

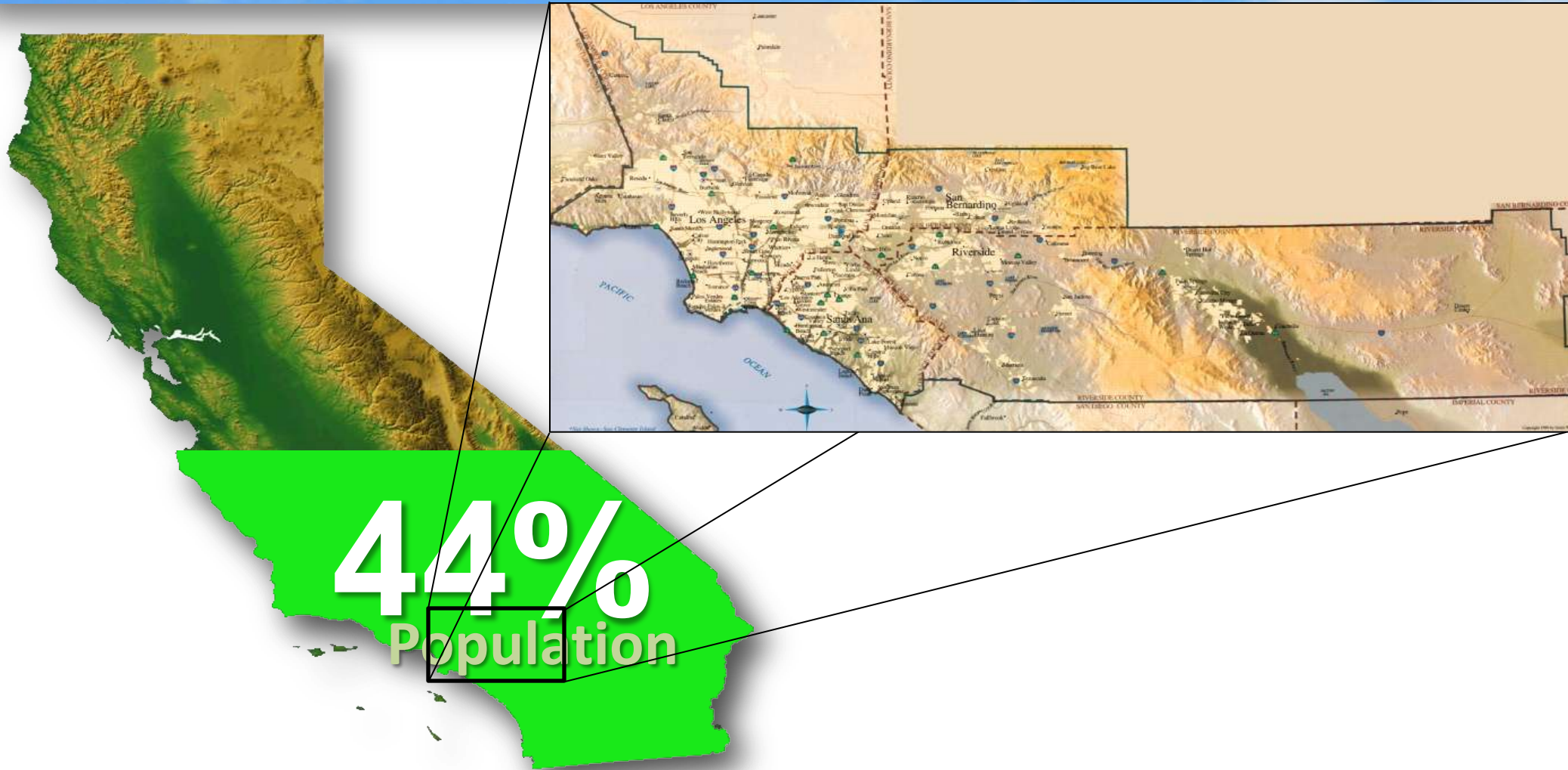
Technology Advancement Office



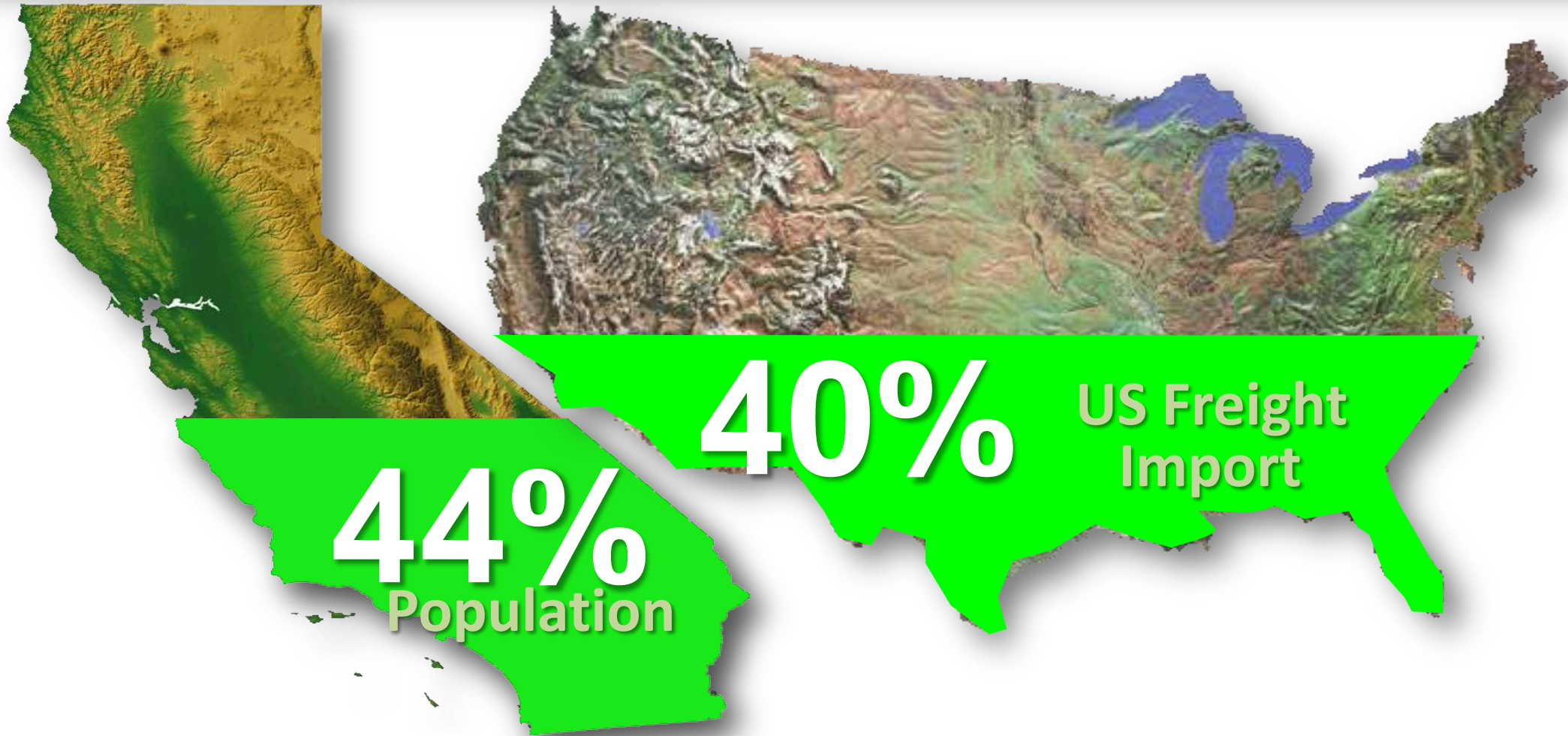
Clean Fuels Program

2014 Annual Report

South Coast Air Basin



South Coast Air Basin



Hourly AQI (Combined PM_{2.5} and O₃)

Friday, May 16, 2014 8:00 AM PDT



Good

Moderate

USG

Unhealthy

Very Unhealthy

Hazardous

Daily Combined AQI

Saturday, May 17, 2014



Worst Air Quality in the Nation

Good

Moderate

USG

Unhealthy

Very Unhealthy

Hazardous

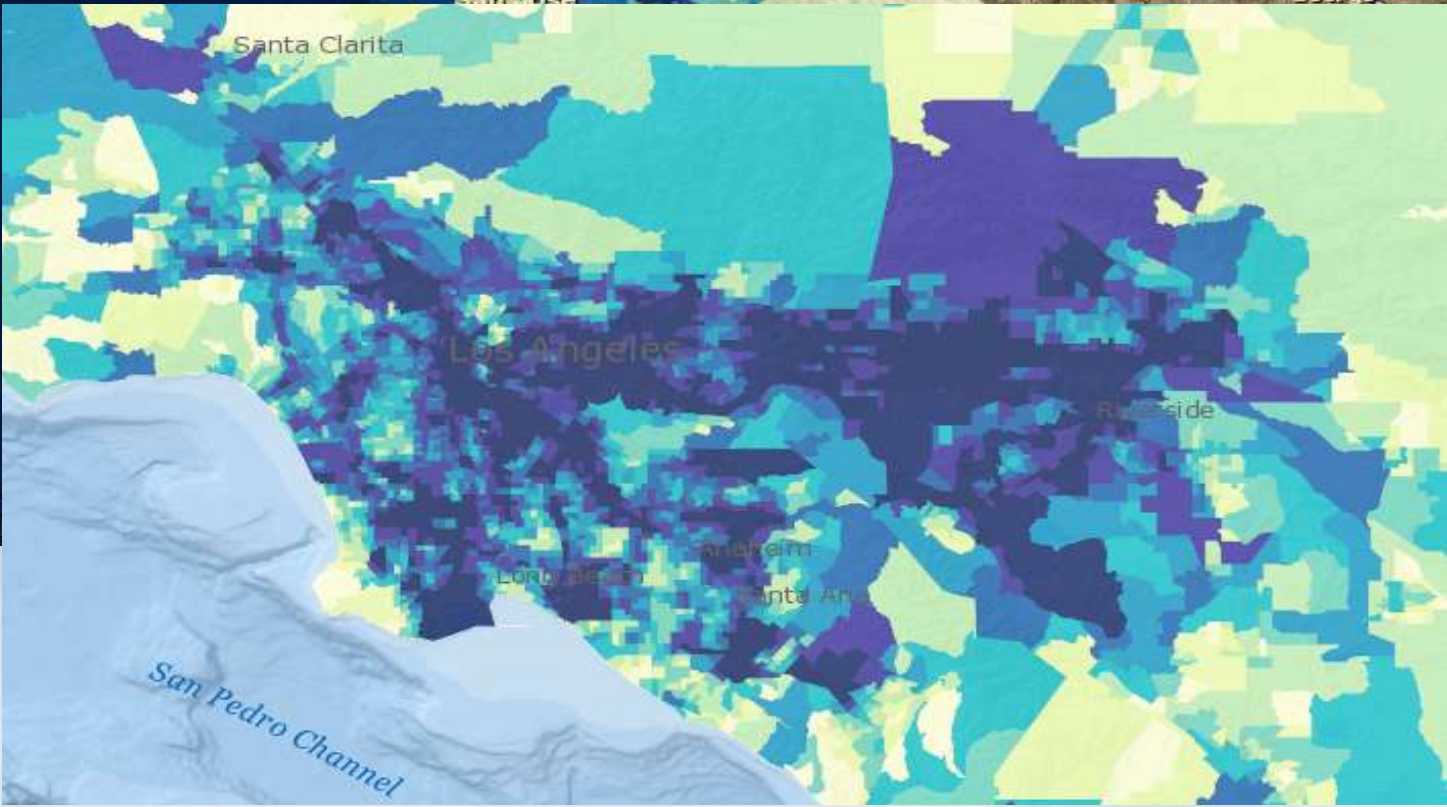


Legend

CalEnviroScreen Pollution Burden Scores

CalEnviroScreen Pollution Burden scores

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Highest Pollution Burden scores)



New research shows how air pollution can make you bad at math

BY **CHRISTOPHER INGRAHAM**  March 10

In 2011 researchers at UC San Diego [demonstrated](#) a link between air pollution and lower IQs in agricultural workers. Now those findings have been replicated in a study of children in Krakow, Poland.

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News & Features

Topics

Energy & Sustainability :: News :: July 26, 2010

Urban Air Pollution Linked to Lower IQs before Baby's First Breath

A study in Krakow, Poland, corroborates New York City findings that link children's lower IQ scores with mothers' exposure to compounds created by burning fossil fuels.

By Marla Cone, Emily Elert and Environmental Health News

Air pollution lowers sperm quality

BY **CHRISTOPHER DOYLE**

ABC Environment | 25 FEB 2014

 **Comments**

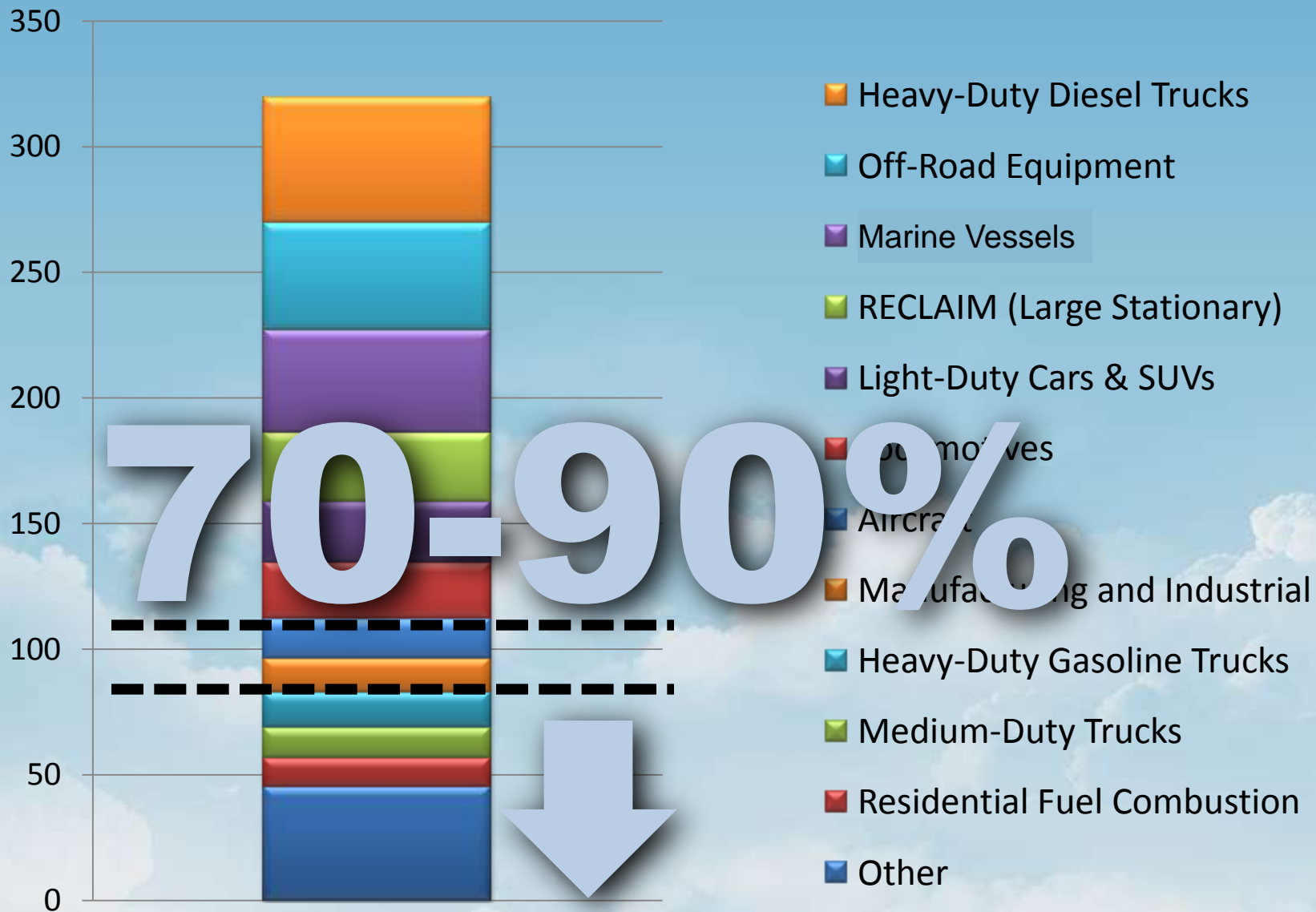
A study from China found that men living in polluted cities had lower fertility than their country cousins.

MEN, TAKE HEED: living in the city could be harming your fertility.

That is the finding of a recent [study](#) published in the journal *Environmental Pollution*, which analysed semen samples from more than 1,300 men in China.



Top NOx Sources in the Region



U.S. EPA: We need tougher ozone standards

By Gina McCarthy, U.S. EPA Administrator @CNNMoney November 26, 2014: 6:00 AM ET

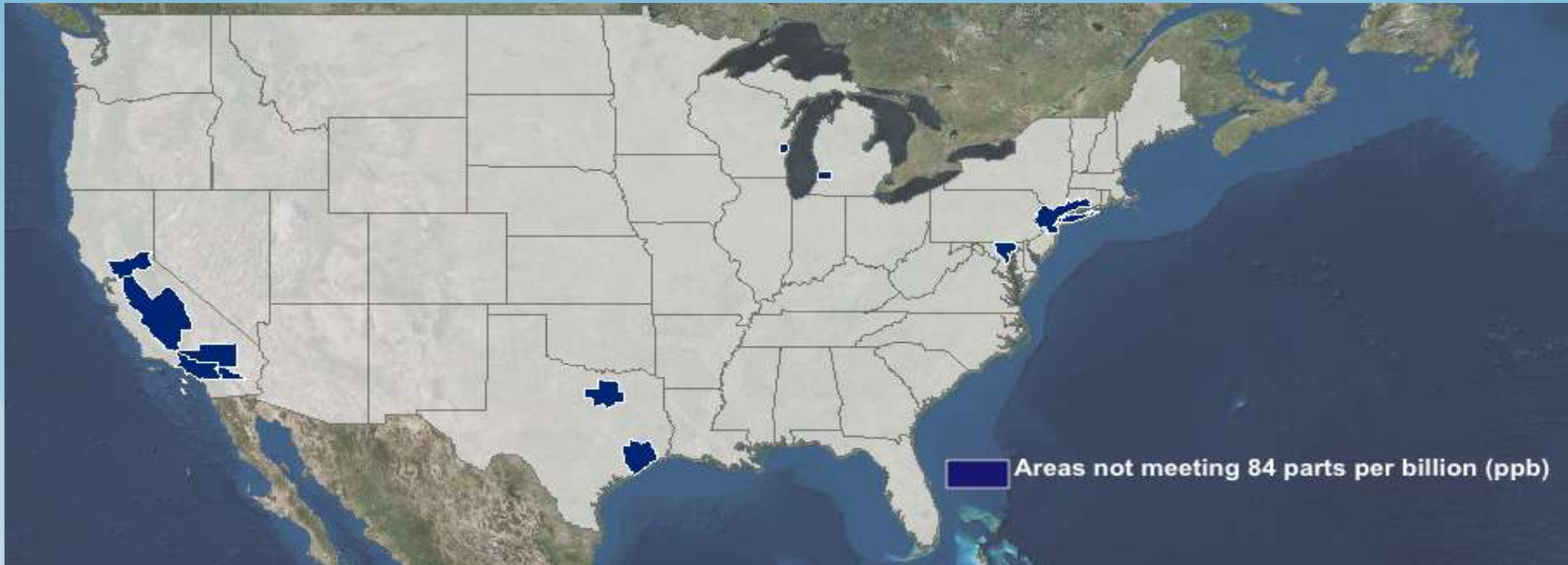
 Recommend 25k



PHOTO: SHUTTERSTOCK

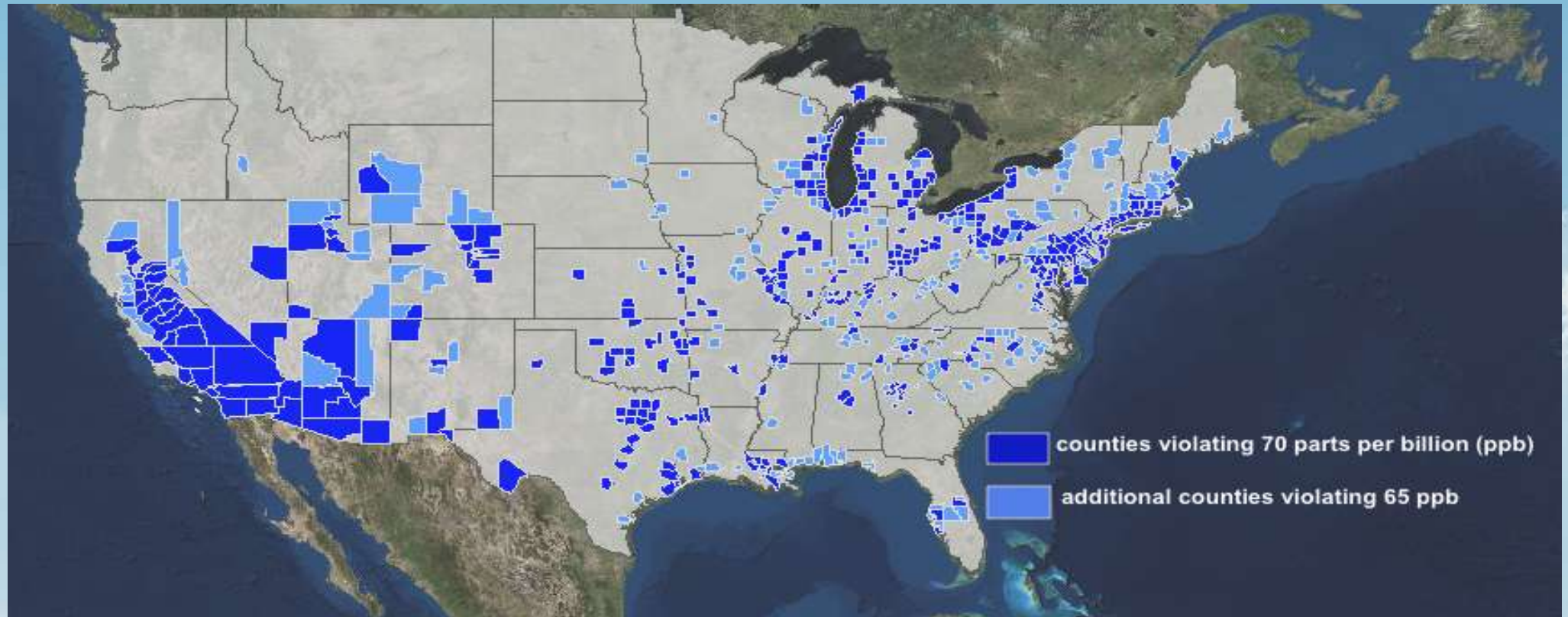
The U.S. EPA proposes tightening the current ozone pollution standard of 75 parts per billion to a standard in the range of 65-70 parts per billion.

8-Hour Ozone Nonattainment Areas



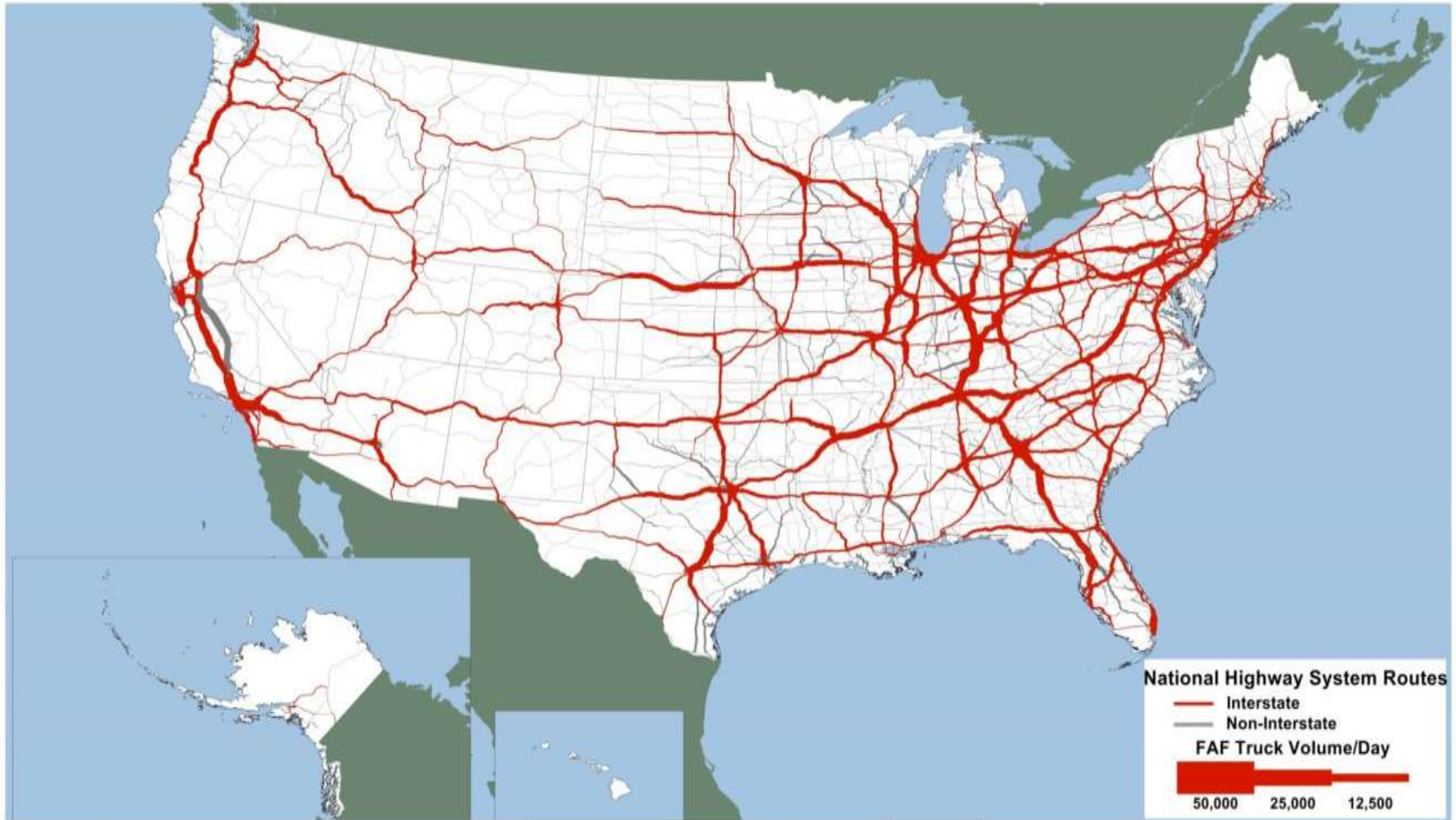
<http://www.epa.gov/glo/maps.html>

Projected Nonattainment Areas



<http://www.epa.gov/glo/maps.html>

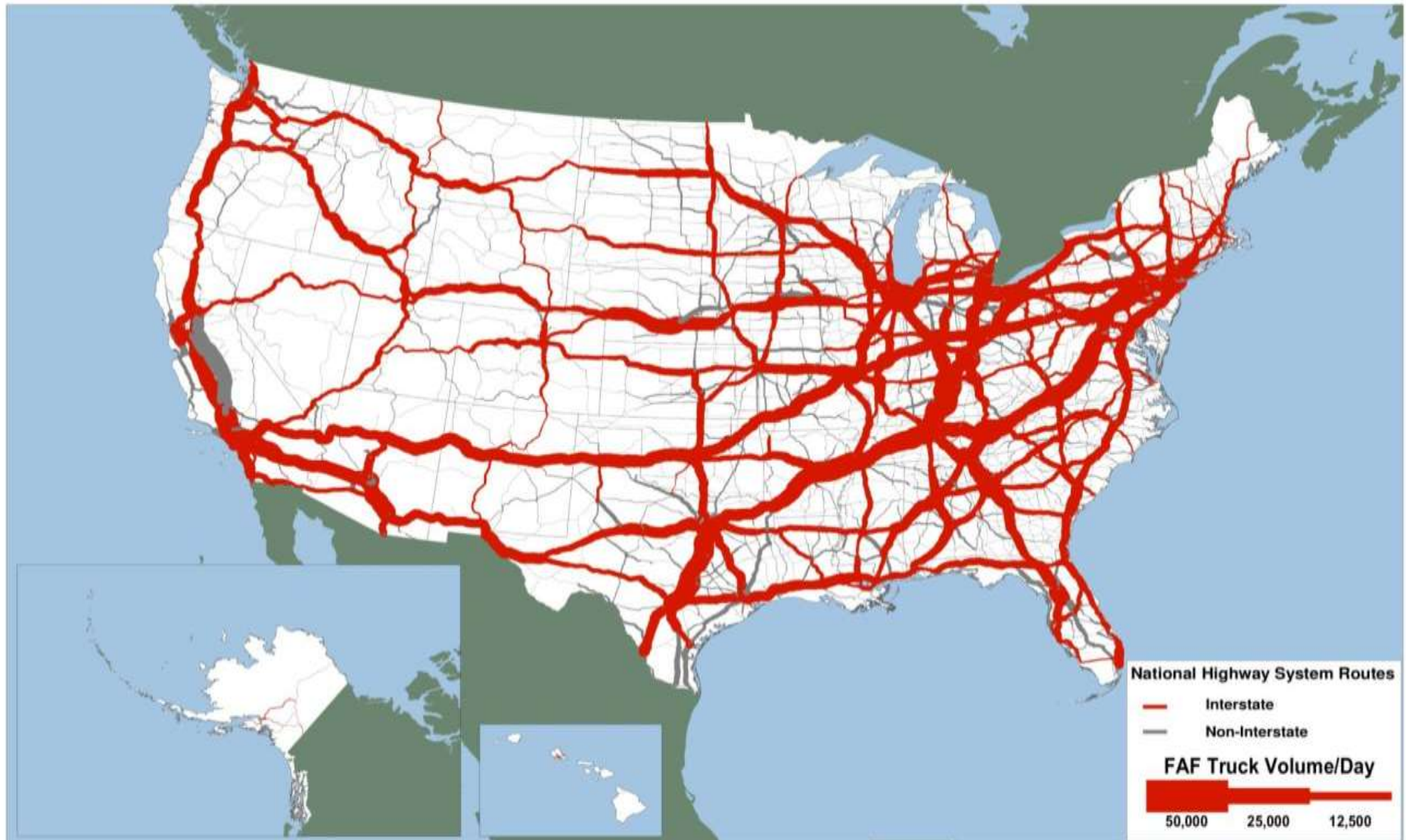
Average Daily Long-Haul Freight Truck Traffic on the National Highway System: 2007



Note: Long-haul freight trucks typically serve locations at least 50 miles apart, excluding trucks that are used in movements by multiple modes and mail.

Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Average Daily Long-Haul Freight Truck Traffic on the National Highway System: 2040



Note: Long-haul freight trucks typically serve locations at least 50 miles apart, excluding trucks that are used in movements by multiple modes and mail.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.



*California –
Coming to
Neighborhood Near
You!*

Background

- Approve Progress Report on Clean Fuels Program Activities for Past Year (HSC 40448.5.1)
- Adopt Technology Advancement Plan (Update) for the Current Year (HSC 40448.5)
- Draft 2015 Plan Update submitted to Board December 5, 2014
- Annual Public Hearing to Adopt Final Plan Update
- Submit Reports to Legislature by March 31, 2015

Input Process

- Advisory group meetings
 - February and August 2014
 - Technology Advancement Advisory Group
 - Clean Fuels Advisory Group
 - Invited technical experts
- Individual meetings with agencies, industry groups technology providers and other stakeholders

2014 Annual Report Core Technologies

- Electric/Hybrid Technologies & Infra.
- Engine Systems (ultra-low emission NG HDVs)
- Hydrogen & Fuel Cell Tech. & Infra.
- Fueling Infrastructure & Deployment (NG)
- Health Impacts
- Emission Control Technologies
- Fuels & Emissions Studies



CY 2014 Accomplishments

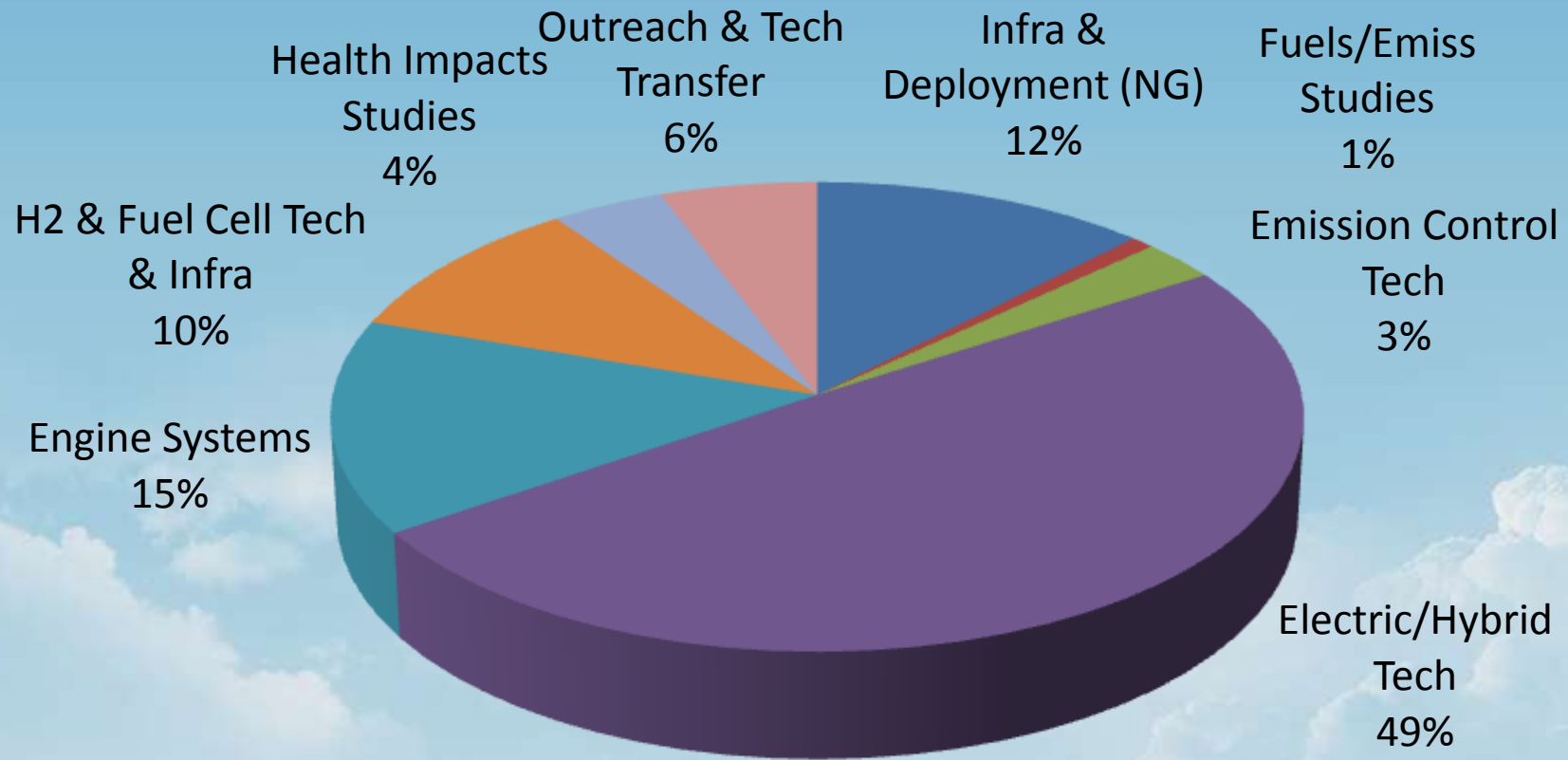
- 70 Contracts Executed
 - \$14 Million from Clean Fuels Fund
 - \$65.5 Million – Total Project Costs
 - 1:5 Leveraging
- Completed Projects
 - 40 RD³ Projects
 - 6 Technology Assessment and Transfer Projects

2014 State & Federal Awards

Total = \$19.8M

AWARDING ENTITY	AWARD AMOUNT	PROJECT
CEC	\$0.9M	DC Fast Charging Network in SCAB
USDOE	\$9.7M	Zero Emission FC Range Extended Electric/Hybrid Electric Drayage Trucks
CEC	\$2.4M	
LADWP	\$1.0M	
Ports/SoCalGas	\$1.4M	
CARB/BAR	\$1.4M	Retire/Replace Old Vehicles in EFMP
USEPA	\$0.5M	Demo Elec Yard Tractors & Test Air Filtrations in School Buses
CEC	\$0.3M	Support H2 Readiness in Early Markets
POLB	\$2.1M	Demo Barge-Mounted Emission Controls
USEPA	\$0.2M	Convert Diesel School Buses to Electric w/V2G

2014 Contracts



\$14 million SCAQMD; \$65.5 million Total

2014 Project Highlights

- Demo Catenary Zero Emissions Goods Movement System
- Develop Plug-In Hybrid Electric Retrofit System
- Develop Ultra-Low Emission NG Engines for On-Road HD Vehicles
- Cost-Share Construction of 8 H2 Stations in Partnership w/CEC
- Construct 3 LNG Stations in Inland Empire