

# Urban Freight and Public Health

## Research Transportation Board Executive Committee Meeting

June 11, 2015

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President & CEO, Coalition for Clean Air  
Governor's Appointee, South Coast Air Quality  
Management District Governing Board

*ccair.org · aqmd.gov · @joe\_lyou*

Here's  
the  
problem . . .

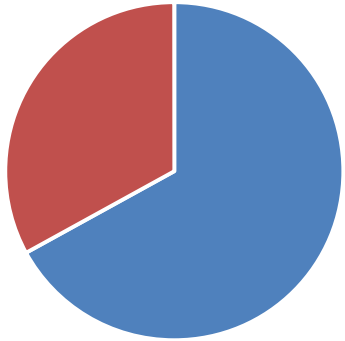




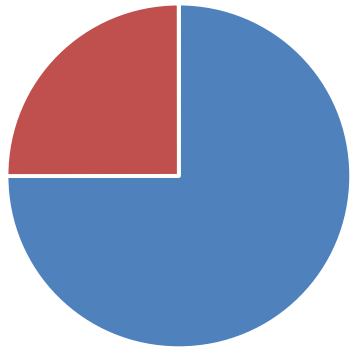
LOS ANGELES  
**LAKERS**

GOLDEN STATE  
**WARRIORS**

# L.A. Area Needs

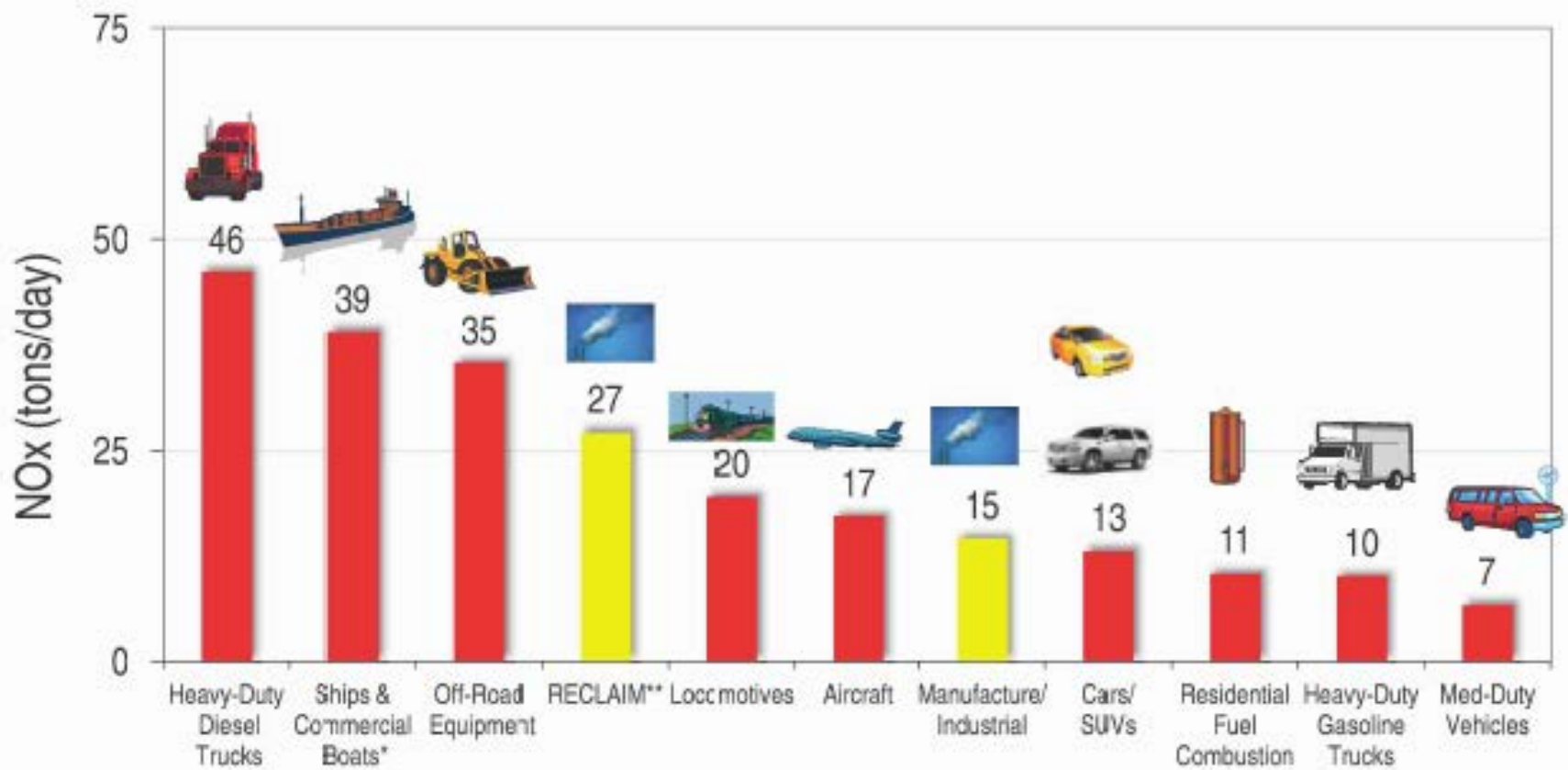


2/3 NOx emission reductions by 2023



3/4 NOx emission reductions by 2032

# Top NOx Emissions Sources in 2032



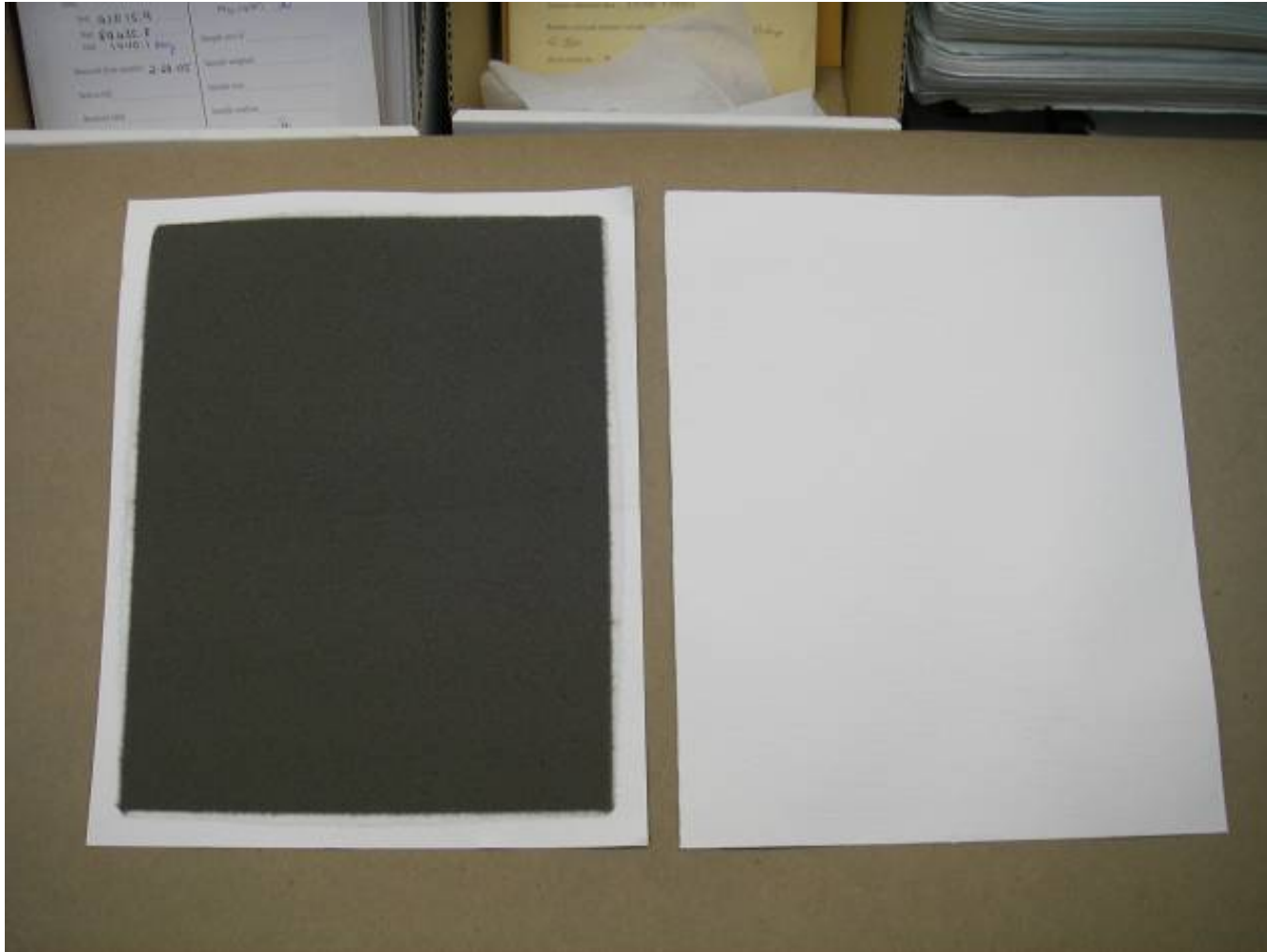
\* Ocean-going vessels = 29 tons/day

\*\*RECLAIM: 320 largest stationary sources, including all refineries and power plants



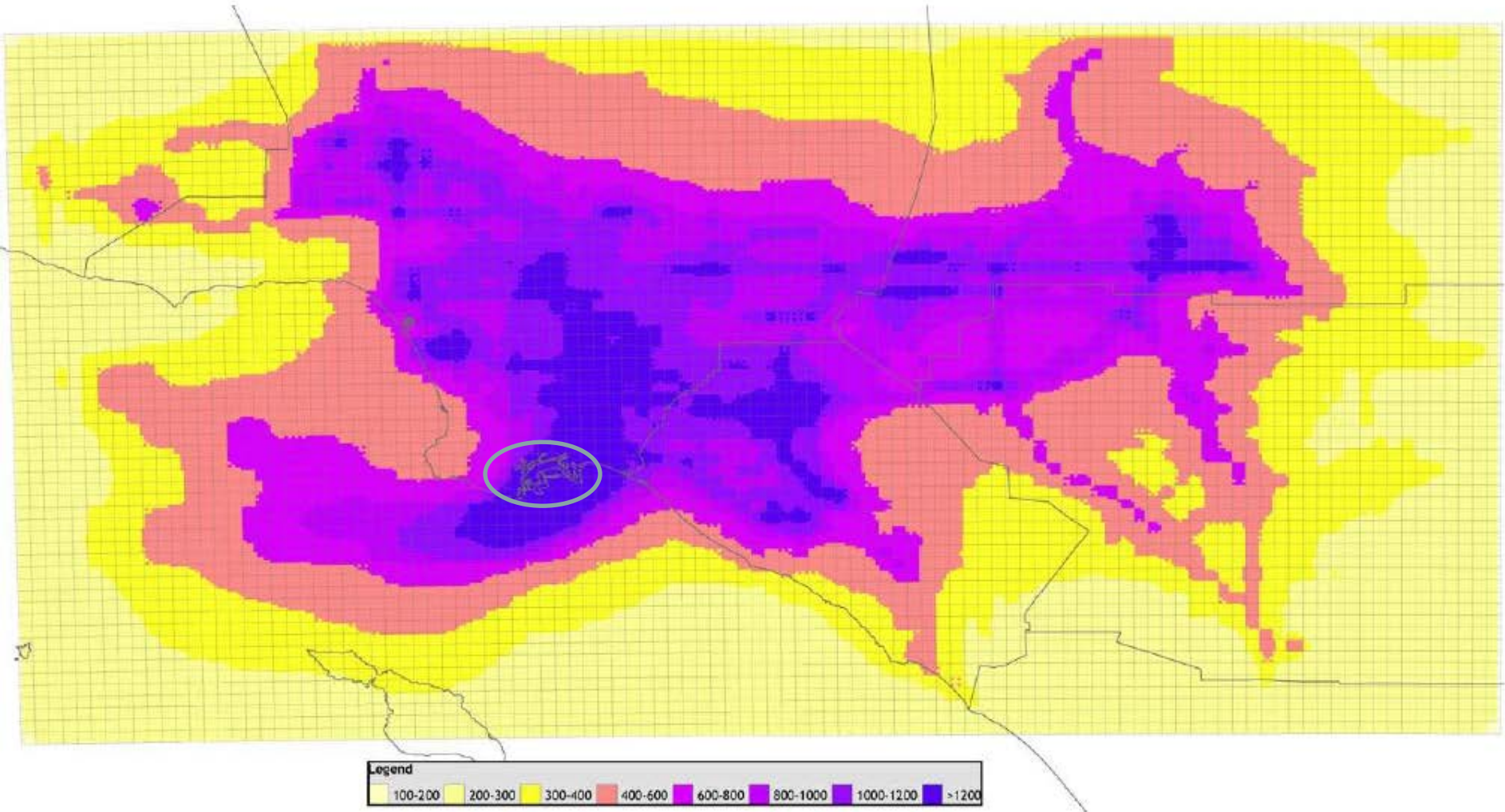
Public health  
drivers of  
goods  
movement  
air quality  
regulations.

# Port Pollution



Left: Typical pre-Clean Trucks Program non-rainy wintertime day PM10 sample, Long Beach  
Right: Blank filter

# MATES II Model Estimated Risk





“The Californians who live near ports, rail yards, and along high traffic corridors, are subsidizing the goods movement sector with their health.”

California Air Resources Board  
Draft Emission Reduction Plan for Ports and International Goods Movement

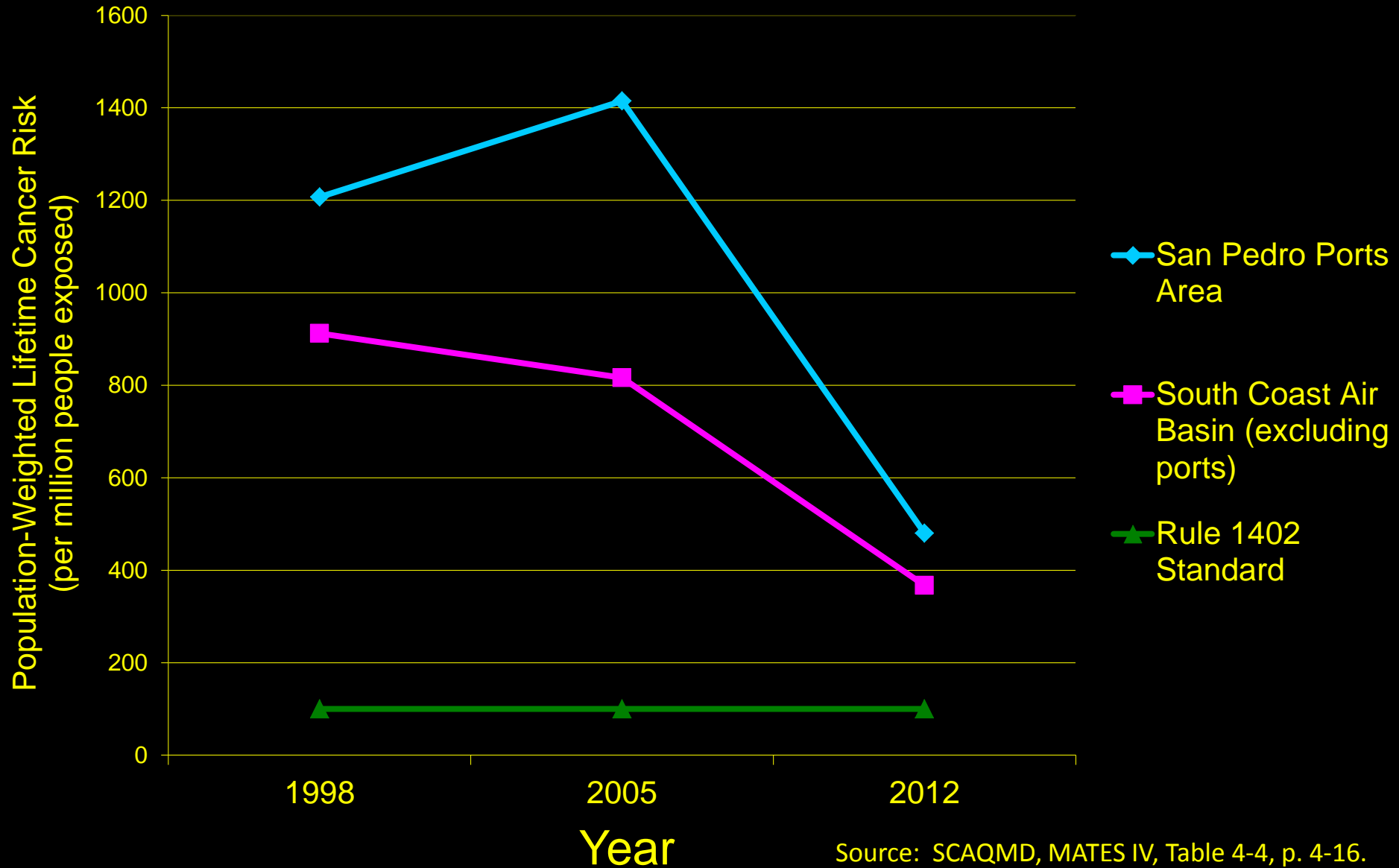
**Table I-1  
Statewide  
Annual 2005 PM and Ozone Health Effects  
Associated with Ports and Goods Movement in California<sup>1</sup>**

<b>Health Outcome</b>	<b>Cases per Year</b>	<b>Uncertainty Range<sup>2</sup> (Cases per Year)</b>	<b>Valuation (millions)</b>	<b>Uncertainty Range<sup>3</sup> (millions)</b>
Premature Death	2,400	720 to 4,100	\$19,000	\$5,900 to \$36,000
Hospital Admissions (respiratory causes)	2,000	1,200 to 2,800	\$67	\$40 to \$94
Hospital Admissions (cardiovascular causes)	830	530 to 1,300	\$34	\$22 to \$53
Asthma and Other Lower Respiratory Symptoms	62,000	24,000 to 99,000	\$1.1	\$0.44 to \$1.8
Acute Bronchitis	5,100	-1,200 to 11,000	\$2.2	-\$0.52 to \$4.7
Work Loss Days	360,000	310,000 to 420,000	\$65	\$55 to \$75
Minor Restricted Activity Days	3,900,000	2,200,000 to 5,800,000	\$230	\$130 to \$350
School Absence Days	1,100,000	460,000 to 1,800,000	\$100	\$41 to \$160
<b>TOTAL VALUATION</b>	<b>NA</b>	<b>NA</b>	<b>\$19,000</b>	<b>\$6,000 to \$37,000</b>

It's not all  
bad news.



# Comparison of Trends in Cancer Risk

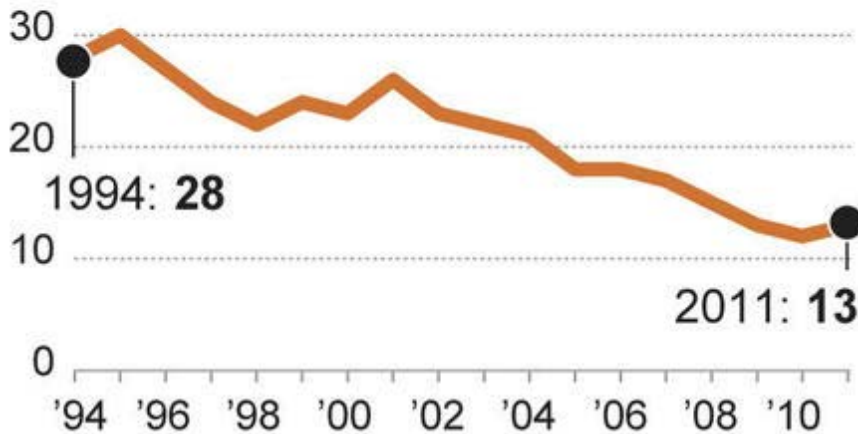


Source: SCAQMD, MATES IV, Table 4-4, p. 4-16.

# Cleaner air, healthier lungs

A study of more than 2,000 children in five Southern California cities found that their lung function improved as air pollution dropped.

**As air pollution\* declined...**



**...the percentage of children with abnormally low lung function dropped.**

**Group 1**

'94-'98

7.9%

**Group 2**

'97-'01

6.3%

**Group 3**

'07-'11

3.6%

\*Scale measures fine particle pollution/PM2.5 (annual average) in micrograms per cubic meter

Sources: Gauderman et al. 2015, New England Journal of Medicine; USC Children's Health Study

@latimesgraphics



## Port pollution cleanup partially credited with fewer child asthma-related hospital visits in Harbor Area



Five-month-old Julian Martinez finishes a breathing treatment for his childhood asthma at the Harbor Community Pediatric Clinic in San Pedro. Brad Graverson — Staff Photographer

### RELATED

More children rushing to ERs for asthma despite programs to

By **Donna Littlejohn**, *Daily Breeze*

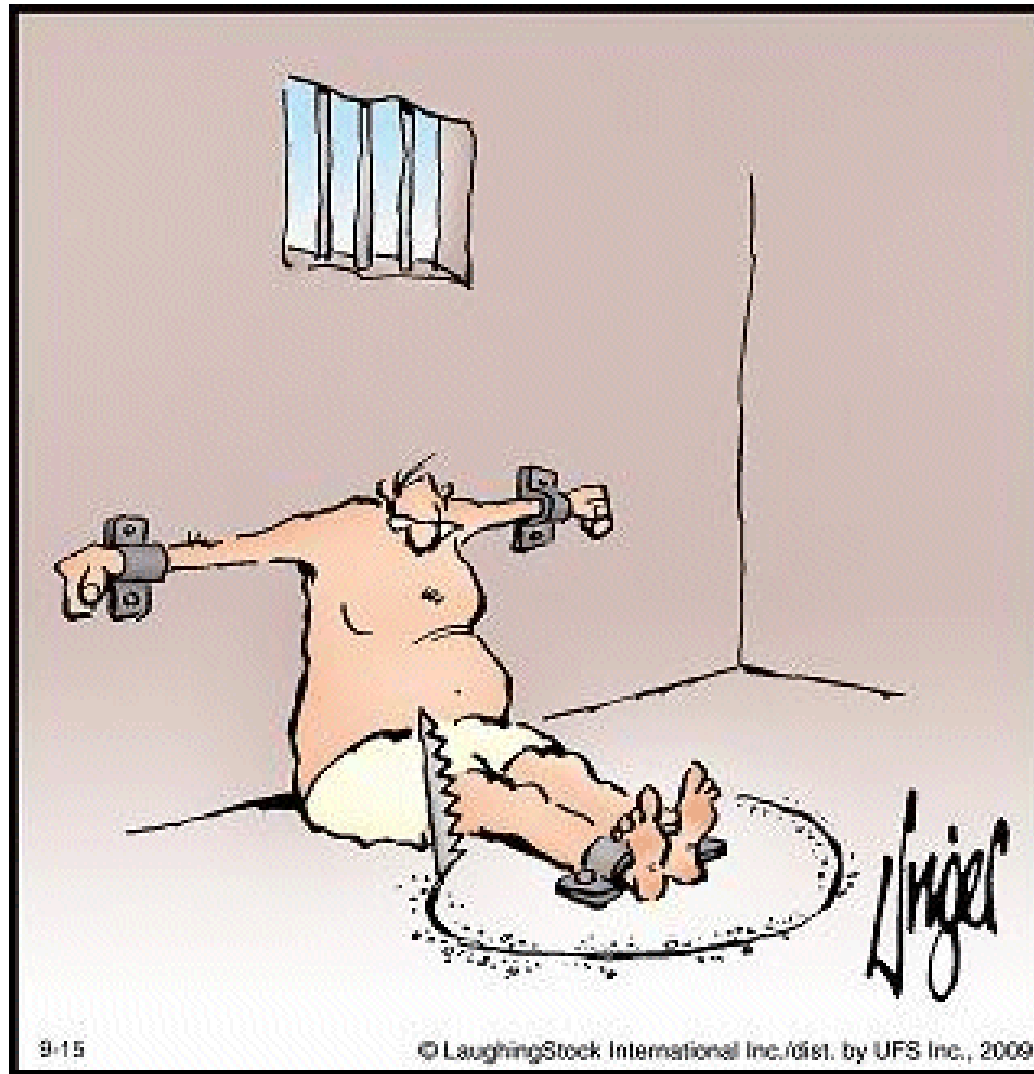
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Don't let the beaches and ocean breezes fool you.

# Unintended Consequences



“With friends like you . . .”











# The Future

# Future Activities



**Regulations:** ARB Sustainable Freight Initiative and SCAQMD 2016 Air Quality Management Plan



**Incentive Funding:** Greenhouse Gas Reduction Fund, Carl Moyer Program, Prop 1B, AB 118, etc.



**Technology Development:** Zero emission trucks and yard hostlers; ultra-low NOx natural gas engines

# Stanton Fellowship Research:

- Interviewed 16 leaders from various sectors, including government, industry, labor, and environmental
- Conducted online survey of goods movement stakeholders (103 responses, 35% response rate)

# Results:

- Stakeholders agree that freight will move more efficiently and be less polluting in the future.
- Stakeholders tend to agree that policy decisions and funding provide the greatest challenge.
- Technology is not seen as a problem.

## Quotes:

“There’s nothing that’s technologically beyond us today to get to zero emissions. It’s all about cost.”

“Without question, we’re going to see the continued improvement of the environmental performance of the freight sector.”

Less  
Challenging

Please rank the following in terms of which presents the greatest and least challenges to achieving the widespread deployment of zero and near-zero emission freight technology in California.

3.50  
3.00  
2.50  
2.00  
1.50  
1.00  
0.50  
0.00

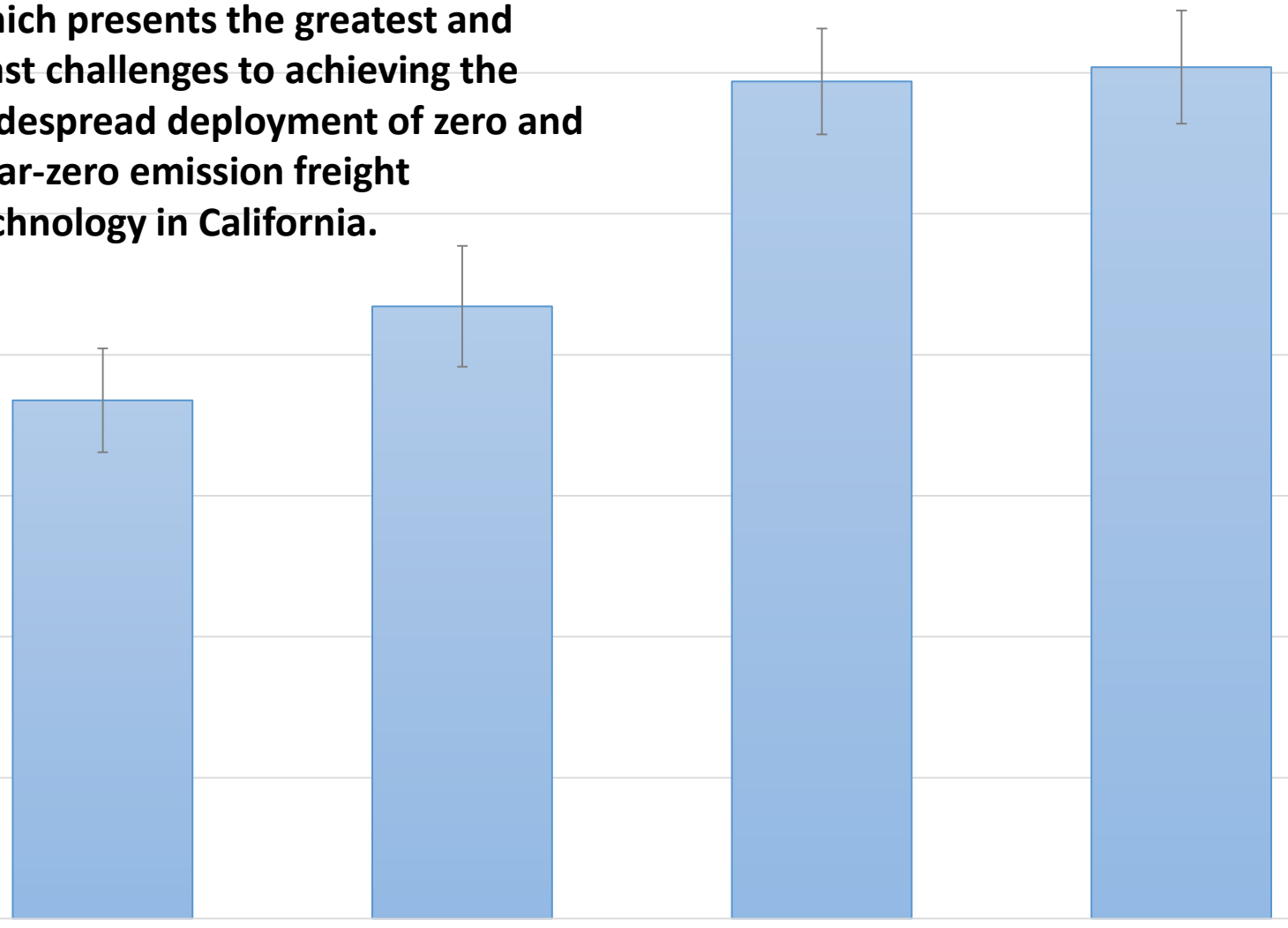
More  
Challenging

Finance and funding

Adopting and implementing the right policies

Building supporting infrastructure

Overcoming technology challenges







ZERO EMISSION

**DANGER** **STAY CLEAR**

**WARNING**  
BURST  
HAZARD

RECOMMENDED TIRE PRESSURE 10 BAR / 145 PSI

Continental Co  
21.00-25



## Recommendations to TRB

- Port & freight solutions project focused on zero and near-zero emission technology and how to pay for it
- Host convening of national/international stakeholders