



Update on California's Strategies to Reduce Emissions from Maritime Ports

February 24, 2005



California Environmental Protection Agency

Air Resources Board

Overview

- ◆ Need for Action
- ◆ Maritime Emissions
- ◆ California's Strategy





Need for Action

California is Major Gateway to Global Trade

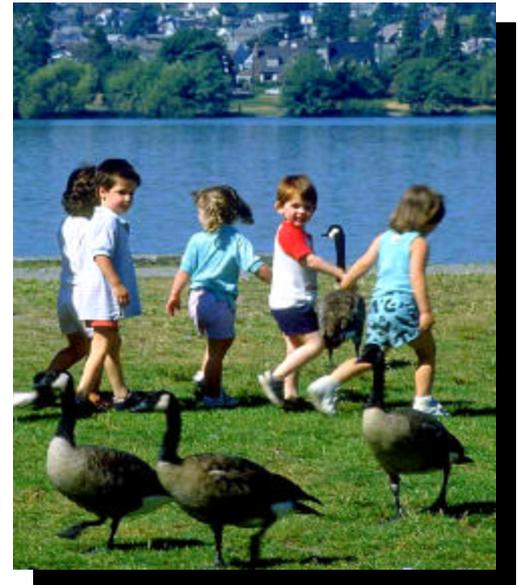


Future Trends

- ◆ Dramatic increase in trade
- ◆ More goods movement emissions overall
- ◆ Localized impact on nearby communities

Public Health Imperative

- ◆ Port emissions are substantial
- ◆ Will prevent attainment if not addressed
- ◆ Localized exposure & risk are a major concern
- ◆ Climate change impacts also need attention



Maritime Emissions



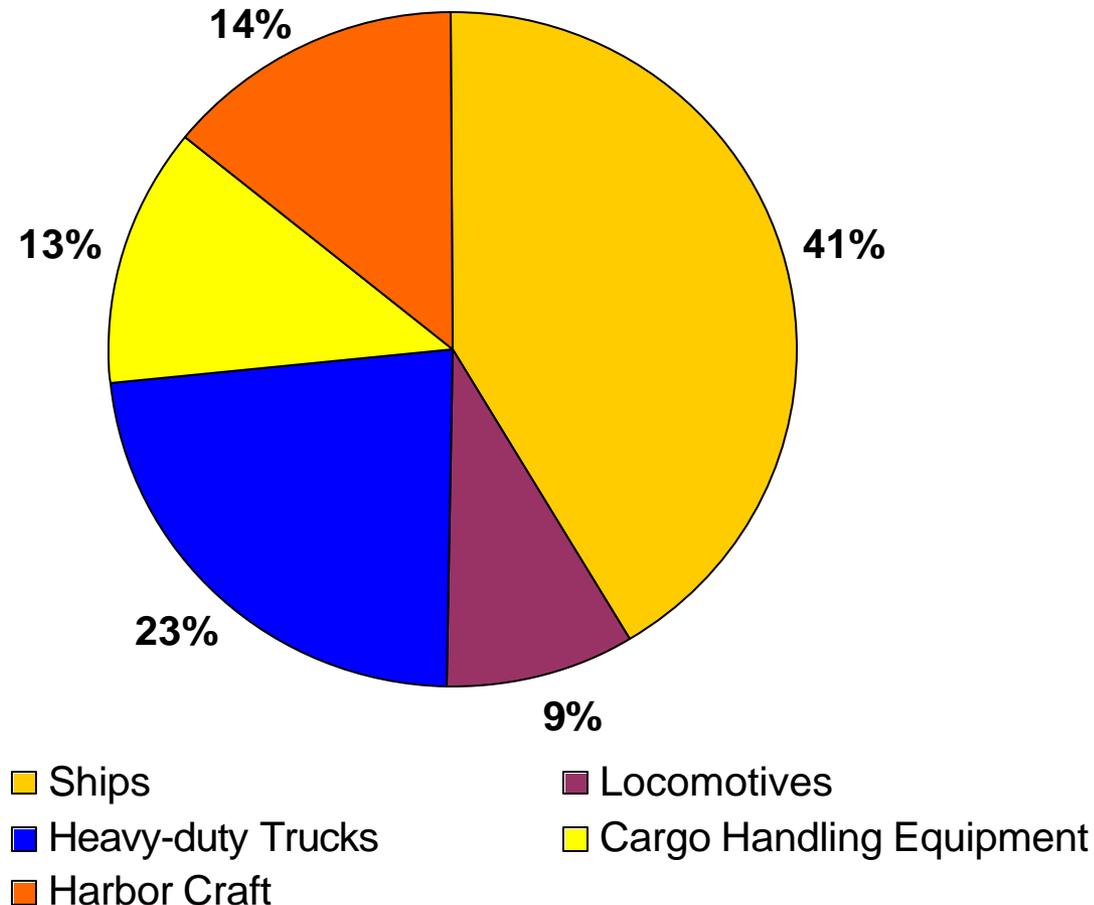
Emissions from Maritime Operations

- ◆ On-Road Heavy-Duty Diesel Trucks
- ◆ Land-based cargo handling and support equipment
- ◆ Ships and Harbor Craft
- ◆ Locomotives

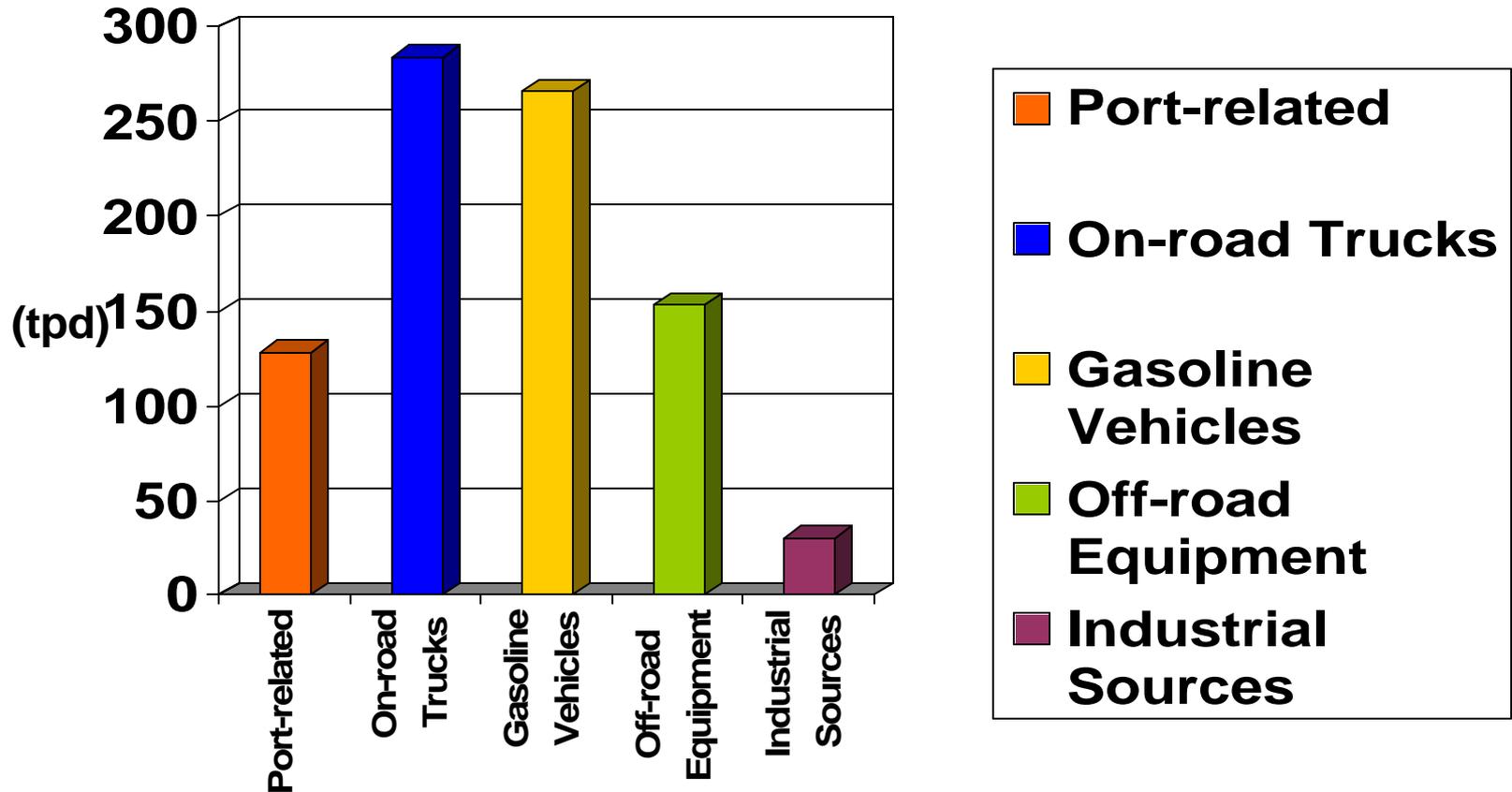


Principle Emission Sources Ports of Los Angeles and Long Beach

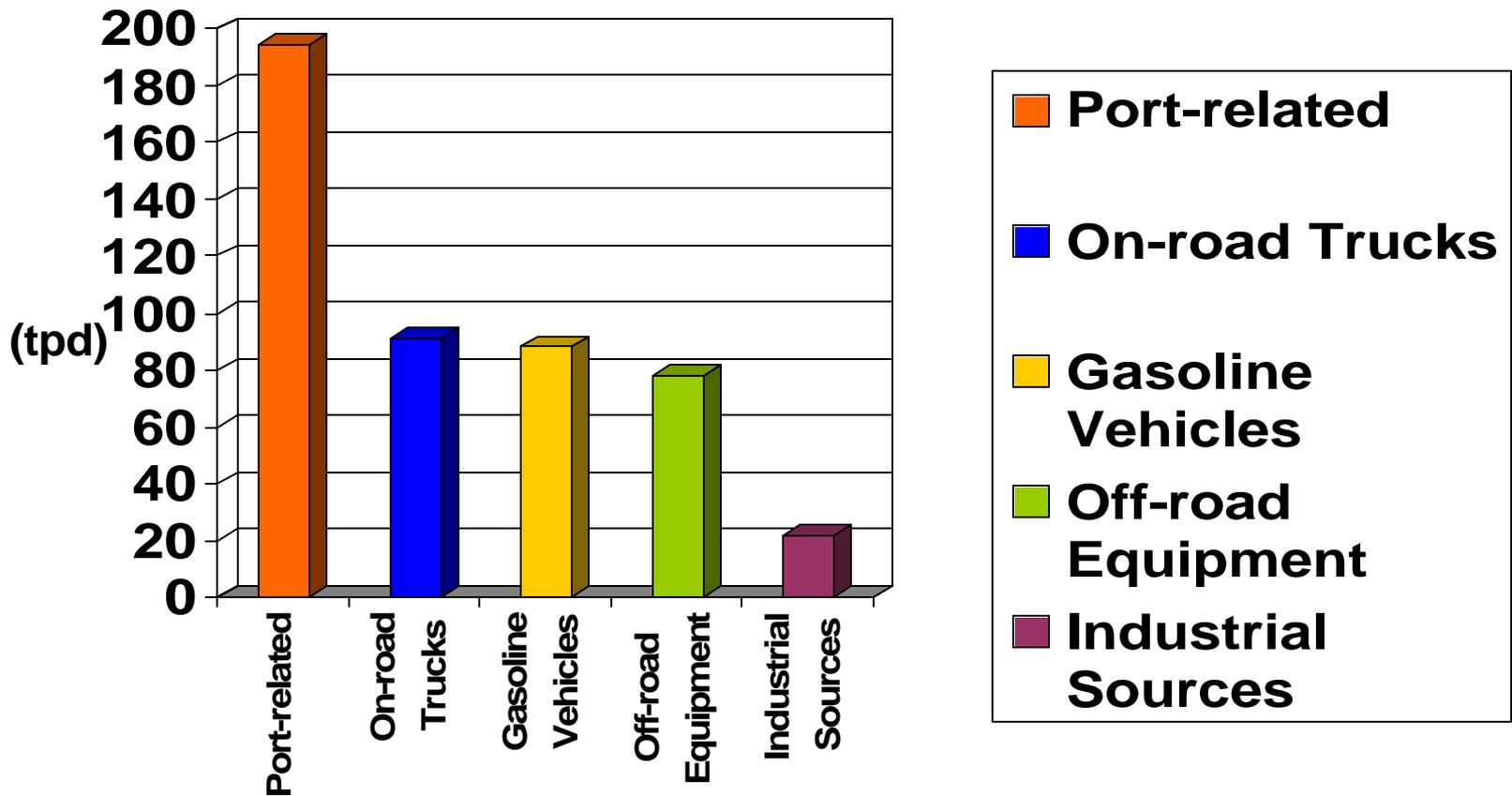
Percent Contribution to 2001 NOx Emissions



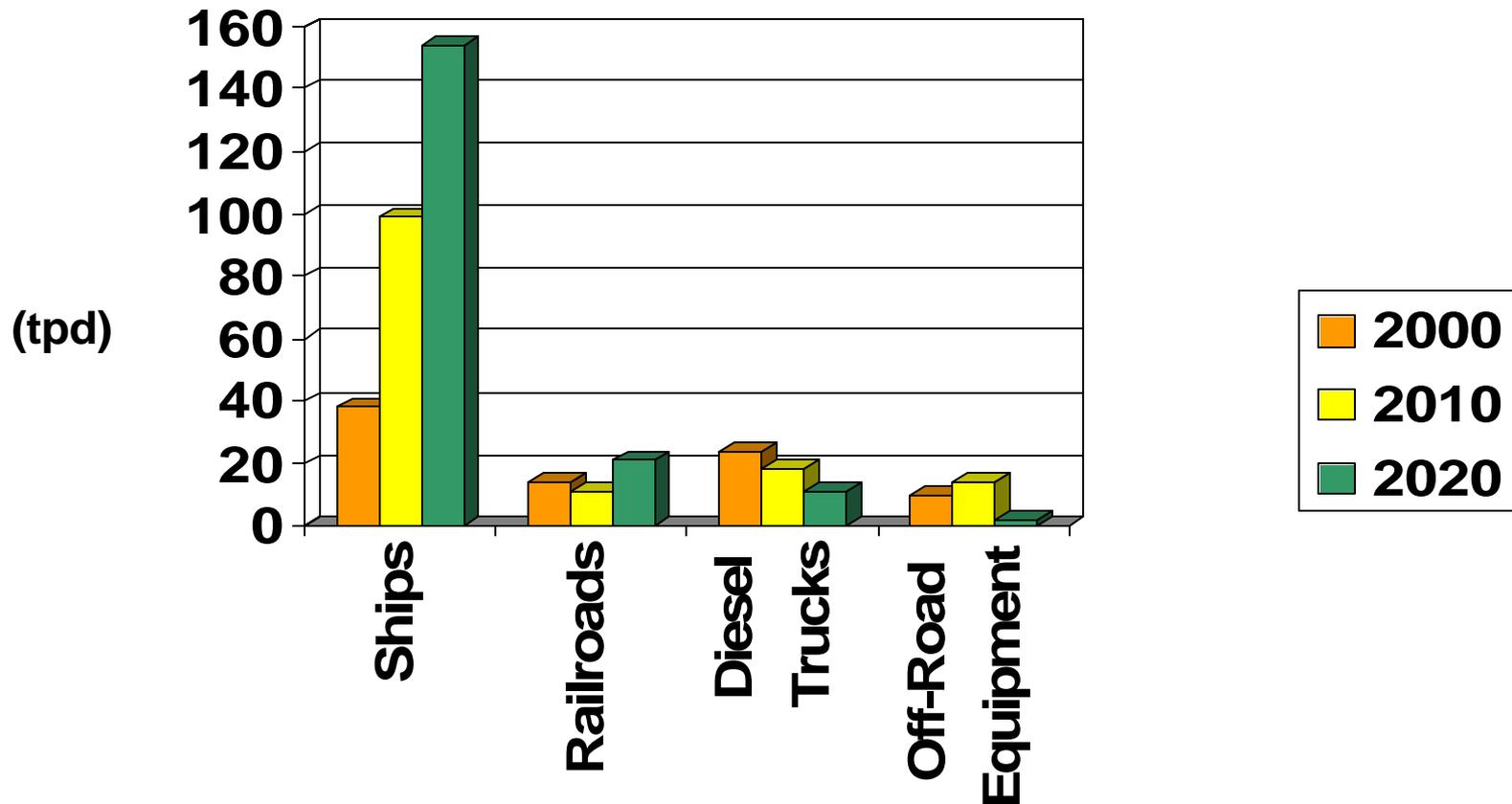
2005 NO_x Emissions In the South Coast Air Basin from a Variety of Sources



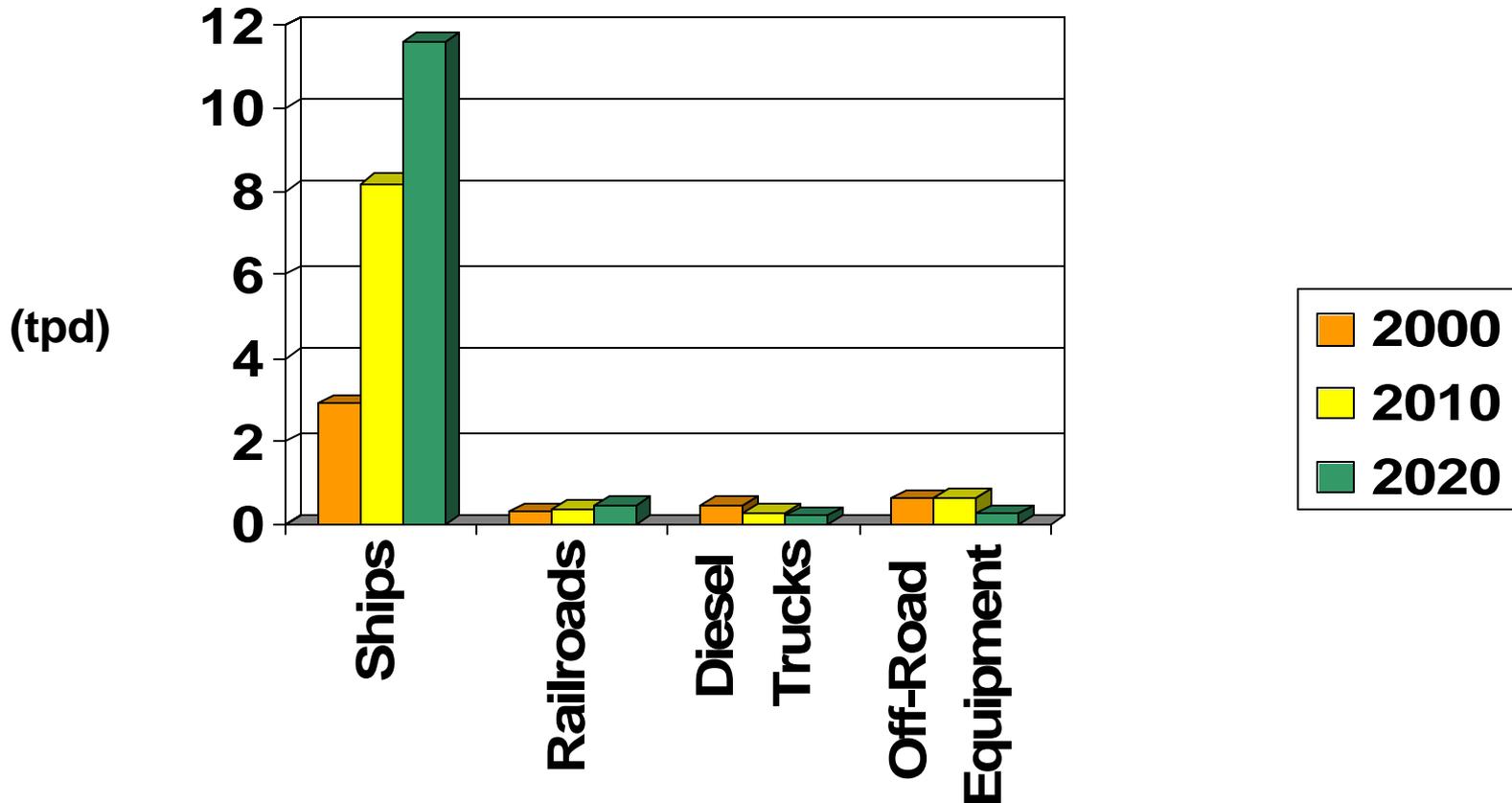
2020 NOx Emissions In the South Coast Air Basin from a Variety of Sources



NOx Emission Trends for Various Port-related Sources In the South Coast Air Basin

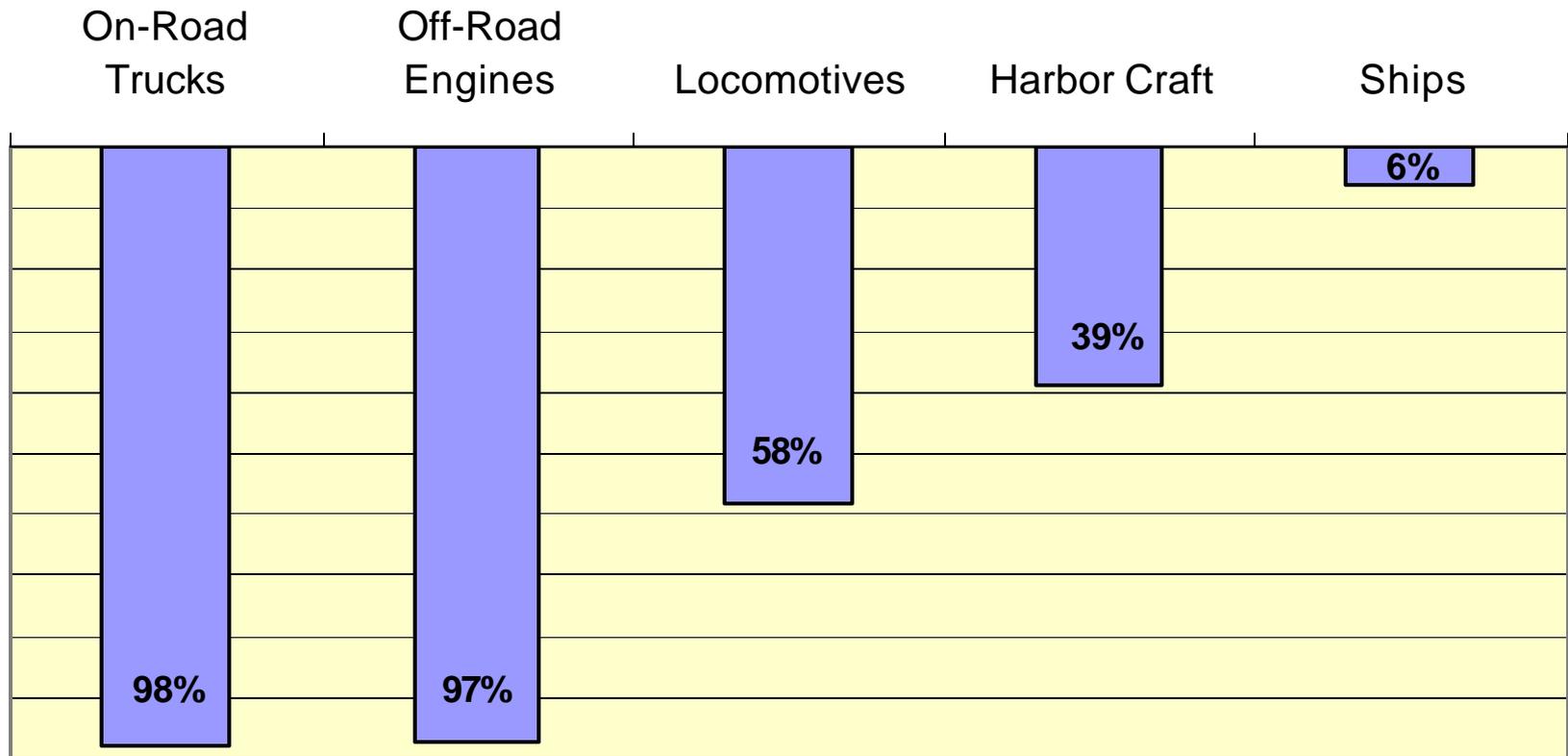


PM Emission Trends for Various Port-related Sources In the South Coast Air Basin



Effect of Adopted Rules in Reducing NOx Emissions From New Engines

(Percent Reduction Based on Adopted New Engine Standards)





California's Strategy

California's Framework for Air Quality Improvement

- ◆ Governor's Commitment to Reduce Port Related Emissions
- ◆ Diesel Risk Reduction Plan
 - 85% reduction in diesel PM by 2020
- ◆ State Implementation Plan
 - Blueprint for meeting federal air quality standards
- ◆ Governor's Environmental Action Plan
 - 50% reduction in emissions by 2010
- ◆ Environmental Justice and Community Health



Reducing Port Related Air Quality Impacts Will Require:

- ◆ Effective new engine standards
- ◆ Clean fuels for all sectors
- ◆ Program to modernize in-use fleets
- ◆ Improving efficiencies
- ◆ Increased incentive funding

Current Strategy for Ocean-Going Ships

◆ International & Federal New Engine Standards

- United States needs to ratify Annex VI
- States, USEPA pushing IMO for more stringent standards
- USEPA committed to more stringent standards for US flagged ships in 2007

◆ Cleaner Fuels

- ARB rule for cleaner fuels in auxiliary engines (2005)
- Additional requirements for frequent visitors (2006)
- Sulfur Emission Control Area designation

◆ In-Use Strategies

- Continue VSR MOU
- Exploring MOU to achieve additional in-use reductions
- Cold-ironing study
- Ship water emulsion demonstration
- Restrictions on cruise ship incineration



Current Strategy for Cargo Handling Equipment

- ◆ Port sponsored voluntary programs
- ◆ Cargo handling equipment rule for ports and intermodal rail facilities (2005)
 - Statewide rule
 - Address equipment used to load and unload containers, dry bulk, etc.
 - Preliminary regulatory concepts include using Best Available Control Technology



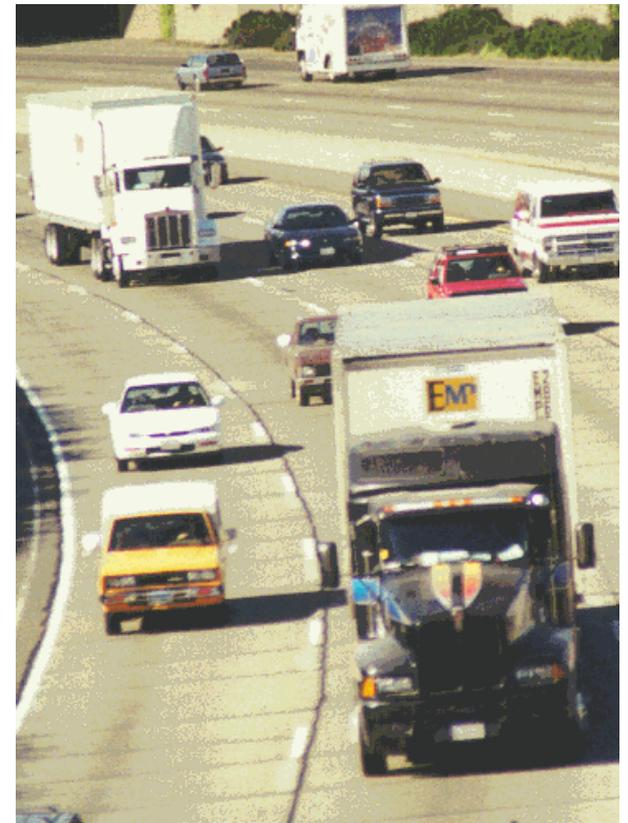
Current Strategy for Harbor Craft

- ◆ **Federal New Engine Standards**
 - ARB seeking aftertreatment based standards in pending federal rulemaking
- ◆ **Cleaner Fuels**
 - ARB adopted rule in 2004 requiring use of California on-road diesel fuel in captive harbor craft
- ◆ **In-Use Strategies**
 - Proposed ARB regulation requiring clean-up of in-use harbor craft (2005)
 - Continued Carl Moyer funding of vessel repowers



Current Strategy for On-Road Trucks

- ◆ Clean up new trucks
 - Truck Idling Restrictions
 - Mfr. In-use testing
- ◆ Existing on-road vehicles
 - Target Incentive Programs for Port Trucks
 - Diesel In-Use Fleet Rules (2006-2007)
- ◆ Community-based truck inspections



Current Strategy for Locomotives

- ◆ **Federal New Engine Standards**
 - EPA's rulemaking underway, ARB commented Aug 04
- ◆ **Cleaner Fuels**
 - ARB adopted rule in 2004 requiring captive locomotives requiring use of California on-road diesel fuel
- ◆ **In-Use Strategies**
 - Reduced idling
 - Accelerate turn-over of older engines
 - MOU
 - ARB also encouraging U.S. EPA to pursue more stringent standards for in-use locomotives



Additional Efforts Regarding Ports

- ◆ Comprehensive Statewide Port and Rail Yard Emission Reduction Plan (2005)
- ◆ Inventory Development
- ◆ Health Risk Assessments for Nearby Communities



Current California Outreach/Collaboration Efforts

- ◆ Cal-EPA & BTH Goods Movement Effort
- ◆ POLA No Net Increase Taskforce
- ◆ Maritime Working Group
- ◆ West Coast Diesel Collaborative
- ◆ Multi-state staff coordination
- ◆ Technical Conferences

Conclusion

- ◆ Goods movement through California's maritime ports impact air quality
- ◆ Port emissions are a multi-modal problem and require multi-faceted solutions
- ◆ Progress has been made and additional efforts underway to reduce emissions
- ◆ Further improvements imminent if we keep working together . . .

