

Improving Port Community Air Quality: AQMD Initiatives and Emission Reduction Strategies

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Community Forum
Long Beach
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Overview

- Port Air Quality
 - Defining Community Air Quality
 - Pollution Levels and Risk
 - The Sources – Special Challenges
- Current AQMD Port Area Emission Reduction Activities
 - Stationary Sources
 - Smoking Ships
 - Idling Trucks (AB2650 Lowenthal)
- Future Directions in Emission Control





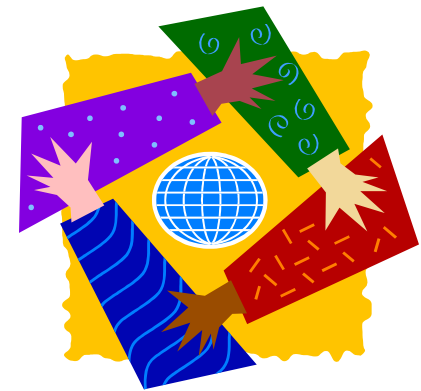
The South Coast Air Quality Management District

- The South Coast Basin
 - 4 County Region with 11,000 Square Miles
 - 16 Million Residents
 - 10+ Million Motor Vehicles
 - 31,000 Companies with Air Quality Permits
 - World's Largest Gasoline and Diesel User
 - World's 8th Largest Economy



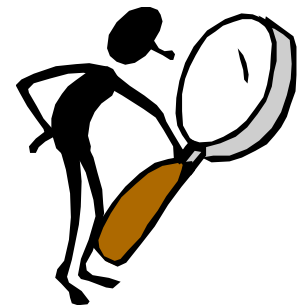
Environmental Justice Initiatives

- Equitable Environmental Policymaking and Enforcement to Protect ALL Residents from the Health Effects of Air Pollution
- Charting the Direction
- Key Stakeholder Participation/Partnership
 - Public
 - Regulated Businesses
 - Environmental and Community Groups
 - Elected Representatives
 - Local Governments
 - Other Agencies



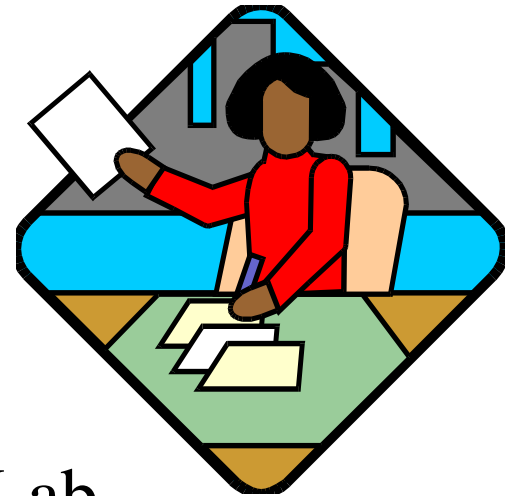
Multiple Air Toxics Exposure Study (MATES II)

- Most Comprehensive Urban Air Pollution Study Ever
- Documented Cancer Risk From Some Air Toxics Down By 75% Over Past Decade
- Current Regional Average Cancer Risk From Air Toxics = 1400 in a million
- Assumes 70 Years Continuous Exposure to Monitored Levels
- MATES III Sampling Underway



Multiple Air Toxics Exposure Study (MATES II)

- One Year Period (1998 – 1999)
- Follow-up to 1986 – 1987 Study
- 30+ Toxic Air Pollutants
- 4500 Samples with 45,000 Separate Lab Analyses
- 24 Sites (10 Fixed Regional + 14 Mobile Platforms in Communities to Assess Potential Disproportionate Cancer Burdens)
- Ambient Air Monitoring / Risk Modeling

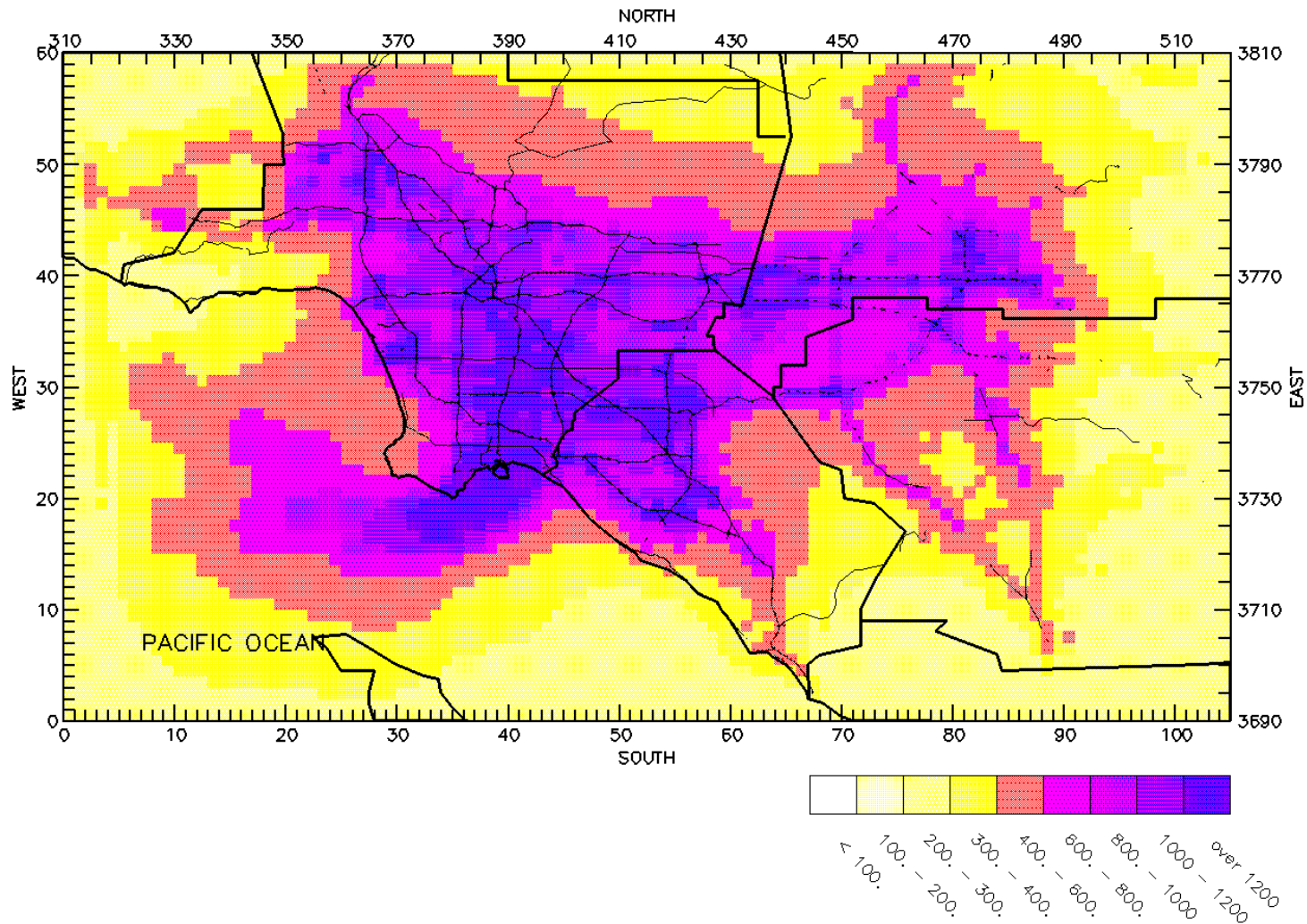


Multiple Air Toxics Exposure Study (MATES II)

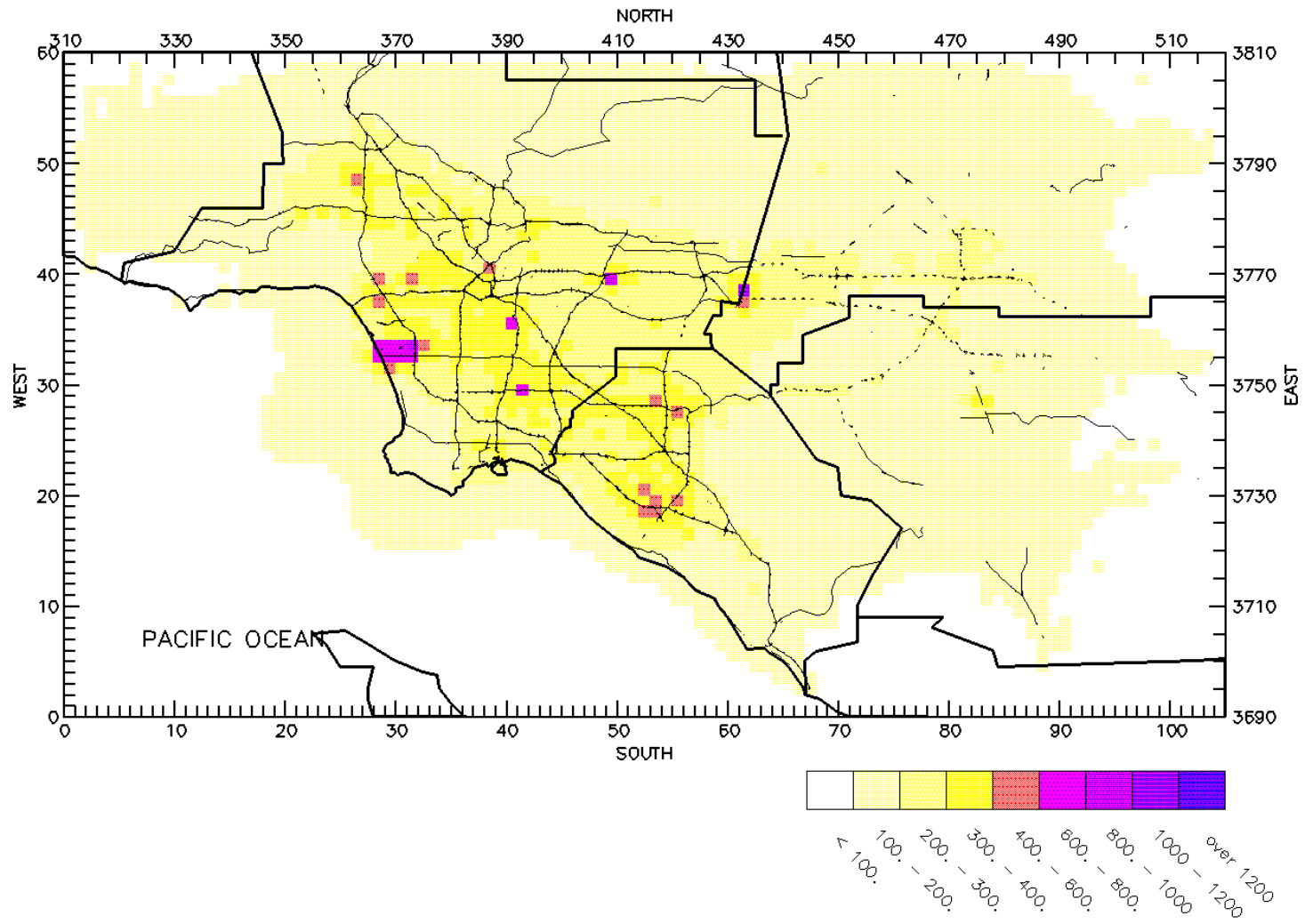
- Diesel Soot = 71% of Risk
- Motor Vehicles & Mobile Sources = 90% of Risk
- Including Diesel Particulate
 - Range = 1100 to 1750 in a million
 - Average = 1400 in a million
- Without Diesel Particulate
 - Range = 300 to 600 in a million
 - Average = 420 in a million
- (General Cancer Risk is 250,000 in a million from all causes i.e. diet/genetic/lifestyle/pesticide residue/etc.)



Model Estimated Risk From All Emission Sources



Model Estimated Risk Excluding Diesel Sources



Port Air Pollution Sources



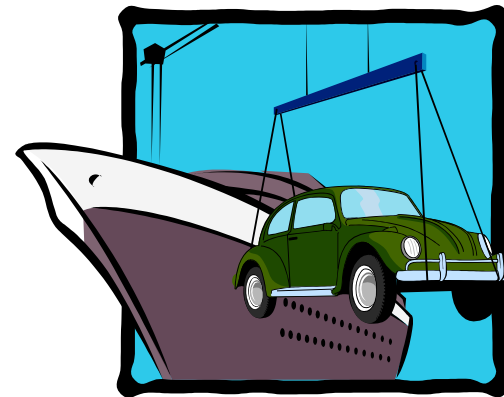
- Traditional Stationary Sources
 - **Construction and Operation Regulated**
 - Air Quality Permits
 - Regular Enforcement Inspections
 - Power Plants
 - Bulk Loading Facilities
 - Refineries
 - Dry Bulk Terminals
 - **Focused Rule Development**

Rule 1158 – Control of Petroleum Coke, Coal, and Sulfur Emissions

- Enclosed Piles, Conveyors, Ship Loaders
- Enclosed Transport Trucks
- Enhanced Truck Washing
- Regular Street Sweeping & Rapid Spill Clean Up
- Improved Material Handling and Paved Areas
- - 334 Tons per Year (-79%) Particulate
- Hudson School
 - 16.5% reduced to 8.3% Elemental Carbon in PM10
 - 11.5 ug/m³ (1998) reduced to 6 ug/m³ (2000) (-48%)

Port Air Pollution Sources: The Emission Control Challenge

- Mobile Sources
 - Ships
 - Locomotives
 - Trucks
 - Yard Equipment
- Jurisdiction
 - Federal Sources
 - State Sources
- The Issues
 - International Trade
 - Interstate Transportation



Port Air Pollution Sources – Marine Vessels



- Enormous Pollution Source
- > 1/5 of All Pollution Emitted By Cars in the So Coast Region
- = Total NO_x of Top 300 Stationary Sources
- Bunker Fuel
 - 20,000 ppm Sulfur
 - > 40 x Dirtier than Trucks
 - Trucks 500 ppm to (soon) 15 ppm



Port Air Pollution Sources – Marine Vessels

- Ship NO_x Emissions
 - Ocean-going 33 tpd
 - Harbor-related 11 tpd
 - Transiting 2 tpd
 - El Segundo 0.5 tpd
- Ocean-Going Ship Emissions
 - Cruise 52%
 - Hotelling 39%
 - Maneuvering 8%



Port Air Pollution Sources – Marine Vessels

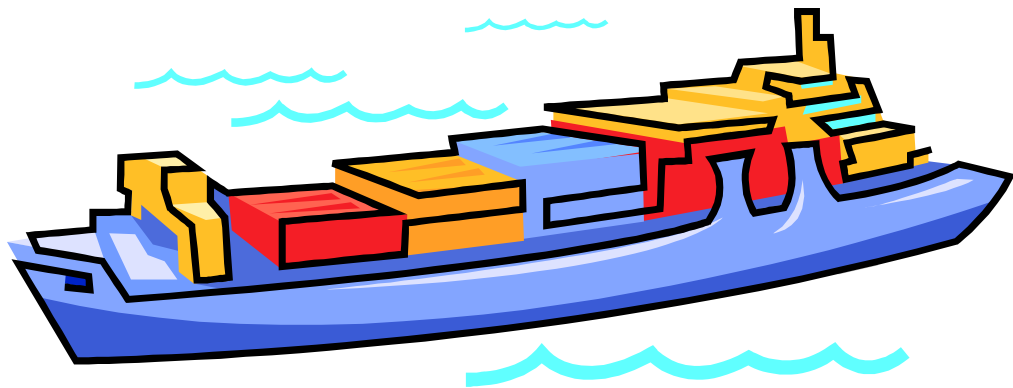
- 15 to 20 Ships per Day in San Pedro Bay Ports
- 4 Tons NO_x / Cargo Ship
 - Dock through Departure
- Each Ship = 1 to 2 Refineries

	tpy	tpd
AES Alamos	1462	4
Chevron	1262	3 1/2
Reliant Etiwanda	1215	3 1/2
BP (ARCO)	1092	3
Exxon/Mobil	730	2



San Pedro Bay Ports Ocean-Going Marine Vessels

- 46% = Container Vessels (86% Foreign)
- 17% = Bulk (100% Foreign)
- 15% = Tankers (50% USA)



Smoking Ship Enforcement Program

	# Inspections	# Notices of Violation
2002	289	33 (11%)
2003	291	23 (8%)



Smoking Ship Violations

- January 2002 – July 2003 (48 Violations)
- 25% Solid Bulk Cargo Vessels (12)
- 23% Crude Oil Tankers (11)
- 19% Container Vessels (9)
- 17% Agricultural Vessels (8)
- 10% Dredges and Barges (5)
- 2% Passenger Ship (1)
- 4% Other Vessels (2)



Port Air Pollution Sources – Diesel Trucks

- 34,000 Trucks per Day
- 92,000 Trucks per Day in 20 Years
- 47 tpd NO_x Regionwide
- 1.4 tpd Particulate Regionwide
- Particulate Traps Reduce 85%



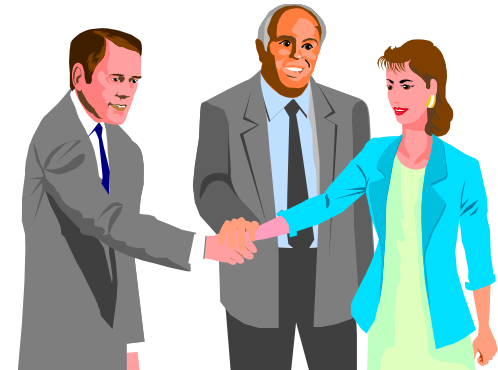
AB 2650 -- Reducing the Marine Terminal Truck Queues

- Focuses on Marine Terminal Operators
 - **Operate So Trucks Queue/Idle < 30 Minutes**
- Effective Date
 - 1/1/2003
 - 7/1/2003 If Implement Scheduling System
- Exempt if Implement Extended Hours or Scheduling System
 - 70 Hours per 5 Day Work Week --
Ports of Los Angeles and Long Beach



AB 2650 -- Implementation

- Implementation Task Force
 - Meeting Since December 2002
 - All Parties Represented (AQMD Chair)
 - MTOs & Reps – CTA – Lowenthal Staff – Truckers & Reps – Labor Reps – Shippers – Maritime Assoc – Port Reps – Environmental Group Reps – CARB – BAAQMD
 - Discuss Mechanics of Implementation
 - Clarify Compliance Requirements
 - Promote Understanding
 - Enhance Effectiveness
 - Evaluate Progress



AB 2650 Progress to Date

- Scheduling Systems Implemented at 8 of 13 Marine Terminals
 - Some Have Appointment Lanes
- 4 Marine Terminals on Extended Hours
- Over 1000 Inspection Observations in 2003
- ~50 Terminal Inspections
- ~40 Complaint Investigations
- Generally Good Compliance
- Need Increased Use of Appointments



New Regulatory Strategies

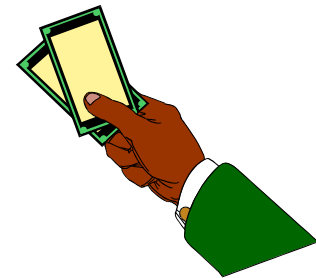
- Traditional
 - Command and Control
 - Permitted Equipment
 - Source Specific Rules
- New Approaches
 - Market-Based / Emissions Trading Programs
 - Criteria Pollutants - RECLAIM
 - Intercredit Trading / Area Source Credits
 - Mobile Source Credits
 - Incentivize Reductions at Otherwise Unregulated Sources
 - Rule 1631 Marine Vessels





Rule 1631 Pilot Credit Generation Program

- Marine Vessels
- Voluntary Repowering or Engine Remanufacturing
- Diesel-Fueled Captive Vessels
 - Tugboats
 - Passenger Ferries
 - Fishing Vessels
- Projects Generate NO_x MSERCs
 - Can Convert to RECLAIM Trading Credits (RTCs)
- Catalina Express
 - 120 lb NO_x Reduced per Round Trip
 - 16 Round Trips = 1 Ton NO_x Reduction



2003 AQMP

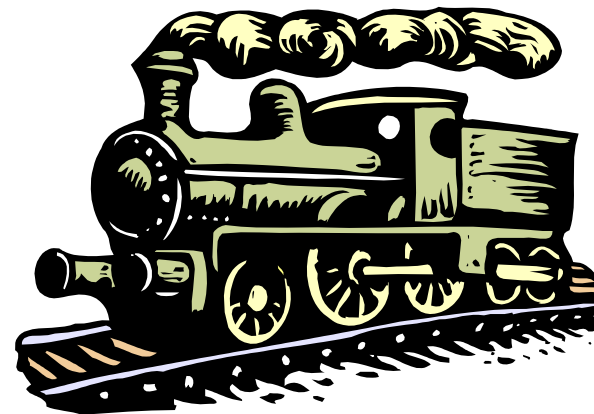
Port Long-Term Control Strategies

- Port Emission Control Feasibility Studies
 - Cold Ironing for Ships at Berth
 - Yard Tractor Fleet Rule (Ports and Warehouses)
 - On-Road Heavy Duty Diesel Truck Retrofits
 - Crane Electrification
 - Low Sulfur Diesel for Ships at Ports
 - Low Emission Switch Locomotives in Port Yards
 - Port “Bubble”



Pursue Emission Reductions from “Federal” Sources

- Marine Vessels
- Locomotives
 - Cost Effective Control Available
 - SB 1397 (Escutia)
 - “Fair Share” Emission Reduction Concept
 - Authorize Locomotive Emission Reduction or Mitigation Program
 - Example: Grade Separation Improvements to Minimize Vehicle Idling
 - Proposed Legislation Public Hearing April 16, 2004, 2:00 pm
 - Norwalk Arts and Sport Complex, 13000 Clarkdale Avenue





www.aqmd.gov

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