



Developing California's Emission Reduction Plan for Goods Movement

Public Meetings to Solicit Input

**October 11, 2005
Long Beach CA**

**November 1, 2005
Oakland CA**



Air Resources Board

California Environmental Protection Agency

Health risks



Health impacts of diesel pollution*

- ✳ Exposure to diesel pollution + ozone in the LA region in year 2000 contributed to:
 - About 2,000 premature deaths
 - Health impacts valued at over \$16 billion
- ✳ Port-related sources emit ~20% of total, but impacts are not directly proportional
- ✳ Cancer risk near major diesel sources is roughly double the urban background

* *Goods Movement Action Plan: Phase I*

Ports – increased cancer risk



**Ports of
Los Angeles & Long Beach*
(2002)**

<u>Risk (chances/million)</u>	<u>People impacted</u>
>500	50,000
>200	400,000
>100	1 million
>10	2 million

**October 2005 Draft ARB Study*

Rail yards – increased cancer risk



**Roseville Rail Yard*
(2000)**

<u>Risk (chances/million)</u>	<u>People impacted</u>
100-500	20,000
10-100	150,000

**October 2004 ARB Study*

Freeways – increased cancer risk



**Freeways and
High Traffic Roads***

**Risk
(chances/million)**

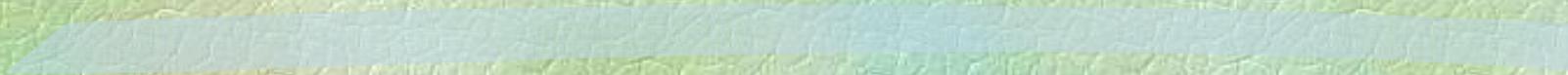
300-1,700

**April 2005 ARB Land Use and Air Quality Handbook*

Cumulative impacts

- ✧ Some communities are exposed to pollution from all sectors
- ✧ Response
 - Seek mitigation ideas
 - Prioritize control strategies that provide greatest risk reduction
 - Reduce near-source and cumulative impacts

Emissions



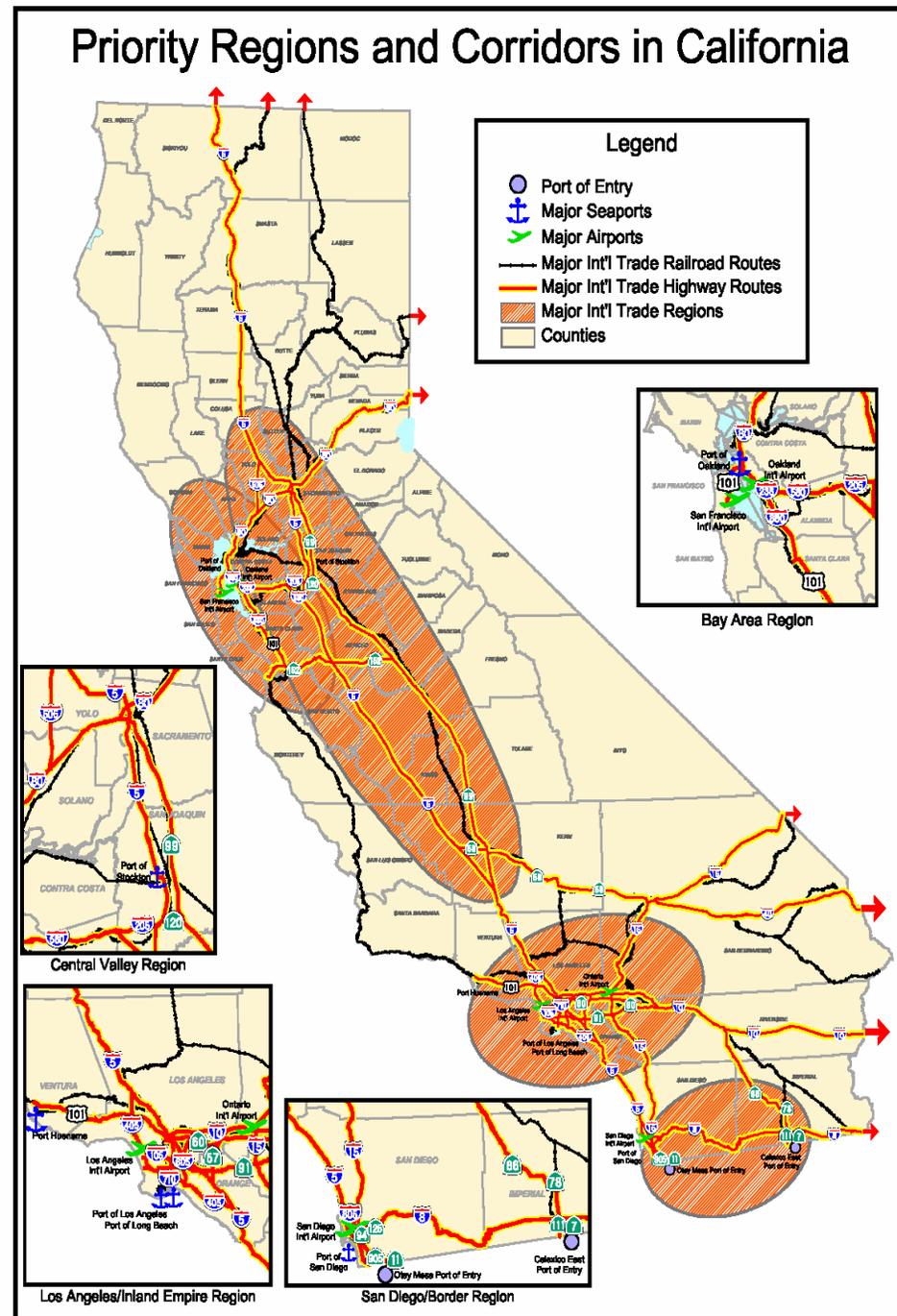
Goods movement in California

- ✧ California ports are international gateway for goods into U.S.
- ✧ Goods transported via rail and truck in neighborhoods and along heavily-traveled corridors



Key “port to border” regions

- ✧ Los Angeles-Long Beach
- ✧ Bay Area
- ✧ Central Valley
- ✧ San Diego



Goods movement-related emission sources

- ✧ Cargo handling equipment
- ✧ Ships
- ✧ Harborcraft
- ✧ Locomotives
- ✧ Diesel trucks
- ✧ Airplanes



Future trends

- ✧ Dramatic increase in trade
- ✧ More emissions from entire goods movement system
- ✧ Emissions are concentrated near population centers
- ✧ Some sources still poorly controlled



Call to action



Public health imperative

- ✧ Air pollution from goods movement is substantial
- ✧ Existing emissions must be reduced to cut toxics risk and meet air quality standards by federal deadlines
- ✧ Growth will make the challenge greater

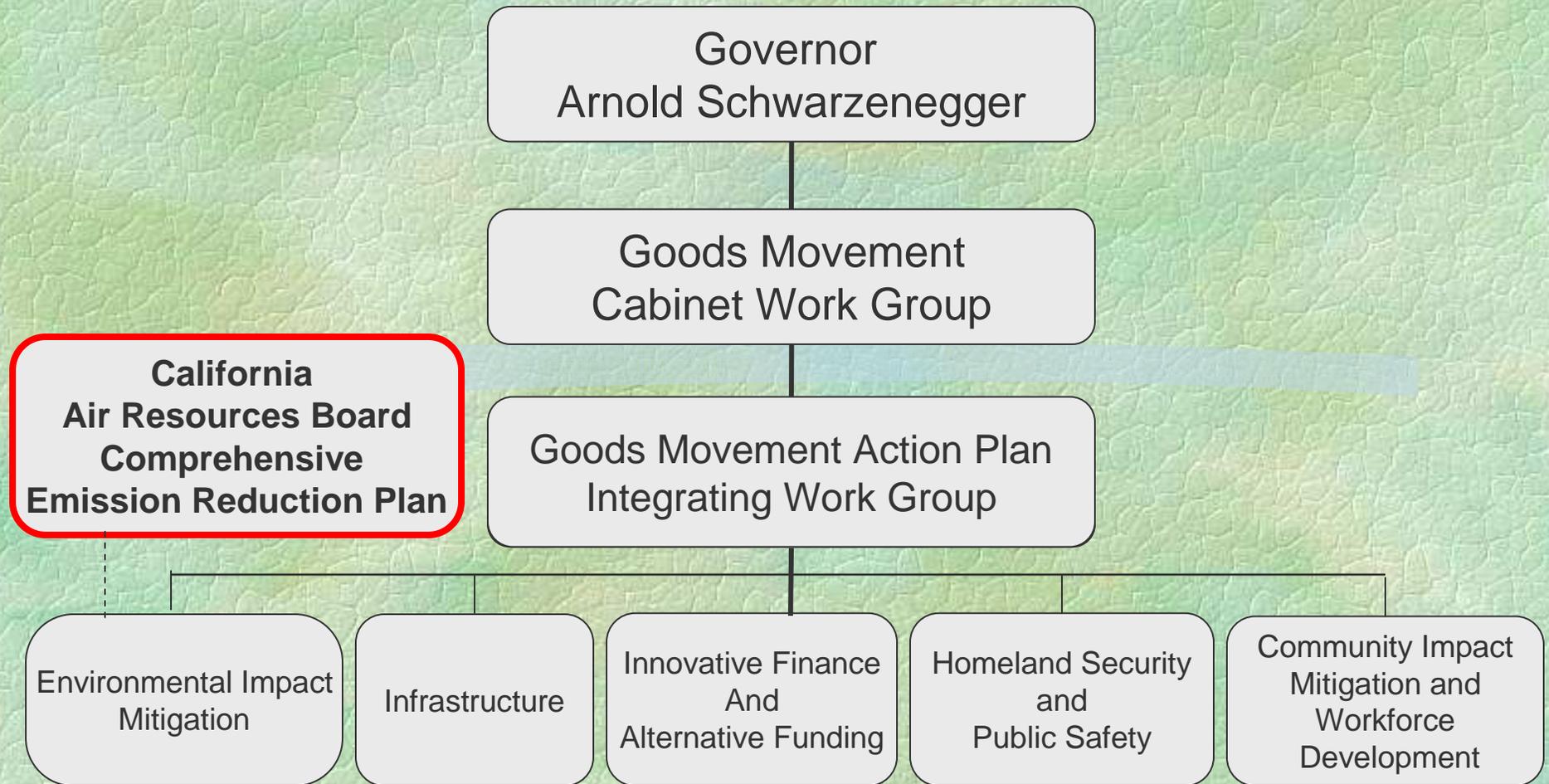


Multiple drivers

- ✧ Diesel Risk Reduction Plan
- ✧ State Implementation Plan
- ✧ Governor's Environmental Action Plan
- ✧ Environmental Justice Programs
- ✧ BTH-Cal/EPA Goods Movement Action Plan



Goods Movement Action Plan Phase II Work Group Structure



ARB's charge -- develop a comprehensive emission reduction plan

- ✧ Build upon current efforts
- ✧ Involve all stakeholders in public process
- ✧ Fully mitigate impacts
- ✧ Refine cost estimates
- ✧ Seek financial incentives
- ✧ Support national/international standards

Emission reduction plan



- ✧ By 2010, reduce emissions to 2001 levels
- ✧ Continue reducing emissions until air quality standards are met and community impacts are mitigated
- ✧ By 2020, cut diesel particles 85%

Strategy objectives



Ships



- ✧ Cleaner new engines and fuels
- ✧ Add-on emission controls
- ✧ More efficient ships
- ✧ Operational changes
- ✧ Shore-based power in port

Commercial Harbor Craft



- ✧ Cleaner new engines and fuels
- ✧ Add-on emission controls
- ✧ Faster engine replacement
- ✧ Alternative fuels
- ✧ Operational changes
- ✧ Shore-based power in port

Cargo Handling Equipment



- ✧ Cleaner new engines
- ✧ Add-on emission controls
- ✧ Faster replacement with new models
- ✧ Alternative fuels

Trains



- * Cleaner new engines
- * Add-on emission controls
- * Faster replacement with new models
- * Cleaner diesel and alternative fuels
- * Reduced idling

Trucks



- ✧ Faster replacement with new models
- ✧ Add-on emission controls
- ✧ Increased inspection and repair
- ✧ Alternative fuels
- ✧ Reduced idling

Implementation

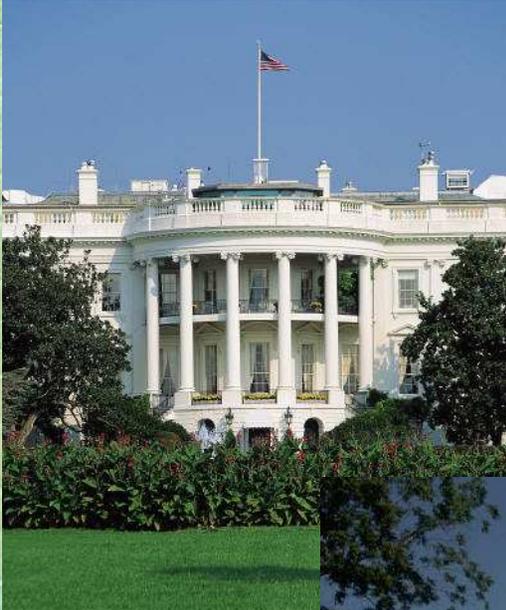


California regulations



- ✦ How new rulemaking by ARB and other agencies can compel clean technology

National actions



- ✧ How national regulations and funding can fulfill the federal government's responsibilities

Incentives



- ✧ How additional financial incentives can speed the introduction of cleaner technology

Fees



- ✧ How new fees on cargo coming in to CA ports could fund environmental mitigation
- ✧ How fees could encourage less polluting choices

Market participation concepts

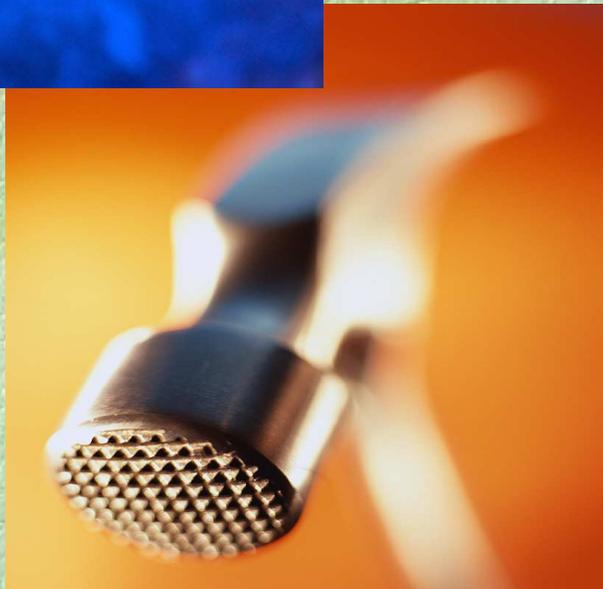


- ✧ How ports can use their lease authority to leverage environmentally beneficial actions
- ✧ How state or local governments can affect private purchasing decisions

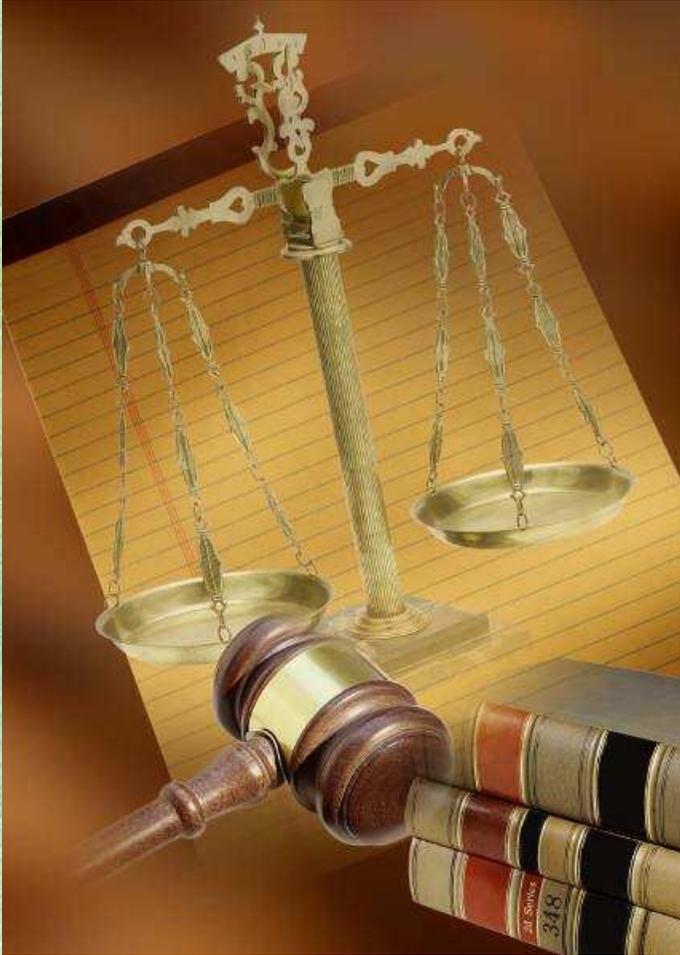
Enforceable agreements



- ✧ How agencies can effect change quickly without the clear authority to require it



Legal complexities



- ✧ State, national and international laws in play
- ✧ The more consensus we have for action, the less likely it is that litigation will delay benefits

Efforts underway



ARB rulemaking already underway

Board action expected

October 20-21: Limit sleeper cab truck idling

November 17: Ban cruise ship incineration near shore

December 8-9: Clean up cargo equipment
Clean up ship auxiliary engines

2006: Require international trucks in CA to meet U.S. standards

Clean up harborcraft

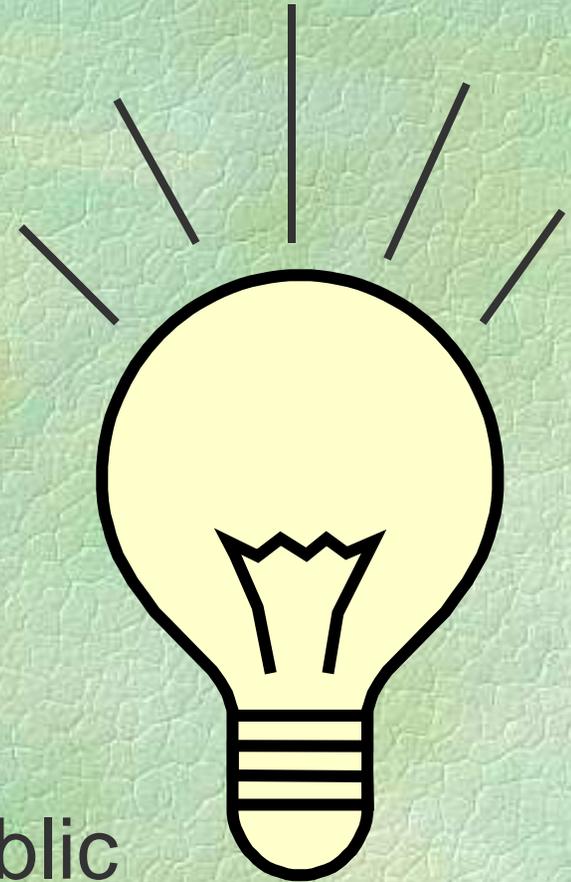
Clean up private truck fleets

Other current ARB efforts

- ✧ Push U.S. EPA for national action
 - “Tier 3” standards for trains and ships
 - Sulfur emission control area for ships
- ✧ Seek and focus incentive funding
 - Moyer goods movement emphasis
 - West Coast Diesel Collaborative
- ✧ Minimize future health impacts via Air Quality and Land Use Handbook

We want your ideas

- ✧ Kickoff meetings
October 11/November 1
- ✧ Written suggestions
by November 4
- ✧ Draft plan release, then public
workshops in early December
...and fold applicable strategies into
ARB's State Implementation Plan



ARB contacts

- ✧ Please send written comments to:
Ms. Sylvia Oey, Manager, Liaison Section
AQTPB–Goods Movement, Air Resources Board
P.O. Box 2815, Sacramento, CA 95812
or soey@arb.ca.gov
- ✧ For questions, please contact:
Sylvia Oey at (916) 322-8279, or
Jeff Weir at (916) 445-0098, jweir@arb.ca.gov
- ✧ ARB website for meetings and documents:
<http://www.arb.ca.gov/planning/gmerp/gmerp.htm>

transition to risk assessment





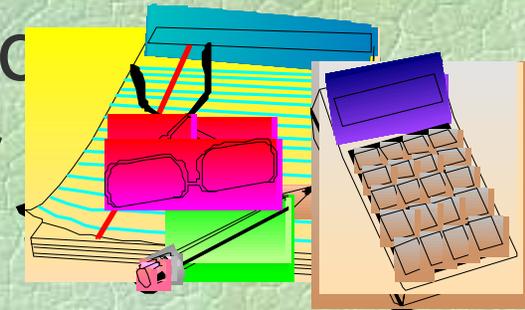
**Air Resources Board
Risk Assessment Study for the
Ports of Los Angeles and Long Beach
*October 2005 Draft***

Study objectives

- ✧ Investigate impacts of various emission sources on the nearby communities
- ✧ Prioritize possible mitigation measures to control diesel PM based on magnitude of health risks, and
- ✧ Assist in evaluating the impacts of measures to reduce emissions

What is a Health Risk Assessment?

✧ Evaluation of the potential for a chemical to cause cancer or other illness



- uses mathematical models to estimate exposures (risk)
- risk expressed as the chances of excess cancers in a population of a million over a 70-year lifetime

Study approach

- ✧ Estimated diesel PM emissions from all activities within the Ports boundaries and overwater: ocean-going vessels, hotelling, cargo handling, harbor craft, in-port trucks, in-port locomotives
- ✧ Allocated emissions to appropriate areas and time of operation
- ✧ Developed key activity assumptions and data inputs for model

Study approach (cont.)

- ✧ U.S. EPA ISCST3 model
- ✧ Wilmington meteorological dataset
- ✧ Urban dispersion for near source risks
- ✧ Modeling study area: 20 mi x 20 mi
- ✧ Followed OEHHA Guidelines for Health Risk Assessments (80th percentile breathing rate, 70-year exposure)
- ✧ Equipment-specific parameters

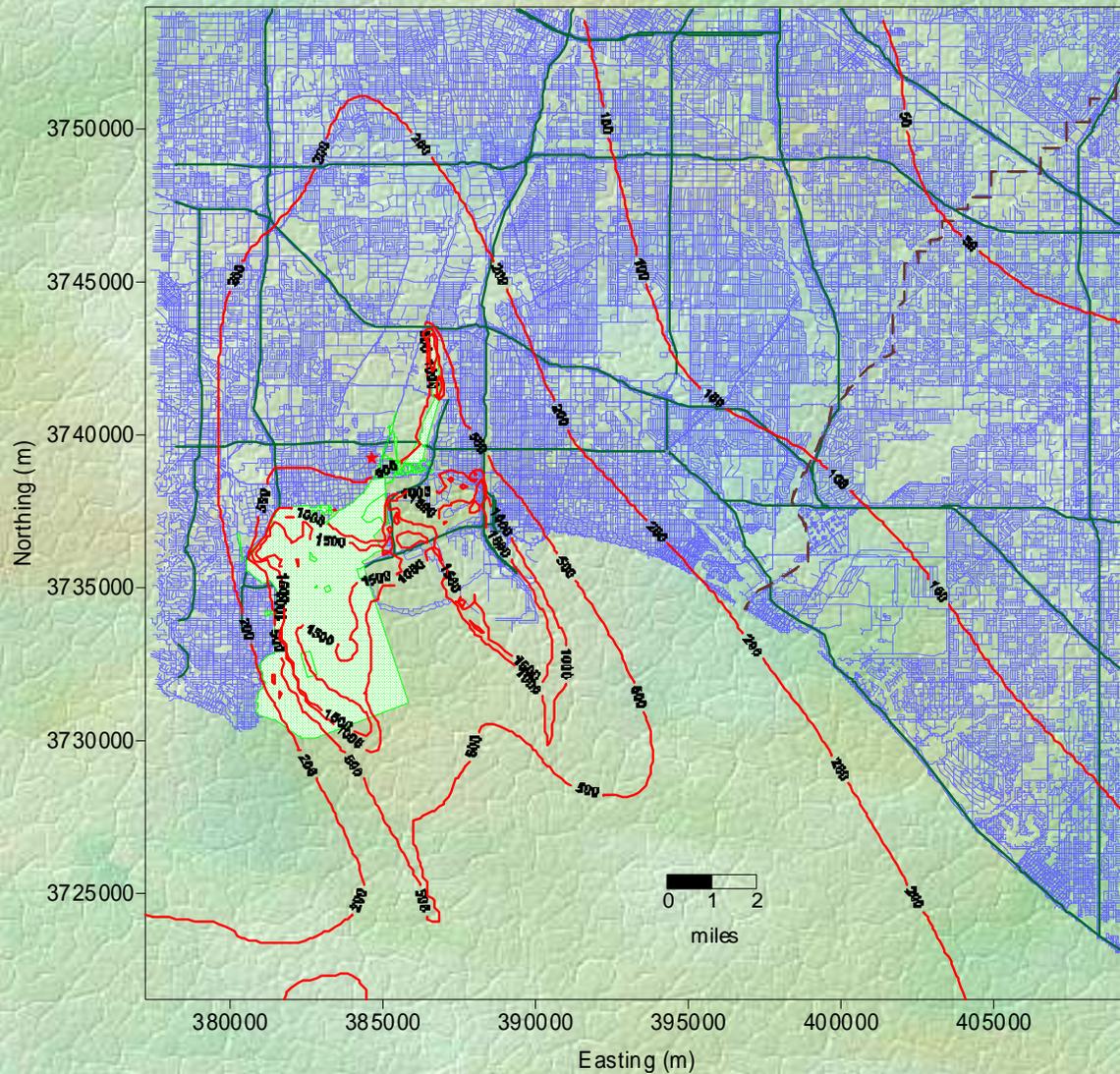
Ports of Los Angeles/Long Beach 2004 diesel PM inventory

Category	Emissions (tons/year)	Percent
Vessels	942	54%
Hotelling	343	19%
Harbor craft	244	14%
Cargo	172	10%
In-Port Truck	41	2%
In-Port Loco	18	1%
Total	1,760	100%

Health risk assessment results

- ✧ Risks are depicted as isopleths overlaid on a regional map
- ✧ Near source risks can be over 500 in a million
- ✧ Elevated concentrations and risks extend over a very large area
- ✧ Individual emission sources have different contributions to the nearby communities

Estimated cancer risk from the Ports (for all emissions)



Findings

- ✧ Combined diesel PM emissions: 1,760 TPY
- ✧ Large region impacted by the diesel PM emissions from the Ports
 - Risks >500 - 2,500 acres & 53,000 people
 - Risks >200 - 29,000 acres & 411,000 people
 - Risks >100 - 94,000 acres & 1.1 million people
 - Risks >50 - 160,000 acres & 2 million people

Findings (cont.)

- ✧ Noncancer health effects in study area
 - 29 premature deaths/year (directly emitted PM, ages >30)
 - 750 asthma attacks
 - 6,600 days of work loss (ages 18-65)
 - 35,000 minor restricted activity days (ages 18-65)

Findings (cont.)

- ✧ Reducing emissions from cargo handling equipment and marine auxiliary engines will provide the most immediate and significant reductions in public exposure to diesel PM in the neighboring communities

Next steps

- ✧ Technical meeting on draft report:
October 26, Marina Hotel, San Pedro
- ✧ Regulatory activity for cargo handling equipment and marine auxiliary engines
 - Proposed regulations and staff reports publicly available October 21, 2005
 - Board hearing December 8, 2005
- ✧ Additional analyses for BTH-Cal/EPA Goods Movement Action Plan, Phase II

thank you for your attention

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