

# Update on Emission Reduction Plan for Ports and Goods Movement in California



**Air Resources Board Meeting  
November 16, 2006  
San Francisco**



**Air Resources Board**  
California Environmental Protection Agency

# Overview

- **Scope of goods movement**
- **Progress on plan strategies**
- **Local focus**
- **Updates to health analysis**
- **Funding mechanisms**
- **What's next**

# **Across California**

**On a typical day:**

- **30,000 containers arrive/leave via ship**
- **250,000 big-rig trucks plus 380,000 diesel local delivery trucks on roads**
- **1,200 locomotives operating**

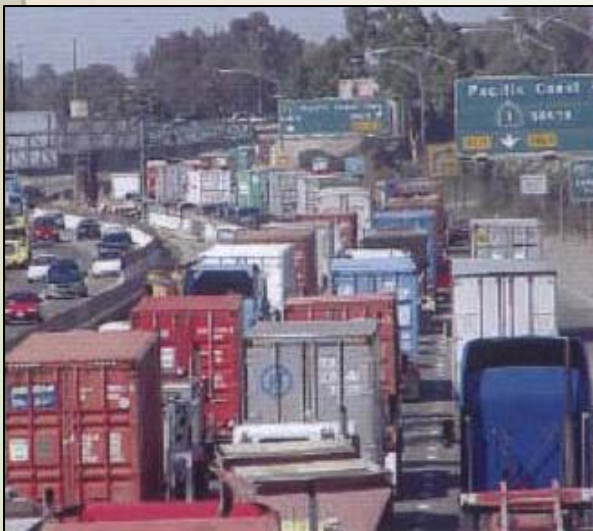
**Supported by:**

- **3,700 pieces diesel cargo equipment**
- **4,100 commercial harbor craft**

# Key Source of Community Health Risk

## Near-source cancer risk (2000-2002)

- High traffic freeways: 300-1,700/million
- Port of LA/Long Beach: 10-500+/million
- Roseville Railyard: 10-500/million

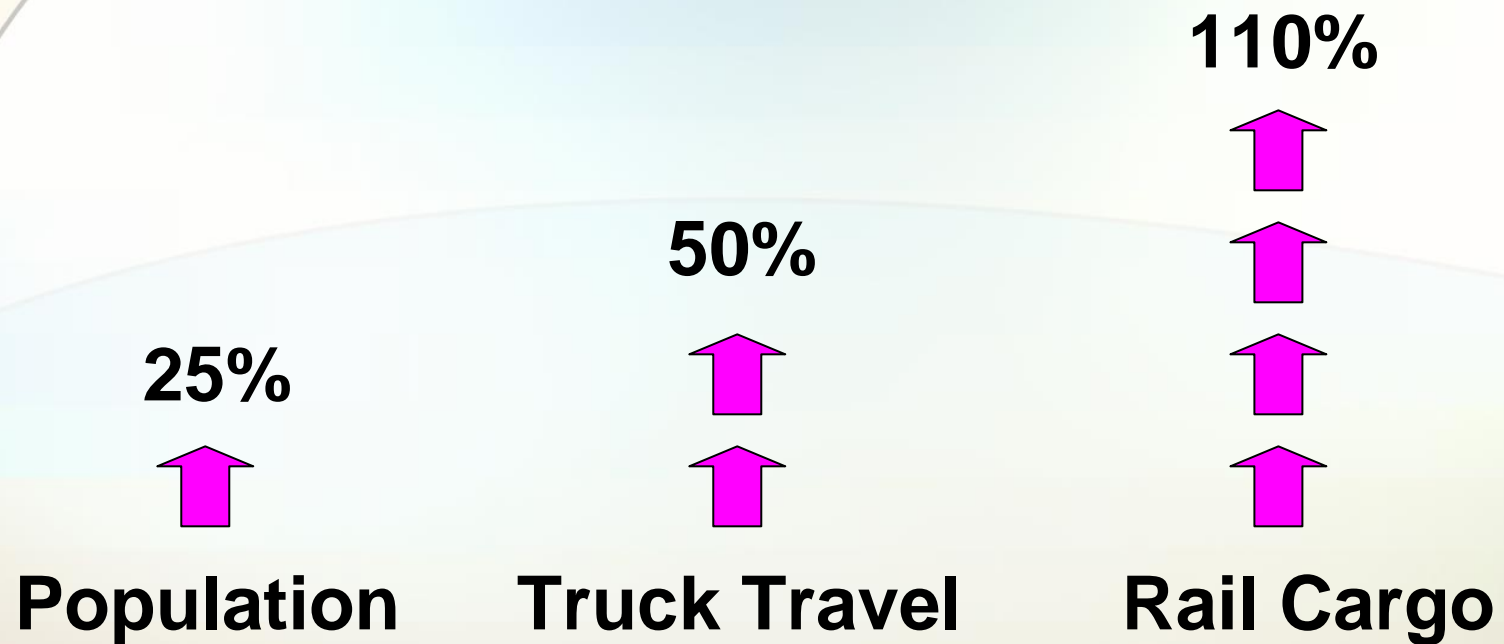




# International Cargo Triples by 2020



# California's Growth Adds to Demand



# **ARB Goals for Goods Movement**

*(April 2006 Emission Reduction Plan)*

## **Reverse growth in emissions**

- **By 2010, reduce emissions as much as possible, at least to 2001 levels**

## **Reduce diesel PM risk**

- **Rapid reduction in community risk**
- **By 2020, reduce statewide risk 85%**

## **Attain federal PM2.5 & ozone standards**

# **Progress on Plan Strategies**



# **Ships**

## *Accomplishments*

- ✓ **Auxiliary ship engine fuel rule adopted**
- ✓ **Cruise ship incineration rule adopted**
- ✓ **Lower vessel speeds in S. California**
- ✓ **Retrofit demonstration in progress**



# **Ships**

## *Upcoming through 2007*

### **California**

- **Main engine fuel rule** (late 2007)
- **Shore power rule** (late 2007)
- **Speed reduction rule** (mid-2007)



# **Ships**

## *Upcoming through 2007*

### **National/international**

- **IMO review of ship and fuel standards**
- **SOx Emission Control Area (SECA) technical analysis for North America**
- **US EPA new main engine proposal**
- **US EPA new auxiliary engine standards**



# Harbor Craft

## *Accomplishments*

- ✓ **Low sulfur diesel used in South Coast**
- ✓ **Draft harbor craft rule released**
- ✓ **Engine replacement continues**

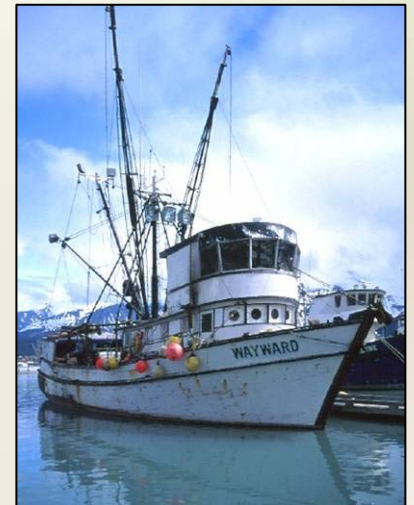




# Harbor Craft

## *Upcoming through 2007*

- **Harbor craft rule (mid-2007)**
- **US EPA new harbor craft engine standards**



# **Trucks**

## *Accomplishments*

- ✓ **In-use compliance rule adopted**
- ✓ **Border trucks rule adopted**
- ✓ **Low sulfur diesel fuel used**
- ✓ **Cleaner 2007 engines introduced**
- ✓ **Inspections in impacted communities**



# Trucks

## *Upcoming through 2007*

- **Private truck fleets rule** (mid-2007)
- **Port trucks rule** (late 2007)



# Locomotives

## *Accomplishments*

- ✓ Low sulfur diesel fuel requirements
- ✓ Tier 2 locomotive use increasing
- ✓ Cleaner switchers being introduced
- ✓ Technology demonstrations underway





# Locomotives

## *Upcoming through 2007*

- **Railyard risk assessments**
- **US EPA standards for new and existing locomotives**



# **Cargo Handling Equipment**

## *Accomplishments*

- ✓ **Diesel equipment rule adopted**
- ✓ **Gas forklift rule adopted**
- ✓ **Low sulfur diesel fuel used**
- ✓ **Port fleet upgrades continuing**



# Local Focus

# **Localized Health Risk**

- **New risk assessments underway**
  - **Railyards & adjacent communities**
  - **Maritime Port of Oakland**
  - **Warehouse distribution center assessment study**
- **Wilmington community project**



# Railyard Risk Assessments

## *Phase I*

### BNSF

Commerce/Eastern

Hobart

Richmond

Stockton

Watson/Wilmington

### UP

Commerce

LA Transportation  
Center

Mira Loma

Stockton



# West Oakland Risk Assessments





# Wilmington Community Project

- Explore community concerns
- Develop new tools to assess community risk
- Associated Harbor Communities Air Monitoring Study



# **Southern California**

- **San Pedro Bay Ports Plan for Los Angeles and Long Beach**
  - Joint hearing November 20
- **LA Metro Transportation Authority Multi-County Goods Movement Action Plan**

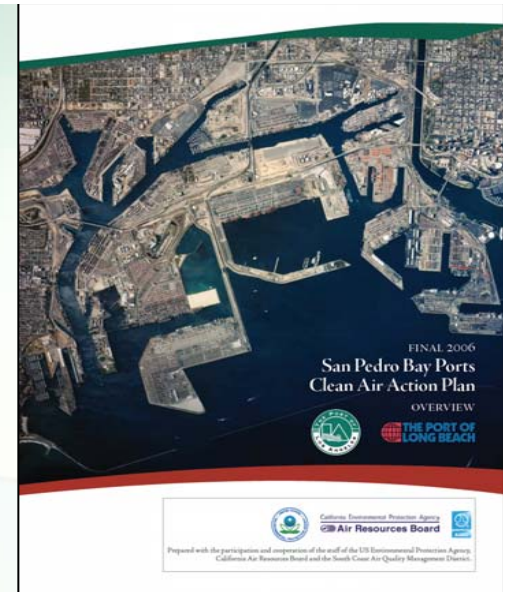




# San Pedro Bay Ports Plan

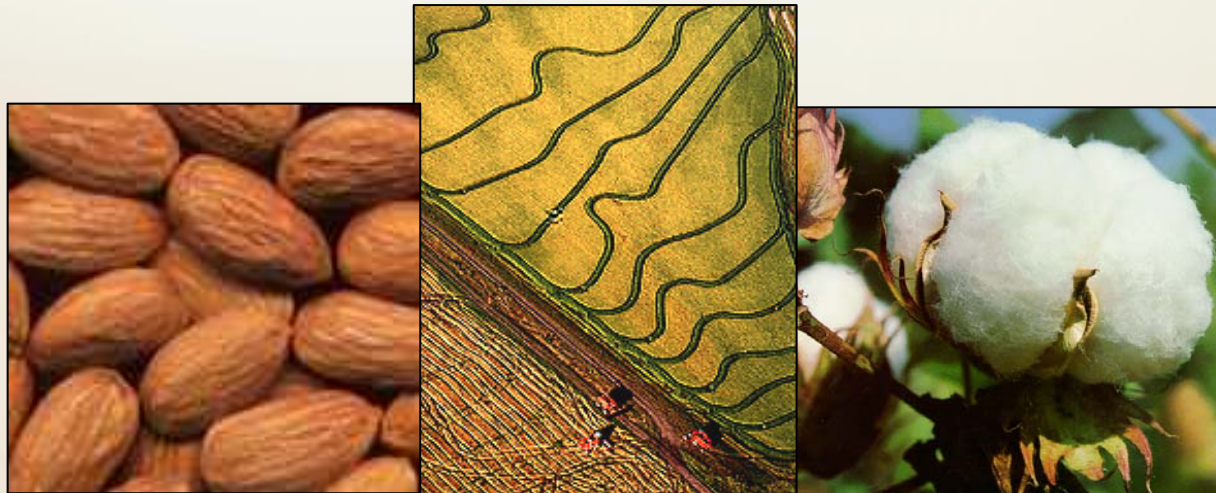
## Changes since July briefing

- **Ports: “fair share” targets**
- **New projects:  $\leq 10$  in million risk, cumulative effect within port targets**
- **Trucks: emblem for gate entry, prevailing wage concepts**
- **Locomotives: MOU for Tier 3 controls on port property and low sulfur fuel**
- **Funding: possible port tariffs**



# Northern California

- **Port of Oakland and Bay Area Air District**
- **Northern California Trade & Mobility Corridor**



# Updates to Health Analysis

# **Health Impacts**

## *Background*

- **Analysis in Emission Reduction Plan**
- **New PM studies on premature death**
- **Sulfate PM impacts to be assessed**
- **Board's charge -- reevaluate effect of new health studies and estimate impacts from sulfate PM**

# Health Impacts

## *Status*

- **Public process to update PM-premature death relationship on-going**
  - New factor based on U.S. EPA's Expert Elicitation for PM
  - Draft ARB report late November, followed by public and peer review
- **Sulfate impacts to be based on SOx Emission Control Area (SECA) analysis**



# Funding Mechanisms

# ✓ Proposition 1B

*Highway Safety, Traffic Reduction, Air Quality,  
and Port Security Bond Act of 2006*

- **\$1 billion to reduce emissions from freight movement in trade corridors**
- **Reductions not required by law or regulation**
- **\$200 million for cleaner school buses**

# Implementation

- **Legislature sets conditions and criteria**
- **Legislature appropriates funds to ARB**
- **ARB staff employs public process to develop recommendations**
- **Board action on proposals**
- **Projects funded and implemented**

# Example Project Mix

**Potential cost-effectiveness: \$3,000/ton**

- **20,000 port trucks – retrofit/replace**
- **20,000 other short haul trucks – retrofit**
- **600 harbor craft – replace engines**
- **200 switch locomotives – replace**
- **80 piers – electrify for shore power**

# **Moyer Funding for Goods Movement**

- **District funding**
  - Over 800 engines upgraded since 1998
  - South Coast targeting \$22 million/year
- **10% ARB set aside focuses on multi-district projects and goods movement**
  - \$13 million funded in 2004-2006
  - Locomotives (Bay Area, Roseville, SJV)
  - Ship retrofit/fuel (Bay Area, South Coast)
  - Tug boat (San Diego)



# Other Funding

- **Ports of Los Angeles and Long Beach - about \$200 million each over 5 years**
- **Possible port tariffs to raise additional monies**
- **Minimal federal funding so far**

# What's Next

# **Transitioning to New SIPs**

## *Focus on South Coast & SJ Valley*

- **Goods movement is core of strategy**
- **PM2.5 (2014): Ships, trucks, and locomotives key to SOx/dPM/NOx cuts**
- **Ozone (2020+): Trucks, ships, and locomotives key to NOx cuts**
- **Both areas may need additional, targeted NOx reductions for trucks**

# **Goods Movement**

## *ARB “To Do” List*

- **Develop/enforce ARB rulemakings**
- **Implement \$1 billion funding program**
- **Push federal/international standards**
- **Support local initiatives**
- **Conduct risk assessments**
- **Update health impacts analysis**