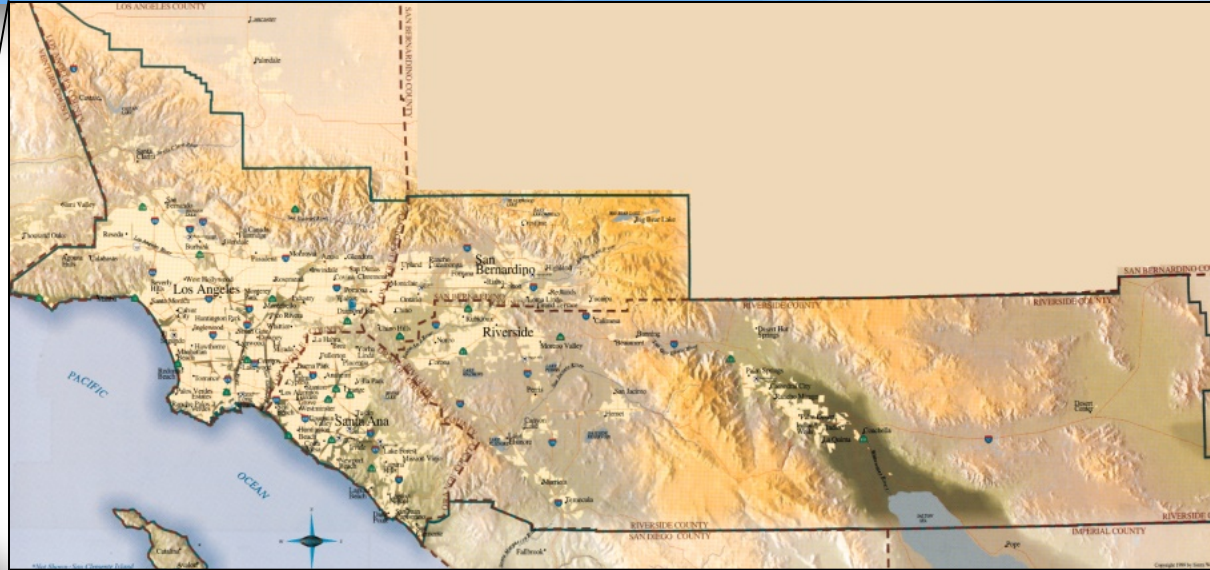


Transforming Transportation: Southern California Challenges, Lessons-learned and National Implications



Matt Miyasato, Ph.D.
Deputy Executive Officer
Science and Technology Advancement

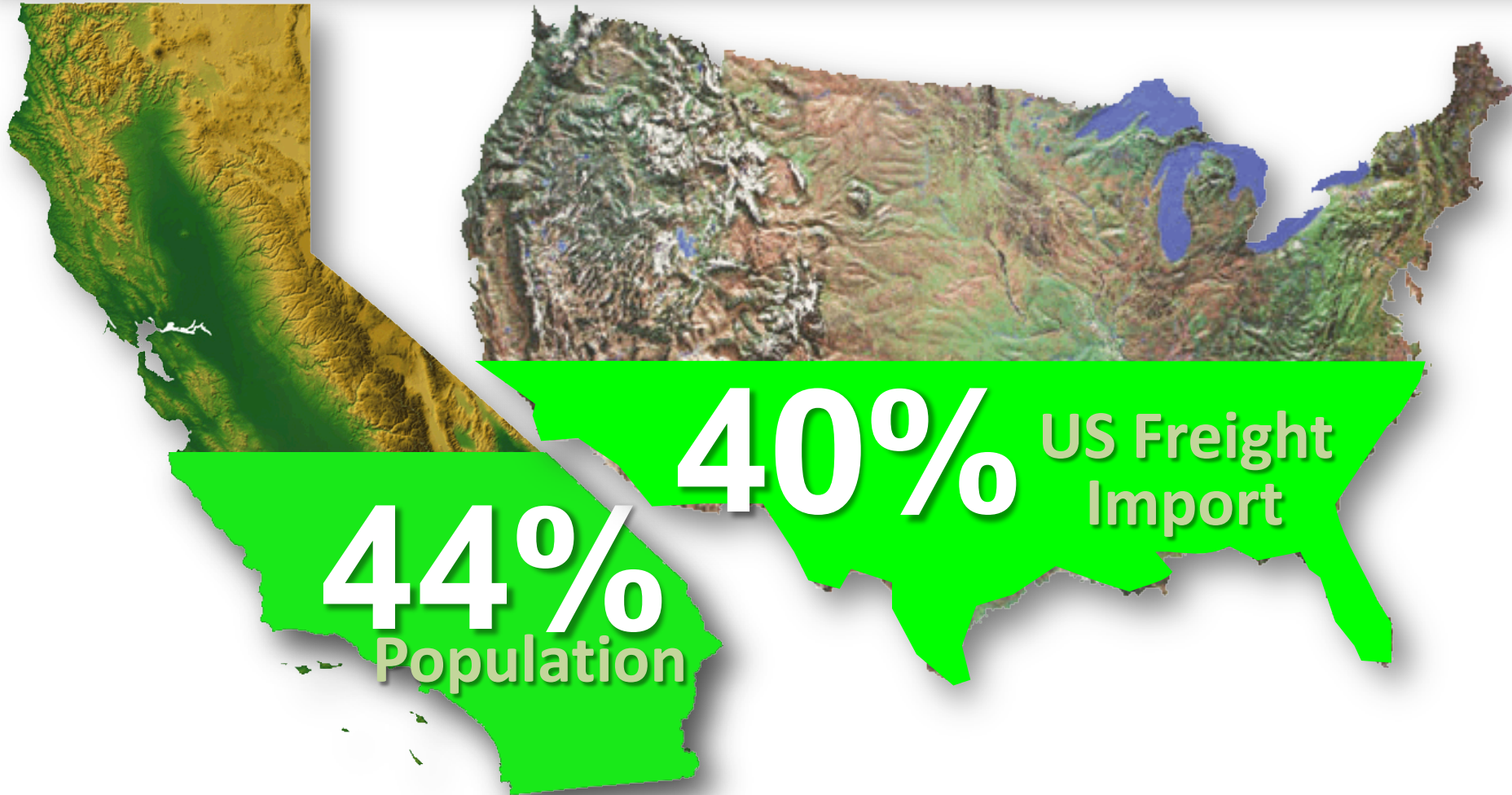
South Coast Air Basin



44%
Population



South Coast Air Basin



South Coast Basin

17 million residents

6th largest cargo gateway

+10 million passenger cars

+1.5 million heavy-duty trucks



History







Zany Los Angeles Now Selling Smog

LOS ANGELES (AP)—In this zany city anything can happen. When it does, somebody usually makes money on it.

There are days, for instance, when you can see men waving empty tin cans in the air. They do this when it's smoggy. After a few swipes at the murky atmosphere, they clap lids on the cans.

You'd swear they were canning smog.

They are.

Once sealed and labeled, the cans are packed for shipment by the Los Angeles Smog Corp.

The firm claims it has two aims—to turn a profit for its founder, a 52-year-old actor named Carleton Young, and to help rid Los Angeles of smog. While it hasn't won any prizes on the second, it seems to be making out on the first.

* * *

HOW can you make money out of smog? Young's idea is to sell the cans as souvenirs of Los Angeles.

"Genuine Los Angeles Smog," proclaim the labels. "This is the smog used by famous Hollywood stars.

"Contains hydrocarbons, nitrogen oxides, sulphur dioxide, organic oxides, aldehydes and

formaldehydes. No pollutants or irritants removed.

"To insure freshness and purity, keep container tightly sealed."

The canned smog is sold at such tourist attractions as Disneyland and the Farmer's Market and at joke shops. Firms holding conventions in Los Angeles are big buyers.

* * *

YOUNG, who has appeared on radio, television and in the movies and served as producer and director as well as actor, says he is more interested in the second of the company's two goals than the first.

In fact, he maintains; it was the burning desire to do something to get rid of smog that put him in business.

"Gad," he recalls choking out one day as he peered with streaming eyes at the smog-draped city. "If only we could pack this stuff up and ship it someplace."

All that remained was to draw up the articles of incorporation.

16 years ago today 1942	April S M T W T F S 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
COLONEL JAMES DOOLITTLE WITH 16 B-25S BOMBED TOKYO FROM THE CARRIER 628 MILES AWAY.	May 1 2 3 4 5 6 7 8 9

Comic DICTIONARY

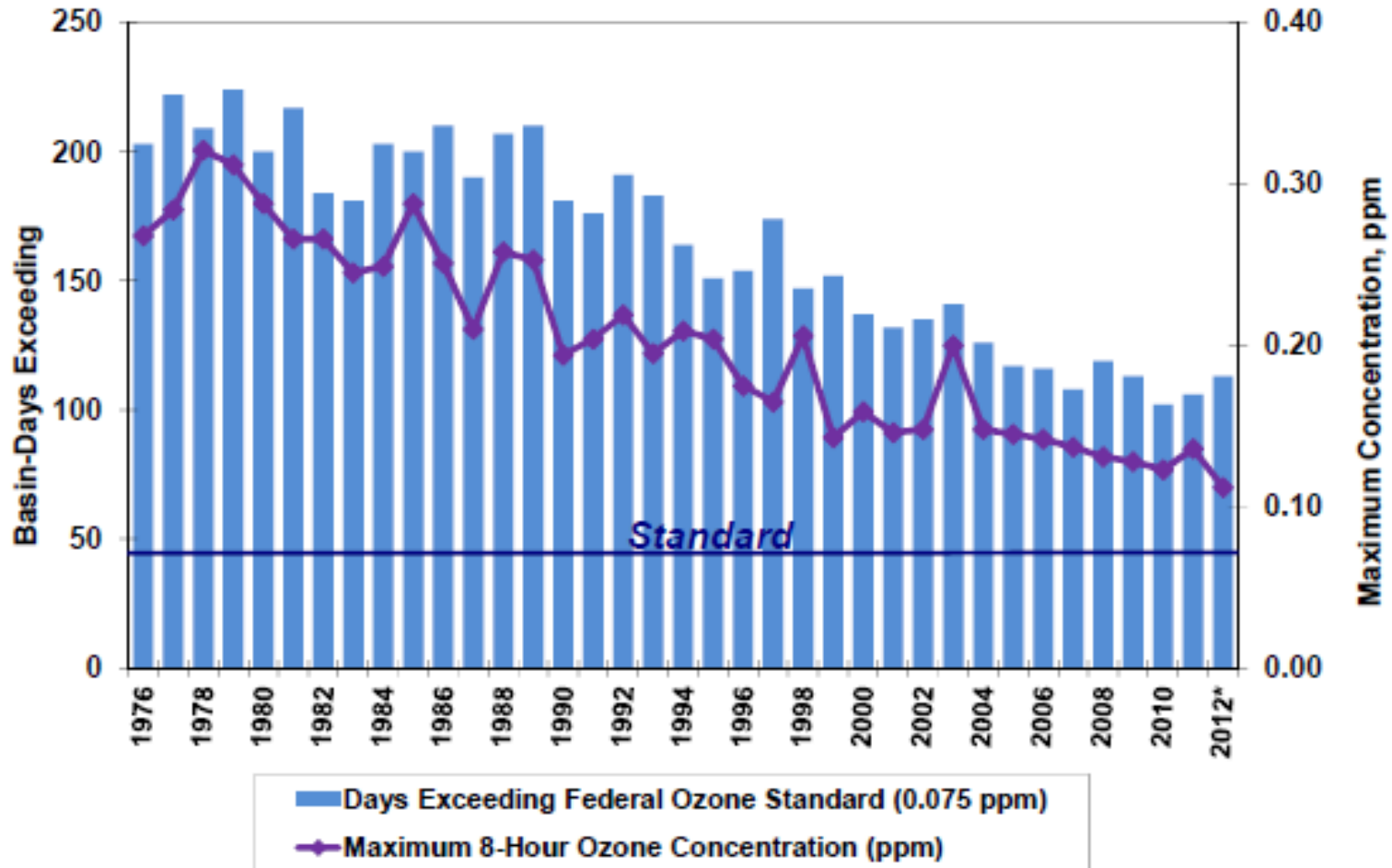
WIFE

A woman who is much more reliable than her husband because you can always depend upon her being late,



Progress

South Coast Air Basin Smog Trend

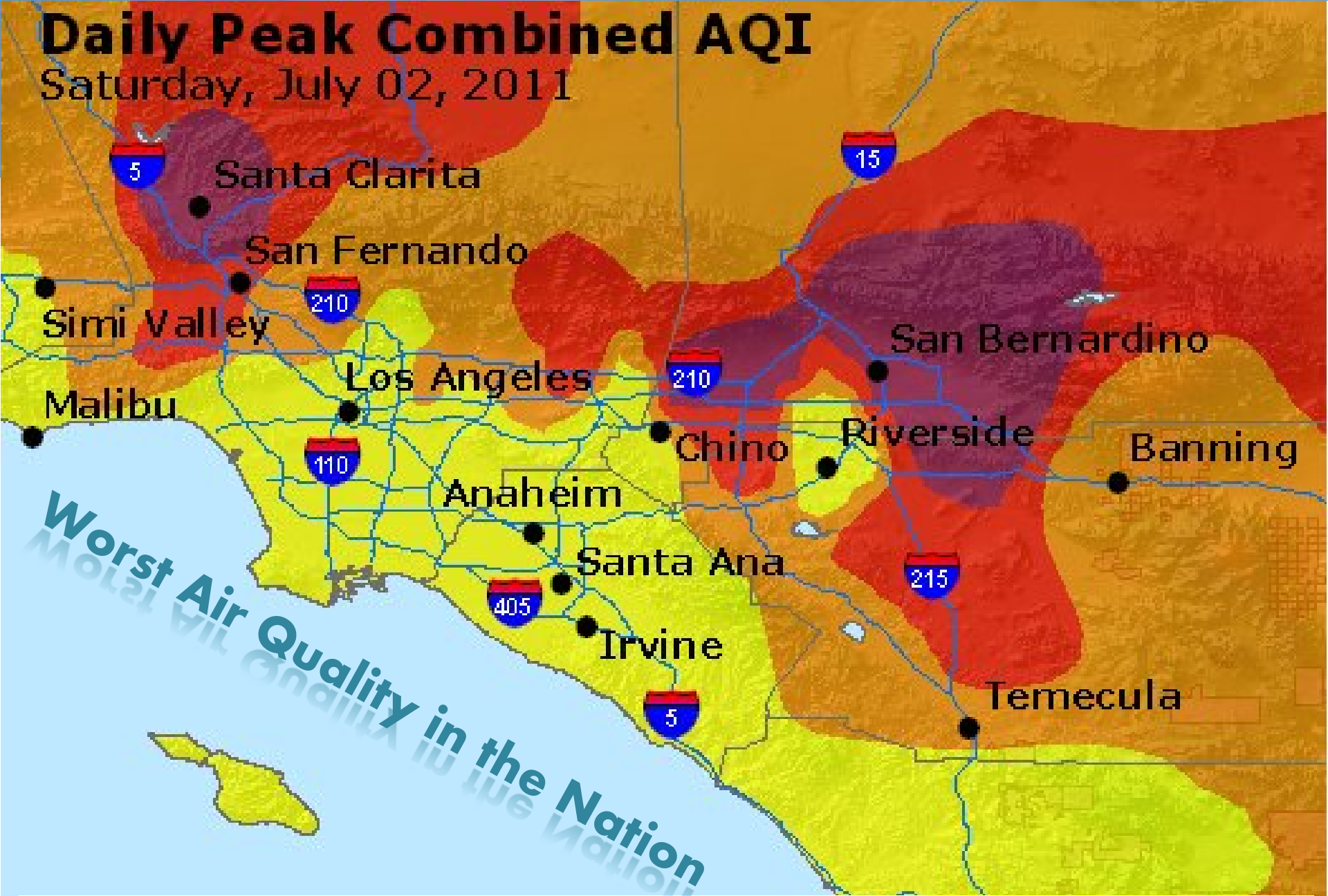


* Based on preliminary data for the year 2012.



Daily Peak Combined AQI

Saturday, July 02, 2011



Worst Air Quality in the Nation

Good

Moderate

USG

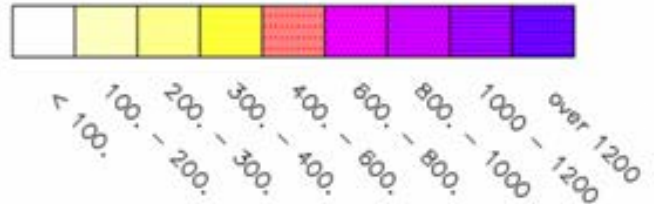
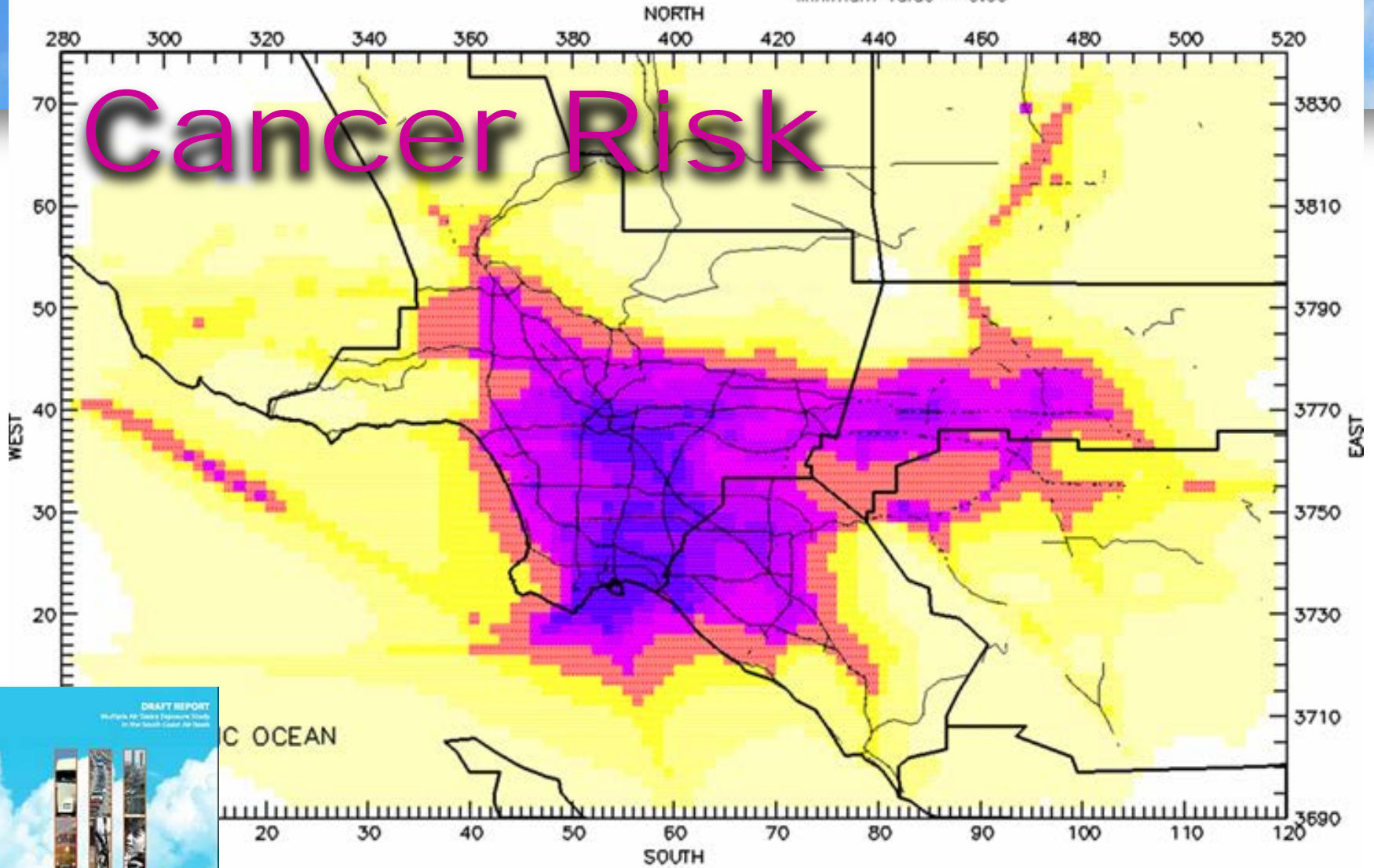
Unhealthy

Very Unhealthy

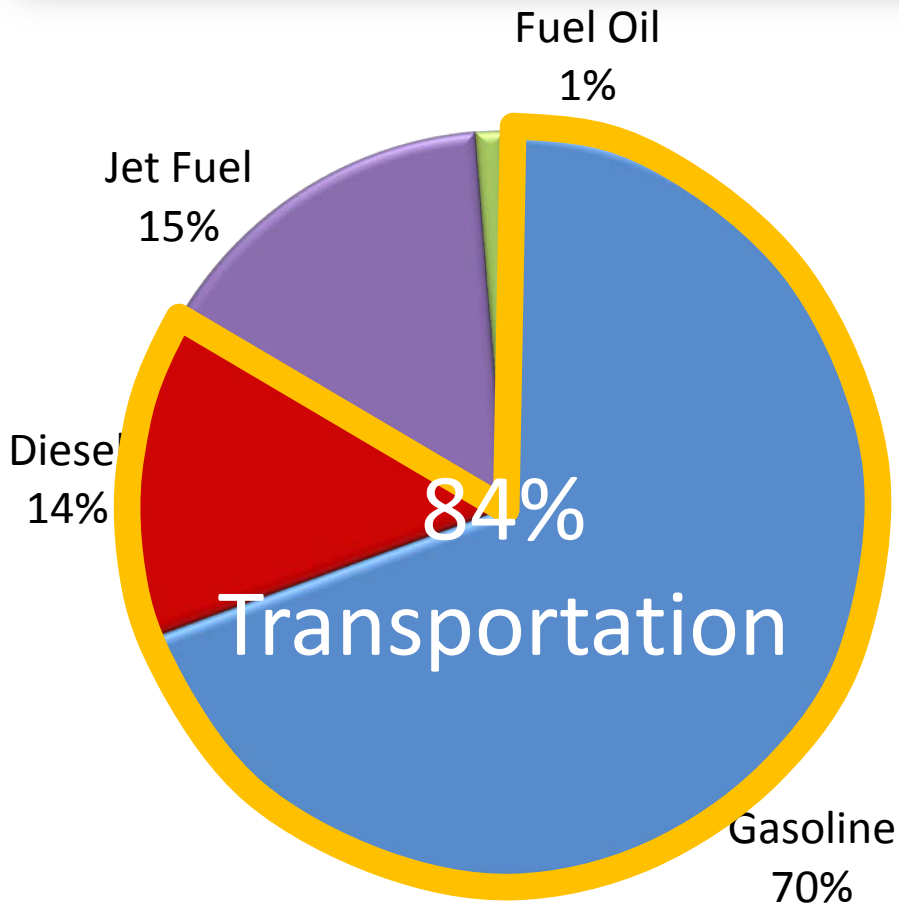
Hazardous

Maximum Value = 2878.97

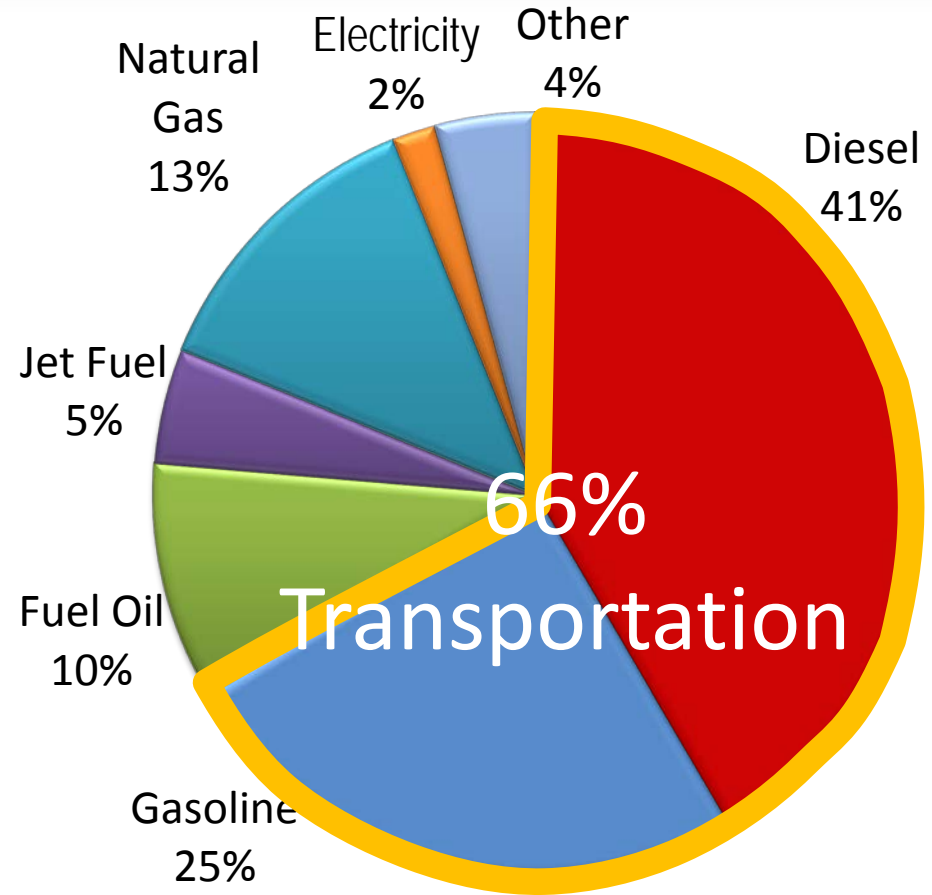
Minimum Value = 0.00



Transportation Fuels and NOx Emissions



Fuel Consumption



NOx Emissions




The Relationship



**Energy
Use**

Air Quality

Health



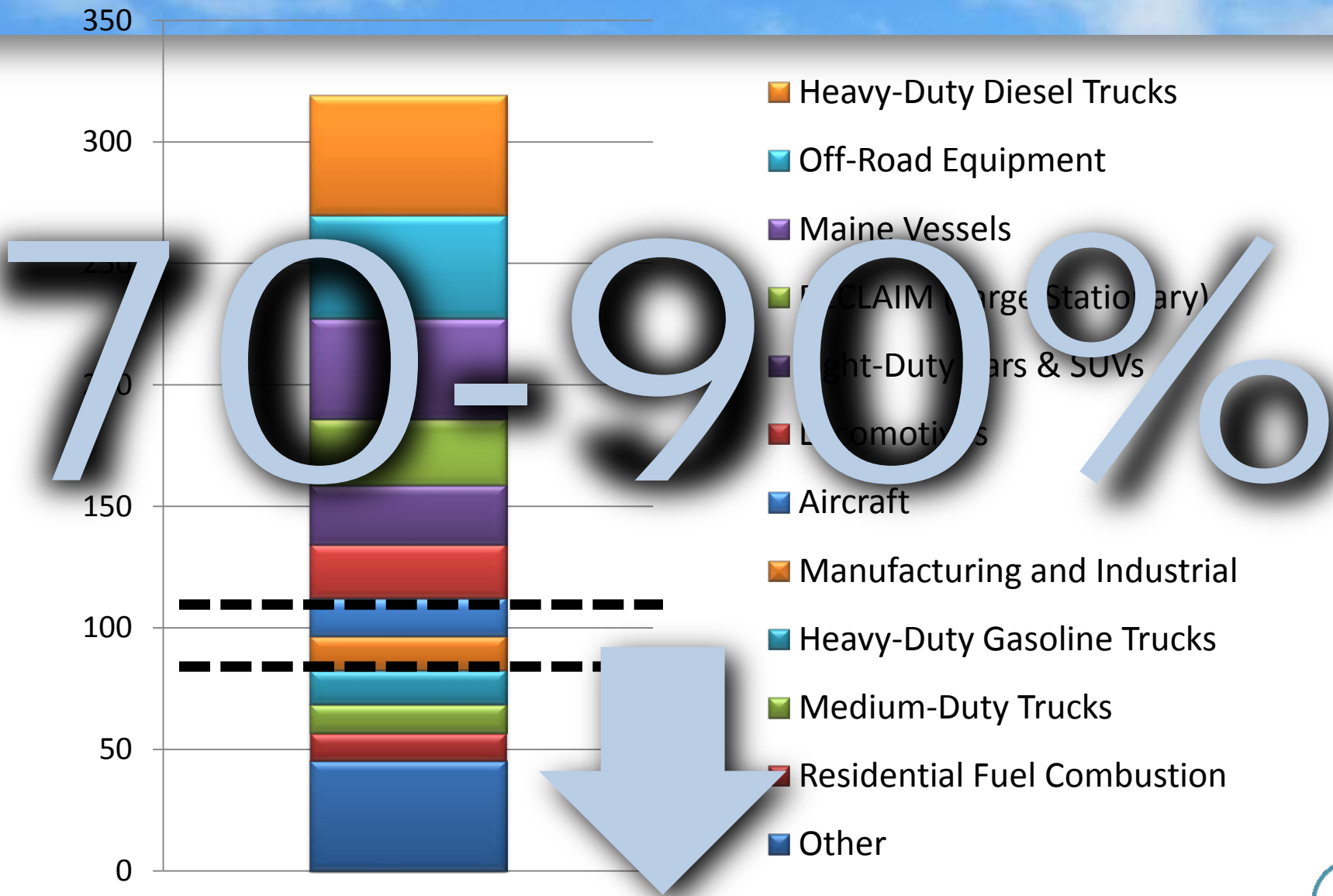
+5,000 deaths
year

Additional costs include

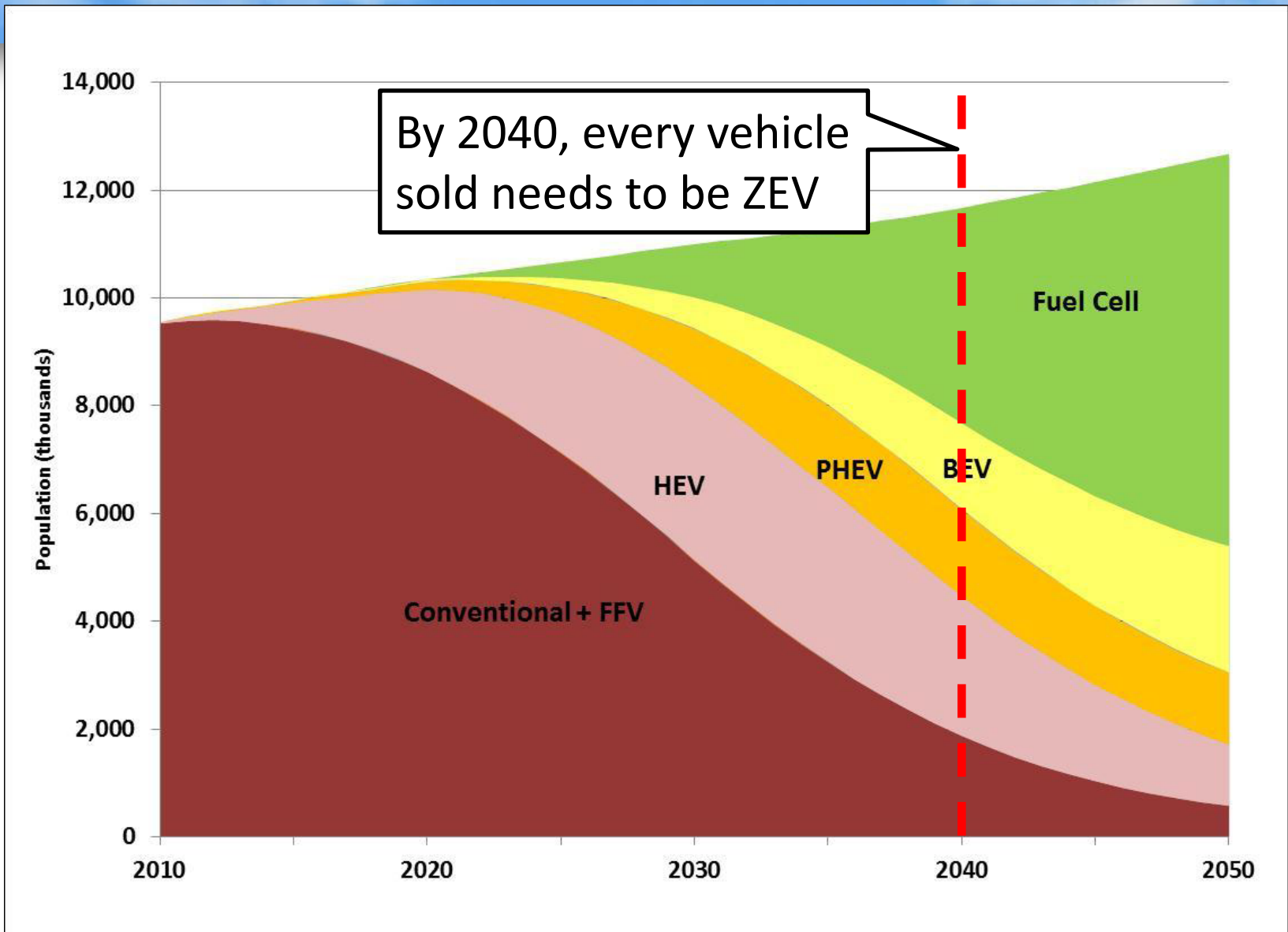
- Hospitalizations
- Cases respiratory illness
- School absences
- Lost workdays

\$ BILLIONS

Top NOx Sources in the Region



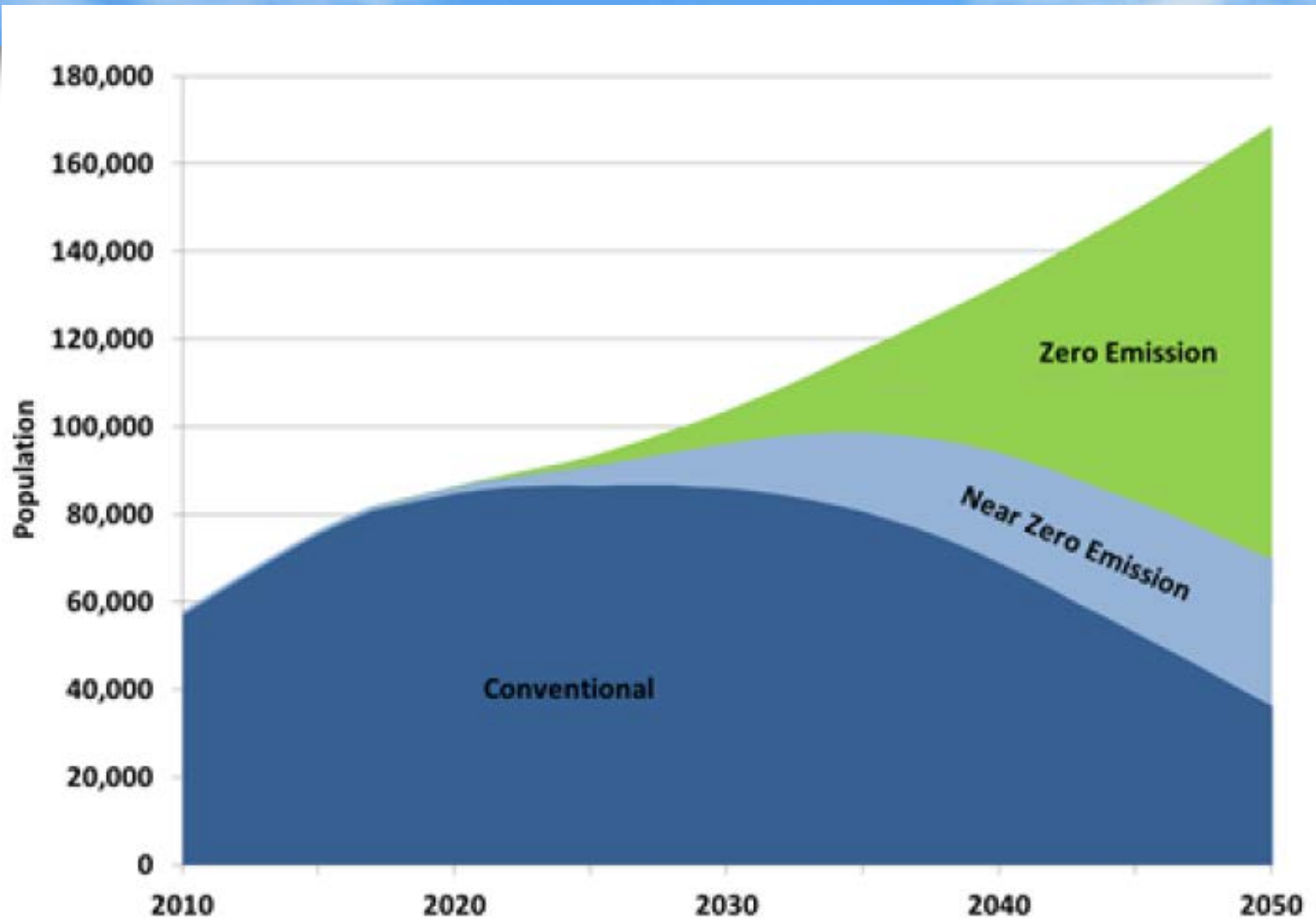
Vision for Clean Air Light-Duty Scenario



Vision for Clean Air, Figure 11 (June 27, 2012)



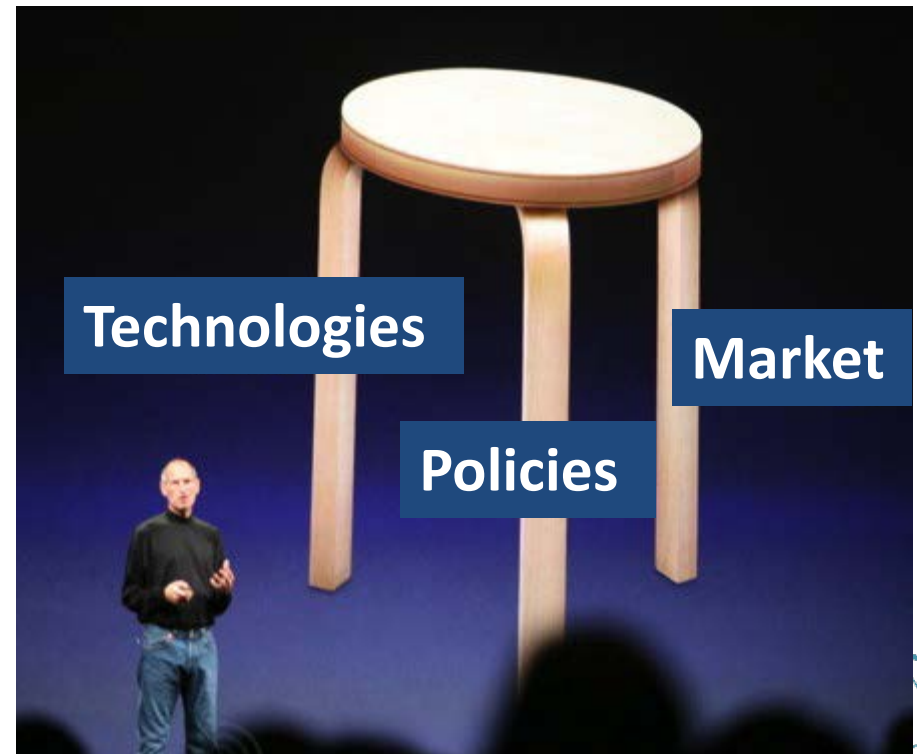
Vision for Clean Air Heavy-Duty Scenario





Transforming Transportation

- Technologies
- Policies: Regulations and Incentives
- Market dynamics



Cause for Optimism

- Light-duty vehicle market
- Medium-duty vehicle market
- Heavy-duty vehicles



Plug-in Electric Vehicles Available Now

Chevy Volt



Ford Focus Electric



Nissan Leaf

Mitsubishi iMiEV



Toyota RAV4-EV

Toyota Plug-in Prius



Tesla Model S



Smart EV



Honda Fit EV



BMW Active-E



Ford Fusion Energi



Lessons Learned

- Zero Emission Vehicle Regulation – requires automakers provide ↑% fleet to be ZEVs
- Clean Vehicle Rebate Project – cash incentive to purchase PHEVs and ZEVs (oversubscribed)



Rebates Issued to Date	
ZEV	12,759
PHEV	11,303
CZEV	49
ZEM	157
NEV	101
Grand Total	24,369

Rebate Funding to Date	
ZEV	\$35,896,988
PHEV	\$16,933,500
CZEV	\$980,000
ZEM	\$167,500
NEV	\$109,750
Grand Total	\$54,087,738

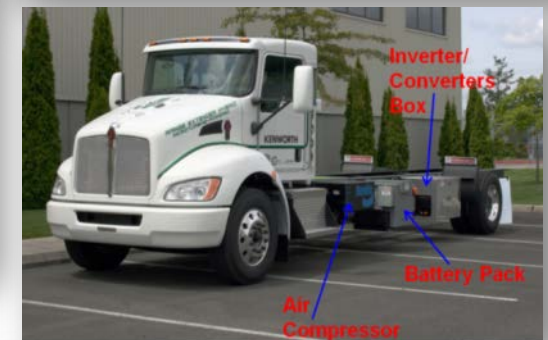
Medium-Duty Electric Trucks Available Now

- Hybrid trucks – 11 OEMs and 134 Models
- UPS
- FedEx
- Frito Lay
- Smith
- EVI



Heavy-Duty Electric Trucks Being Demonstrated

- Class 7-8 trucks
- All electric miles
- Challenges
 - Range
 - Infrastructure
 - Cost



Wayside Power and Hydrogen

- Longer range
- Challenges
 - Infrastructure
 - Cost



Siemens Catenary Truck



Vision Fuel Cell Truck



2012 RTP: Warehouse infrastructure

Lessons Learned

- CARB Truck and Bus Rule
 - Hybrid Voucher Incentive Program
 - Cash buydown
- Port Clean Truck Program
 - Proposition 1B buydown
 - Additional DOE, EPA and CEC funding
- Goods Movement in Regional Transportation Plan, I710 Expansion, Vision exercise, ZEV Action Plan



Local Success Stories

SCAQMD Fleet Rules

- LAMTA – Transit Buses
 - California's largest transit agency (3rd largest in Nation)
 - 100% CNG in January 2011
- School Buses
 - Replaced close to 1,000 pre-1987 school buses with new CNG buses since 2001
 - Largest number of school bus replacements in CA (\$150 million)
- Refuse Haulers
 - 34% alternative fuel
 - Waste Management has largest NG fleet in the nation



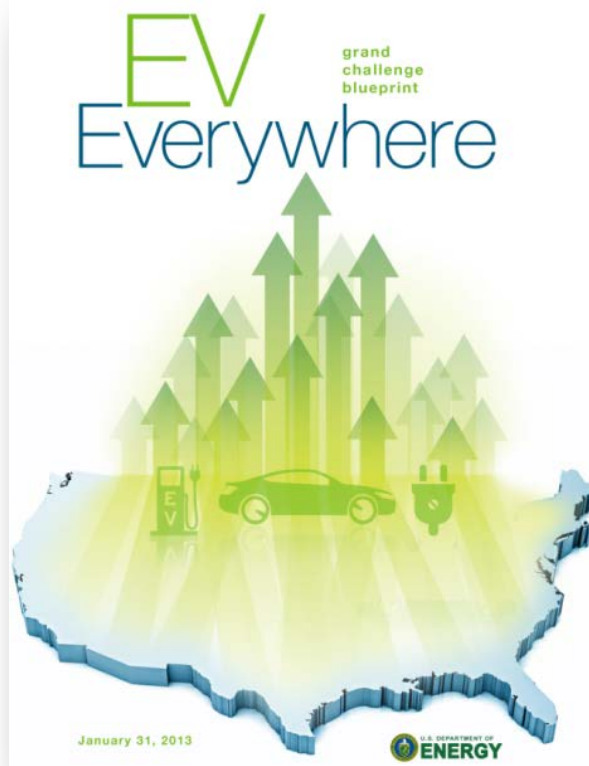
Heavy-duty Natural Gas Applications

- Economics driving turnover to NG
- Domestic fuel supply
- Develop power-plant equivalent tailpipe emission technologies
 - “Electric Vehicle Equivalent”



What is needed?

- Fostering infrastructure
- Policy and incentive certainty
- Collaboration
- Leadership



2013

ZEV Action Plan

A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025

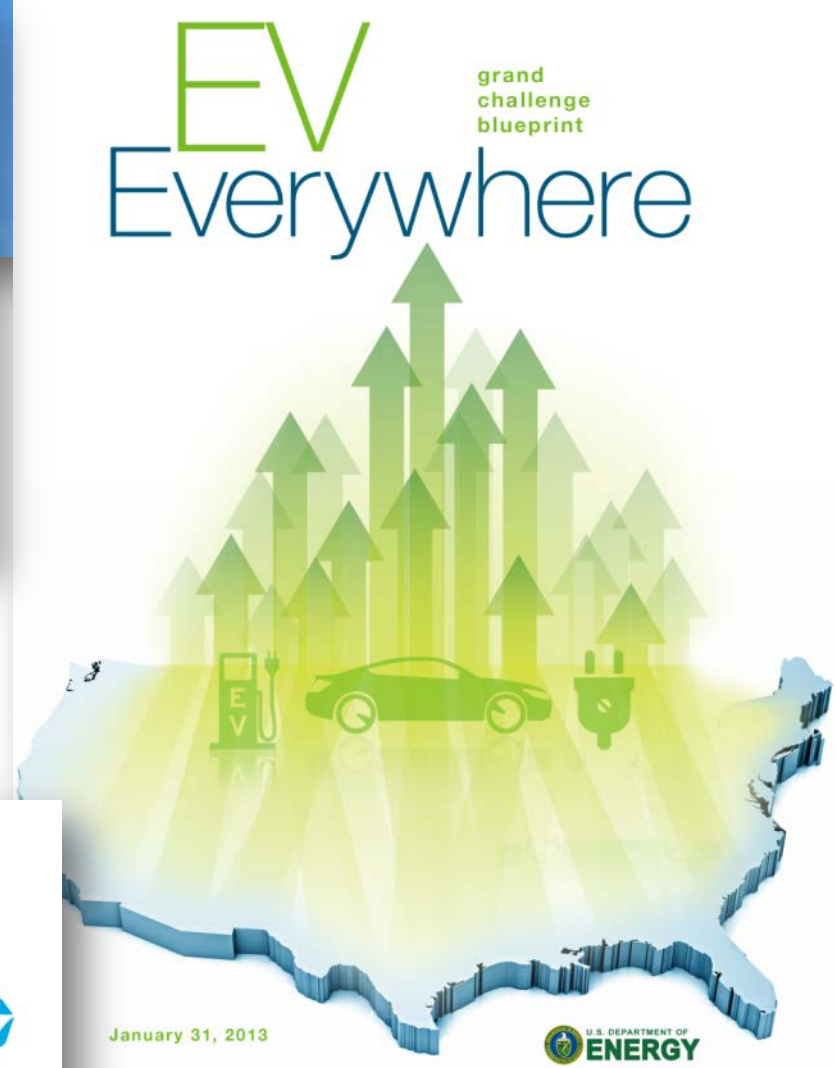


Governor's Interagency Working Group on
Zero-emission Vehicles

Governor Edmund G. Brown Jr.
February 2013



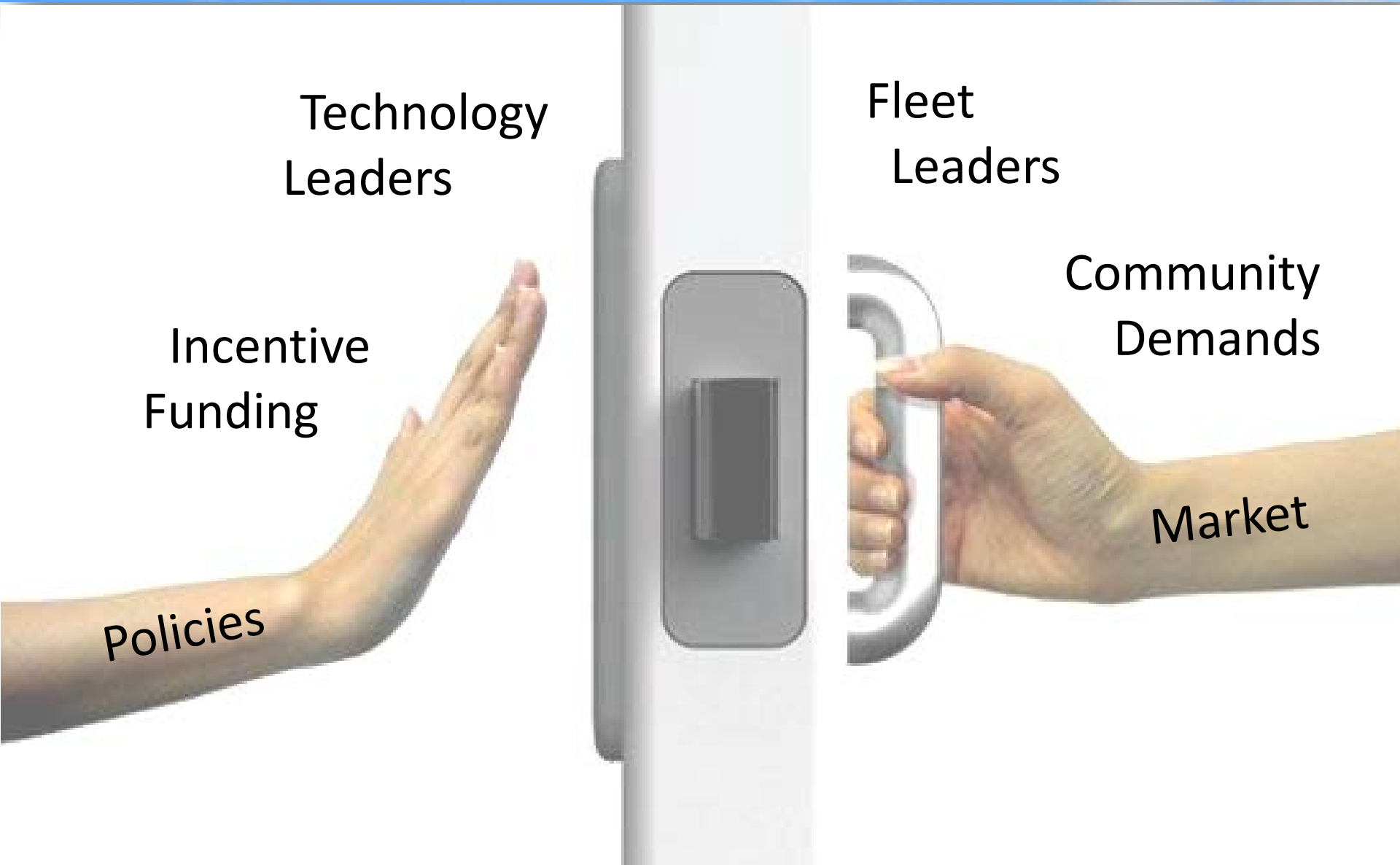
March 2012 Announces EV Everywhere



http://www1.eere.energy.gov/vehiclesandfuels/electric_vehicles/index.html



Push-Pull Mechanisms



Congressional Hearing on Goods Movement

Southern California transportation interests ask Congress to improve freight network

By Andrew Edwards, Staff Writer

Posted: 05/30/2013 07:04:35 PM PDT

THE PRESS-ENTERPRISE



This region should not have to face traffic nightmares and health hazards so the rest of the country can enjoy good prices on consumer items.

Transportation interests asked a special congressional panel, comprised of members of the House Transportation and Infrastructure Committee, to support a new funding source to improve the movement of freight through Southern California and the rest of the United States. (Staff photo)

SAN BERNARDINO -- Transportation interests asked a special congressional panel to support a new funding source to improve the movement of freight through Southern California and the rest of the United States.



Takeaways

- Needs are real – Extreme non-attainment and health consequences
- Regulatory and incentive framework established California
- California entryway to rest of nation
- Technologies are developing – need nurturing and market pull
- Collaborative national efforts can accelerate deployment



Thank You



South Coast
Air Quality Management District

Cleaning the air that we breathe...



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