

# Setting the Framework

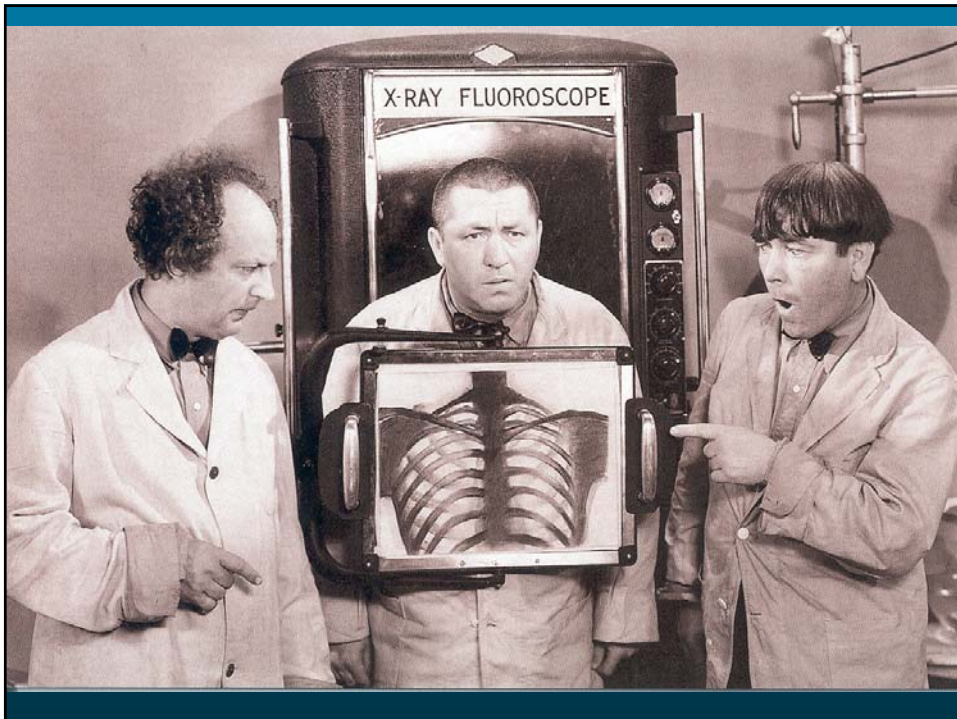
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Executive Officer  
South Coast AQMD

## Arriving at FFCA California 2008

- Three-year span of efforts → **Great progress**
- Regional & State:
  - San Pedro Bay Ports Clean Air Action Plan Nov. 2006
  - BTH / CalEPA Goods Movement Action Plan Jan. 2007
  - CARB Off-Road In-Use Fleet Regulation July 2007
  - CARB Harbor Craft Regulation Oct. 2007
  - AB 1007 State Alternative Fuels Plan Oct. 2007
  - CARB Drayage Truck Regulation Dec. 2007
  - CARB Marine Vessel At-Berth Regulation Dec. 2007
- National:
  - Marine Vessel Emissions Reduction Act of 2007

## New Emission Reductions Needed

- CA Carbon Reduction Goals (from 1990)
  - ↓17% by 2020
  - ↓80% by 2050
- 24-Hour PM<sub>2.5</sub> / 8-Hr. Ozone Standards
  - ↓70% NO<sub>x</sub>
- New 8-Hour Ozone Standard (Proposed)
  - ↓90% NO<sub>x</sub>



# Los Angeles Times

Friday, January 26, 2007

## FREEWAY AIR DAMAGES YOUNG LUNGS

Children living nearby show signs of lifelong harm, USC study finds.

By THOMAS H. MAUGH II  
Times Staff Writer

In the largest and longest study of its kind, USC researchers have found that children living near busy highways have significant impairments in the development of their lungs that can lead to respiratory problems for the rest of their lives.

The 13-year study of more than 3,600 children in 12 Central and Southern California communities found that the damage from living within 500 yards of a freeway is about the same as that from living in communities with the highest pollution levels, the team reported Thursday in the online version of the medical journal *Lancet*.

"If you live in a high-pollution area and live near a busy road, you get a doubling" of the damage, said lead author W. James Gauderman, an epidemiologist

at USC. "The small airways of the lungs are normally associated with fine particulate matter from automobiles, and this study tells me that I wouldn't be raising my children in an area free of air pollution," said C. Arden Pope III of Young University, an air pollution and health researcher who was not involved in the study but said he would want to see more research in areas where the exposure is high.

The study is part of an ongoing effort to understand the effects of air pollution on children's respiratory health. Previous findings have shown that living near a freeway can increase the risk of children being diagnosed with asthma.

## Tainted freeway air harms children's lungs, study says

This latest study of freeway proximity and lung capacity was funded by the California Air Resources Board, the National Institute of Environmental Health Sciences, the Environmental Protection Agency, the National Heart, Lung and Blood Institute, and the Hastings Foundation.

Gauderman and his colleagues recruited groups of fourth-grade students, average age 10, in 1993 and 1996. Their schools were scattered from Atascadero in San Luis Obispo County to Alpine in San Diego County.

The team collected extensive information about each child's home, socioeconomic status and other facts that might impinge on health.

Once each year, the team visited the schools and measured the children's lungs, as-

sessing how much air could be expelled in one breath and how quickly it could be expelled.

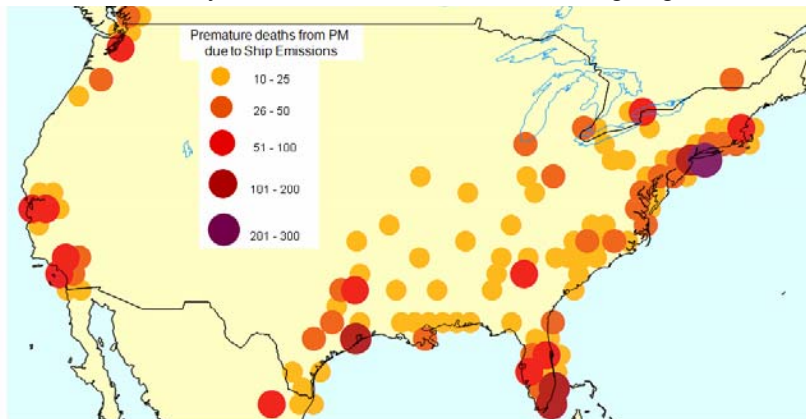
These cohorts of children "are truly an important resource because the study has been going on so long," said epidemiologist Jonathan Samet of Johns Hopkins University's Bloomberg School of Public Health, who also did not take part in the study. The size and scope of the study make it very difficult to replicate, he said.

Results from the study reported in 2004 indicated that children in the communities with the highest average levels of pollution suffered the greatest long-term impairment of lung function.

In the new study, Gauderman and his colleagues found that by their 18th birthday, children who lived within 500 yards of a free-

## Health Impacts from Ships are a Nationwide Problem

At least 2,000 to 5,000 Premature Deaths Per Year in the Continental U.S. Are Caused by Particulate Pollution from Oceangoing Vessels



Cleaner marine fuels would reduce nationwide ship health impacts by ~ 60 %

## Challenge

- Address **global climate** change **AND** reduce **criteria** & **toxic** pollutants
- Exercise every available opportunity to achieve multiple public benefits

## Priority Issue: 'Combustion Out'

- Low- and zero-emission fuels
- Energy efficiency and reduced fuel consumption
- Combustion-emission control technologies

# Near-Term Priorities

- Ocean-Going Vessels
  - Low-Sulfur Fuels
  - Shore Power or Alternative
  - SCR NO<sub>x</sub> Controls
- Cargo Handling Equipment
  - Replacement / Retrofit / Hybrids
  - Electrification
- Trucks
  - Replacement/Retrofit
  - Electric power / Hybrids
- Rail
  - Multi-Engine, Hybrids or Alt Fuel
  - Line Haul Locomotive Aftertreatment
  - Electrification



Case Story  
Four ships with SCR



**Our efforts today  
are shaping their tomorrow.**

