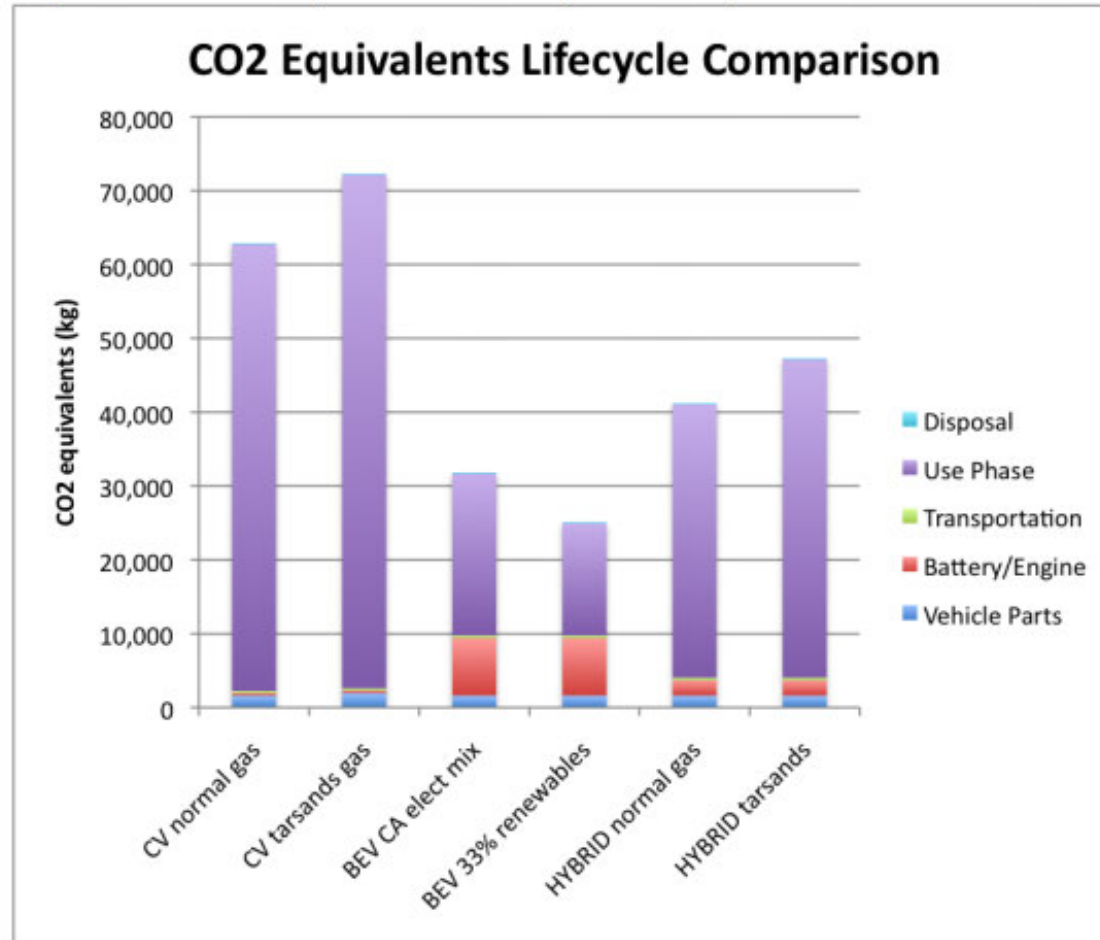
# Well to Wheels

What's the impact of a gallon of gasoline?



# Focus on Fuel

Figure 10. CO2 Equivalents Lifecycle Comparison



Source:  
UCLA/CARB

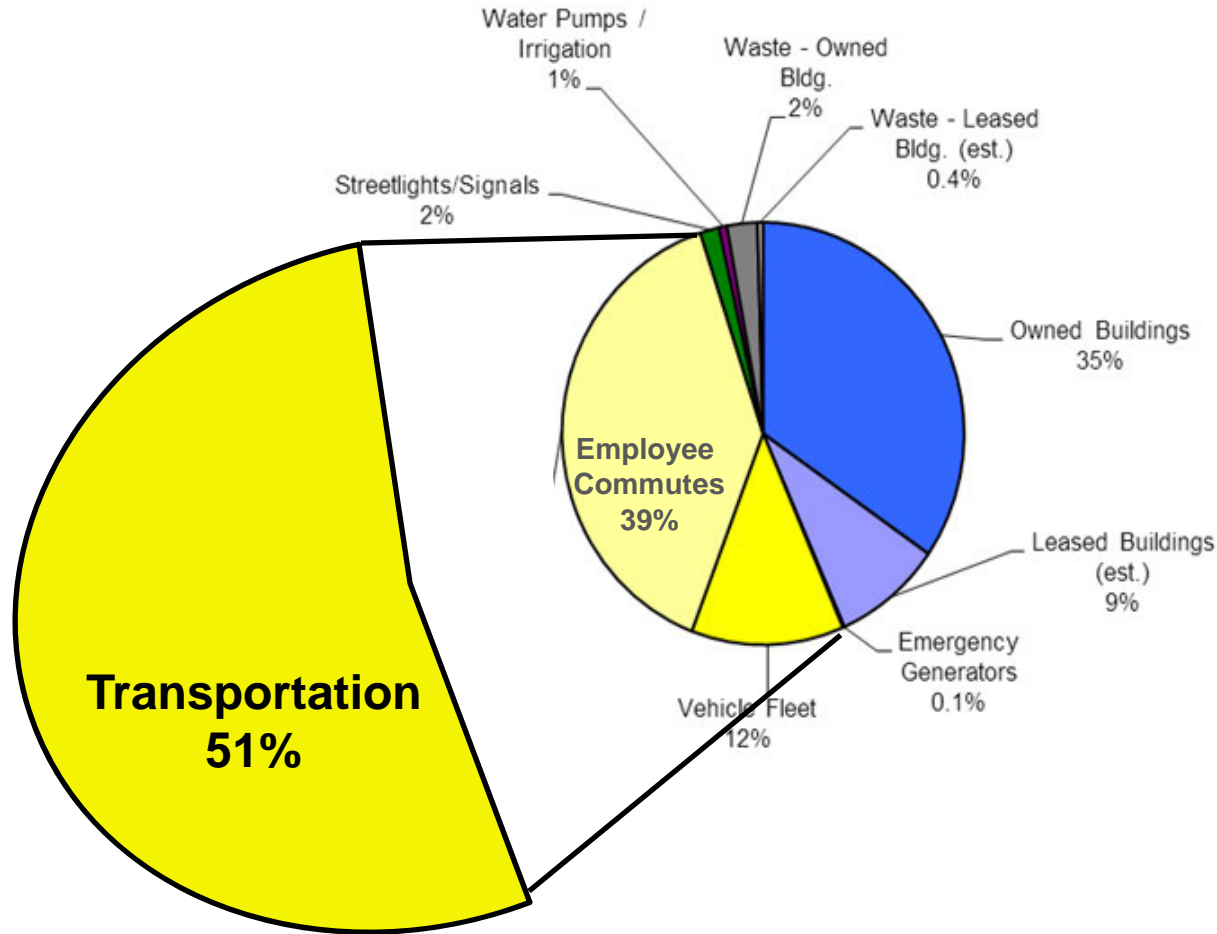
# Alameda County Fleet Facts

- 9,500 County employees
- Appx. 1,000 vehicles
- 3 motor vehicle shops
- Appx. .5 million gallons of fuel for internal fleet use and 9 million VMT

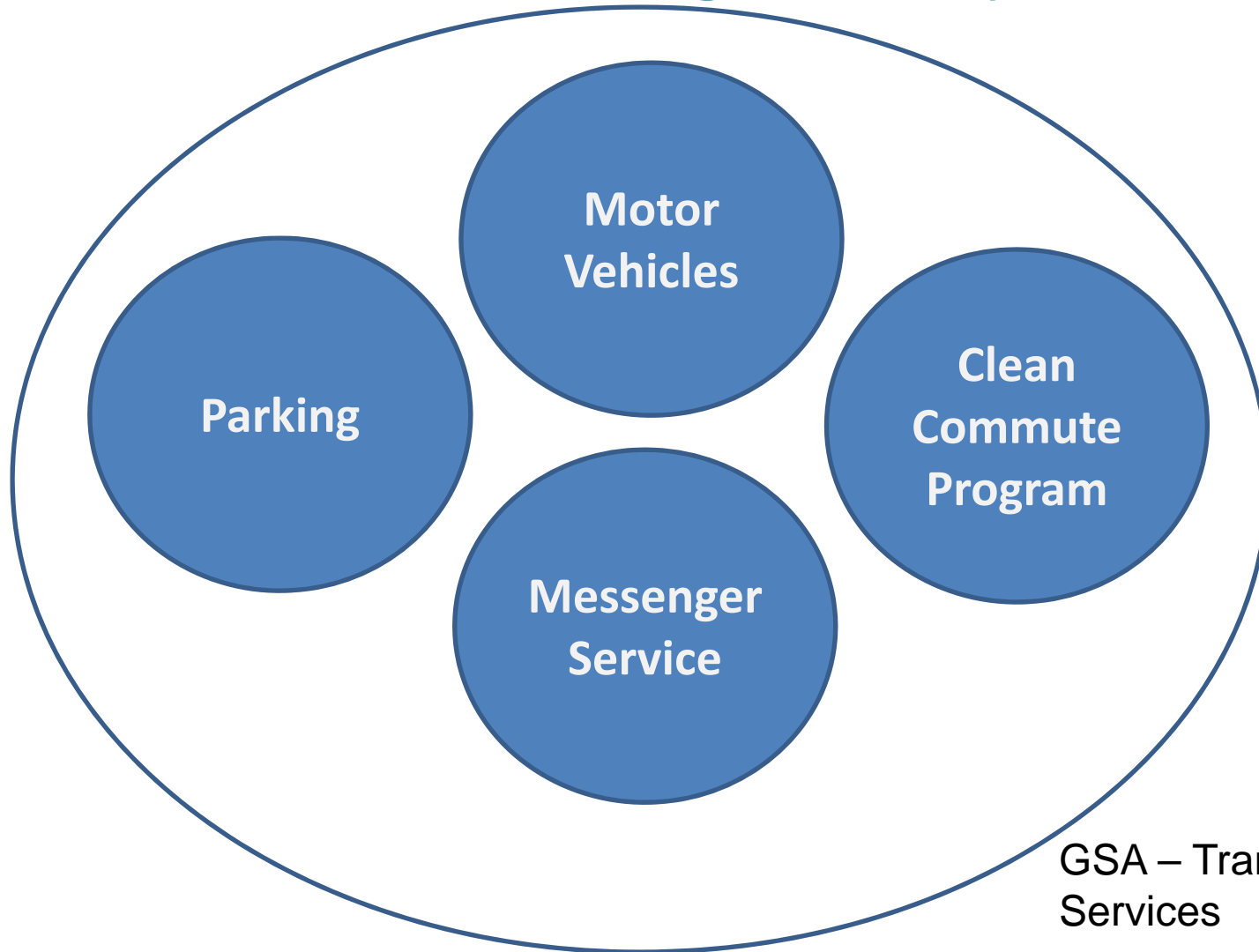


# Countywide Emissions

Government Operations Emissions by Sector Including Select Associated Emissions (2003)



# Rethinking Mobility

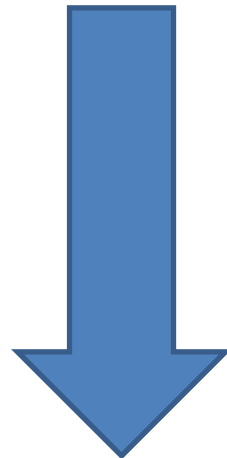


GSA – Transportation Services

## Goal

20% reduction in  
drive alone  
commuting by  
2017

(about 1,200  
commuters)



# Vehicle Use Policy



Right-sizing  
through  
minimum usage  
requirements



Right-typing –  
only justified use  
of SUVs, etc.



Greenest  
vehicles  
available



# General Fleet Best Practices

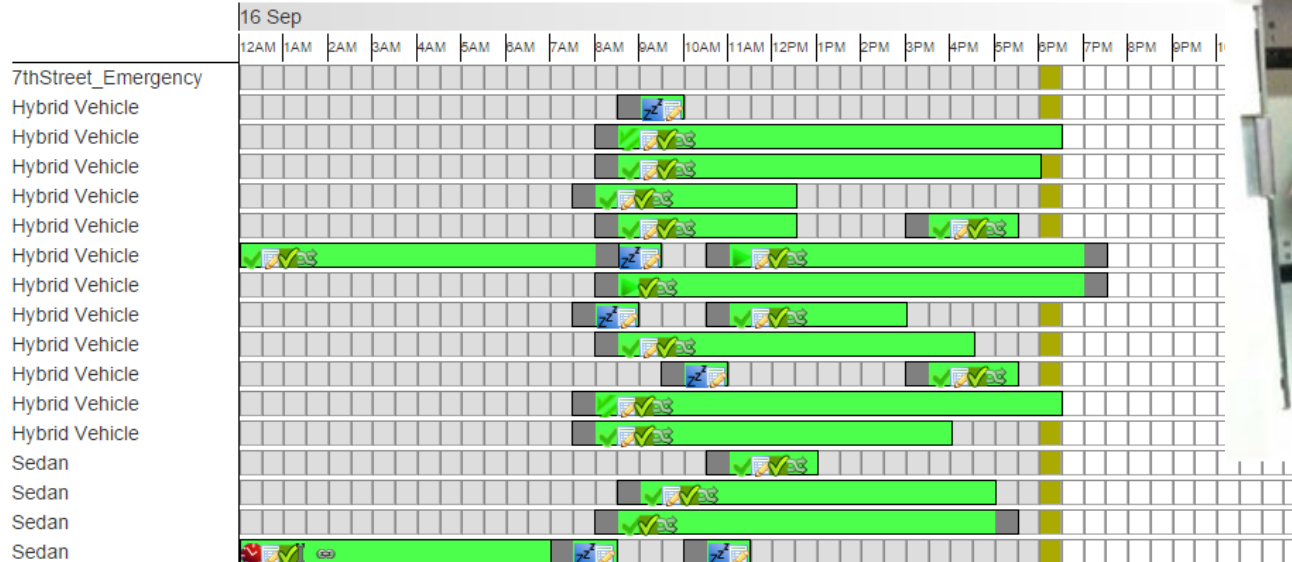
- 1- Measure your baseline (Fleet software, GPS, etc.)
- 2- Set goals
- 3- Measure progress

EQUIPMENT #	EQUIPMENT DESCRIPTION	METER TYPE	BEGINNING METER	ENDING METER	USAGE	QTY	TOTAL COST	MPG	FUEL CPM	
CLASS TOTALS:										
COUNT OF EQUIPMENT: 15					SUMS:	6,212.82	21,400.44			
					AVERAGES:	414.19	1,426.70			
14001792	2002 GMC 1500	M	55,778	59,459	3,681	898.40	3,054.48	4.10	0.83	
14001793	2002 GMC 1500	M	63,393	68,565	5,172	344.10	1,182.92	15.03	0.23	
14001797	2002 DODGE 1500	M	28,064	30,301	2,237	166.00	566.56	13.48	0.25	
14001802	2002 GMC 1500	M	43,799	47,180	3,381	268.10	916.79	12.61	0.27	
14001942	2000 DODGE 1500	M	92,827	95,955	3,128	584.10	1,997.78	5.36	0.64	
14001947	2001 DODGE 1500	M	115,138	122,605	7,467	859.50	2,933.64	8.69	0.39	
14002094	2001 CHEVROLET 1500	M	14,386	14,962	576	47.40	165.37	12.15	0.29	
14002640	2007 FORD F150	M	60,302	77,352	17,050	1,103.00	3,767.01	15.46	0.22	
14002646	2008 NISSAN TITAN	M	39,491	43,004	3,513	214.10	731.24	16.41	0.21	
14002647	2008 NISSAN TITAN	M	58,509	66,021	7,512	569.90	1,960.50	13.18	0.26	
14002841	2012 CHEVROLET COLORADO	M	3,391	7,777	4,386	330.70	1,124.99	13.26	0.26	
14002842	2012 CHEVROLET COLORADO	M	3,017	7,373	4,356	322.60	1,118.06	13.50	0.26	
14002843	2012 CHEVROLET COLORADO	M	2,382	7,200	4,818	321.10	1,100.53	15.00	0.23	
14002940	2013 FORD F150	M	0	11	11	10.10	35.08	1.09	3.19	
14002942	2013 FORD F150	M	0	12	12	24.20	80.34	0.50	6.70	
METER TYPE TOTALS: M					SUMS:	67,300	6,063.30	20,735.29		
					AVERAGES:	4,486.67	404.22	1,382.35		
COUNT OF EQUIPMENT: 15										
AVERAGE MPG: 11.10										
AVERAGE CPM: 0.31										

# Motor Pools

Availability

Oakland, CA 7th Street



Legend



# Business Travel Alternatives



# Bike Fleet



# Eco Driving

## “Eco-Driving” Tips

This vehicle has a new “eco-meter,” which measures real-time fuel efficiency in miles per gallon (MPG) to help you conserve fuel.

Drive eco-friendly and the dial will move all the way into the green. Slam on the brakes or put the pedal to the metal, the dial will stay in the red.



### Tip #1: Avoid Rapid Starts and Stops

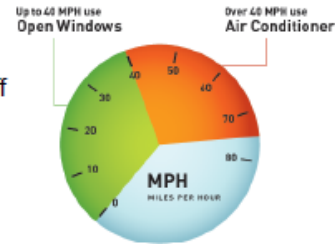
Gentle accelerations and braking can save more than \$1 per gallon and improve fuel economy up to 33%! Keep your eco-meter in the green by braking smoothly and easing into accelerations.

### Tip #2: Use Cruise Control

Using cruise control on the highway keeps you steady and efficient. Lock your cruise control to 55 miles per hour, optimal efficiency, to help save even more.

### Tip #3: Use AC at Higher Speeds

Using AC at higher speeds lets you cool off without creating fuel-guzzling aerodynamic drag.



### Tip #4: Don't Idle

Idling gets you 0 miles per gallon! And it's also against County policy to idle unless necessary.



# Reducing Waste

## 1- Re refined motor oil

- Coast Oil contract
- 5W20 (Ford) and 5W30 (GM)
- \$1.30/qt (3x cheaper)
- American Petroleum Institute (API) standards



# Reducing Waste

## 2- Lifetime Oil Filters

- Reduce waste from filters
- Doubles the life of oil
- Currently in beta testing



## Reducing Waste

### 3- Lifetime anti-freeze

- Guaranteed for 100K miles
- Cost comparable
- Lifetime vs recycled

### 4- Re-tread tires

- Mostly heavy-duty
- Cost comparable
- Federal Executive Order 13149





# Purchasing EVs for Fleets



## EV 101

### Hybrid



- Prius, etc.
- Idle elimination
- Electric at low speed
- Uses gasoline
- ICE
- No charging

### Plug-In Hybrid



- Volt, Prius Plug-In, etc.
- Idle elimination
- Electric at highway speed
- Uses gasoline
- ICE or electric motor

### Electric Vehicle



- Leaf, Spark EV, Focus EV, etc.
- Idle elimination
- Electric at highway speed
- No gasoline
- Electric motors
- Charging required

# EV 101



Level 1  
110v



Level 2  
208/240v



Level 3  
DC Fast Charge



SAE J1772  
standard



Chademo  
SAE Combo

## Why EVs?

- Eliminate tailpipe pollution, drastically reduce GHG emissions
- “Greener” over time
- Fits duty-cycle: most trips under 40-50 miles
- Cost savings
- Fun to drive!

Vehicle	Fuel Cost	Avg. MPG	Cost per Mile	Cost/8000 miles
Compact	\$4.50	27	\$0.16	\$1,280
Intermediate	\$4.50	21	\$0.21	\$1,680
Full Size	\$4.50	12	\$0.37	\$2,960
Hybrid	\$4.50	37	\$0.12	\$960
EV-Peak	\$0.15 per kWh	100 miles per charge	\$0.036	\$288
EV-Off Peak	\$0.08 per kWh	100 miles per charge	\$0.019	\$152

# EVs Are Here!



Coda



Nissan Leaf



Tesla Model S



Ford Focus BEV



Mitsubishi i-MiEV

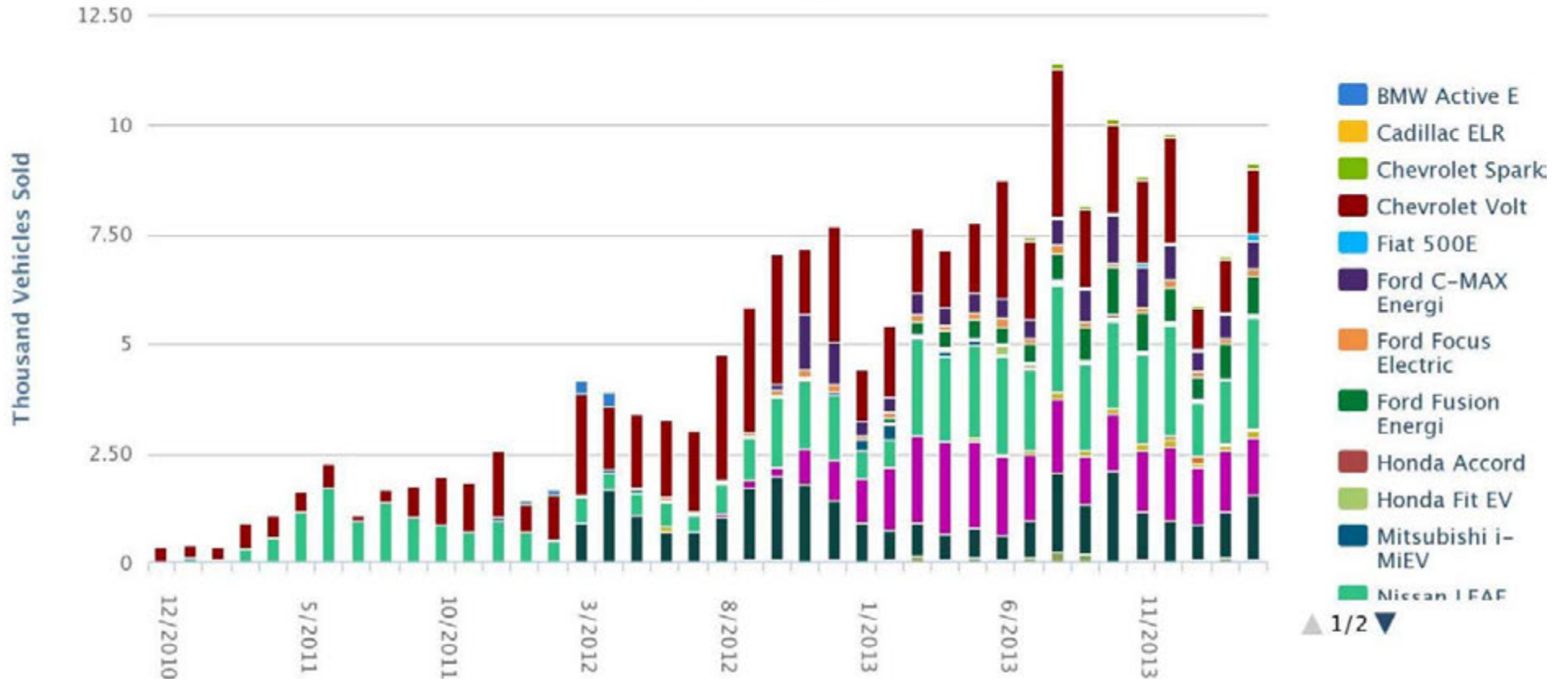
# Alameda County Transportation Services



# Alameda County Transportation Services

## EVs

U.S. PEV Sales by Model



# Heavy-Duty EVs





# Applications

- Our typical usage – under 40 miles
- Stop/go traffic
- City application



# Challenges



# Building an Electric Vehicle Charging Station Network



Source: Audi

## A Case Study – County of Sonoma

Green Fleets Roundtable  
Oakland, CA – October 22, 2014

David Worthington  
General Services  
Department  
Fleet Manager  
County of Sonoma

# Grant Overview

## 40 EV Charging Stations

- BAAQMD TFCA - \$84,960
- CEC/ABAG - \$182,762

Total - \$267,722

## 26 EV Charging Stations

- \$286,000

## 26 EVs

- \$526,000.

Total - \$812,000



# Current EV \$

## BAAQMD

- Public Agency PEV Rebate Program – doubles CVRP

<http://www.baaqmd.gov/Divisions/Strategic-Incentives/On-Road-Vehicles/Public-Agency-PEV-Rebate-Program.aspx>



# But wait, there's more!

Appx. \$20,000 in CVRP  
last year



\$1,500



\$2,500

# Additional Funding

## HVIP

\$20,000 - \$95,000



[https://www.californiahvip.org/docs/HVIP\\_Year4\\_EligibleVehicles.pdf](https://www.californiahvip.org/docs/HVIP_Year4_EligibleVehicles.pdf)

# Local Government EV Fleet Demonstration Project

- Collaborative procurement with 10 other Bay Area municipal government
- 90 all-electric vehicles and charging stations





## Benefits

- EV bid saved over \$349,000.
- Successful utilization of federal tax-incentive in vehicle bid
- EV fleet is expected to achieve fuel costs savings of \$500,000 and 1.5 million lbs. of net CO2 pollution prevention over the next five years.



# Alameda County Collaborative EV Contract

- Two-year contract (start 5/2014)
- Delivery fee (\$100-\$125)



Ford Focus EV  
**\$31,361**  
Hansel Ford (Santa Rosa)



Nissan Leaf (SV)  
**\$33,947**  
South County Nissan (Gilroy)



Zenith  
**\$96,600**  
Zenith (KY)

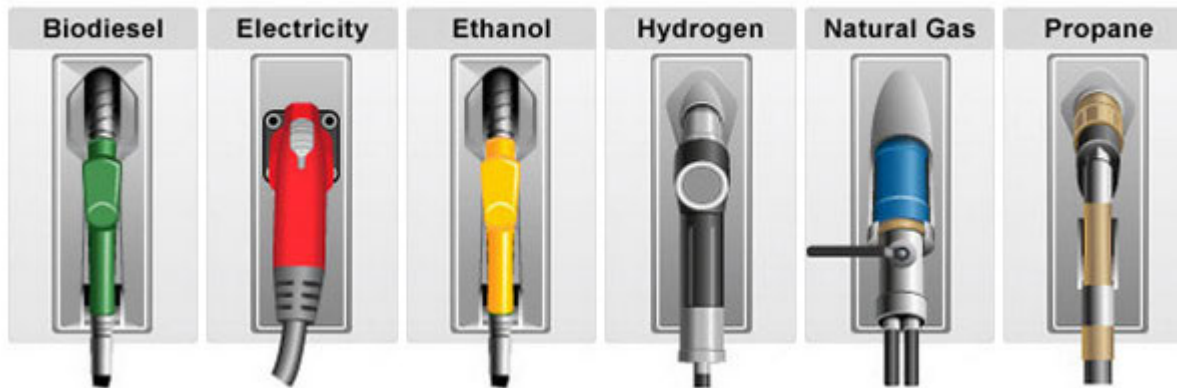
# Alameda County Collaborative EVCS Contract

**Contract starts  
January 1, 2015**

# Collaborative Fuel Bid Details

- Currently led by Santa Clara County
- Award expected in December 2014

## Fuels & Vehicles ▶

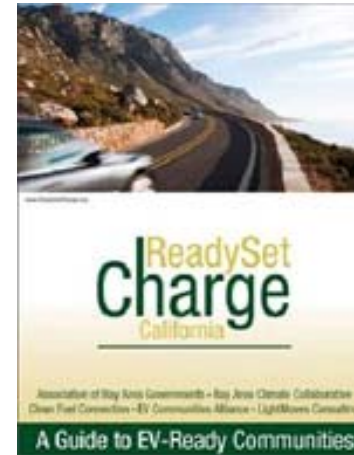


- Unleaded (87 Octane)
- CARB Ultra Low Sulfur Diesel #2
- CARB Ultra Low Sulfur Diesel #2 (Red Dyed)
- **Biodiesel (B5 and B20)**

# Resources



[www.cleancitieseastbay.org](http://www.cleancitieseastbay.org)



<http://www.baclimate.org/impact/evguidelines.html>



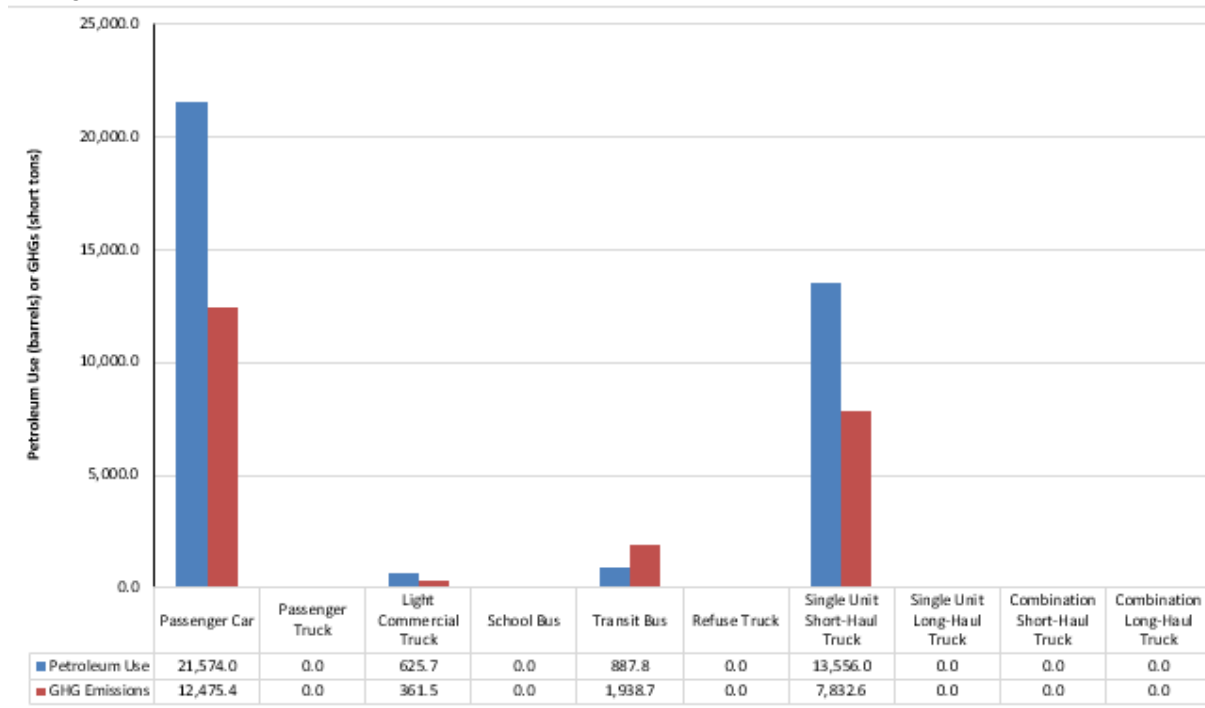
[http://www.driveclean.ca.gov/images/pev/pev\\_logo.png](http://www.driveclean.ca.gov/images/pev/pev_logo.png)

# Alameda County Transportation Services

## Resources

	B	C	D	E	F	G	H	I	J
Single Unit Long-Haul Truck		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combination Short-Haul Truck		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combination Long-Haul Truck		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>		<b>36,643.5</b>	<b>22,608.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Life-Cycle Petroleum Use and GHG Emissions - Fleet



Instructions	Inputs	Payback	Payback Outputs	TCO	TCO Outputs	Footprint	Footprint Outputs	Be
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<https://greet.es.anl.gov/main>

## For more...



[http://www.acgov.org/sustain/documents/2013\\_Alameda\\_County\\_Transportation\\_Annual\\_Report.pdf](http://www.acgov.org/sustain/documents/2013_Alameda_County_Transportation_Annual_Report.pdf)

# Questions? Comments?

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# Q&A and Group Discussion