2007 South Coast AQMP Ozone & PM2.5 Control Strategy

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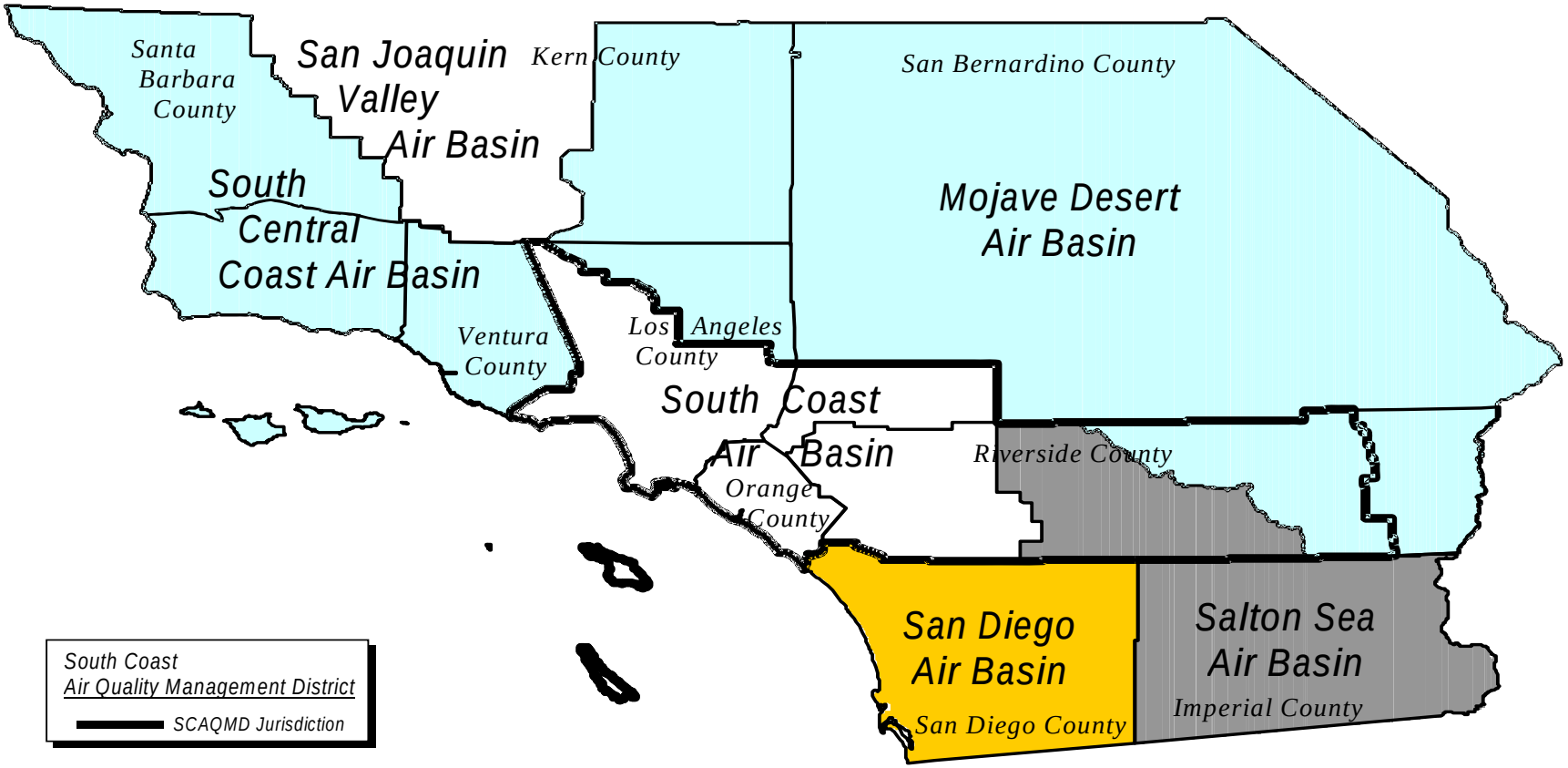
Clearing The Air
Riverside, California
May 22, 2008

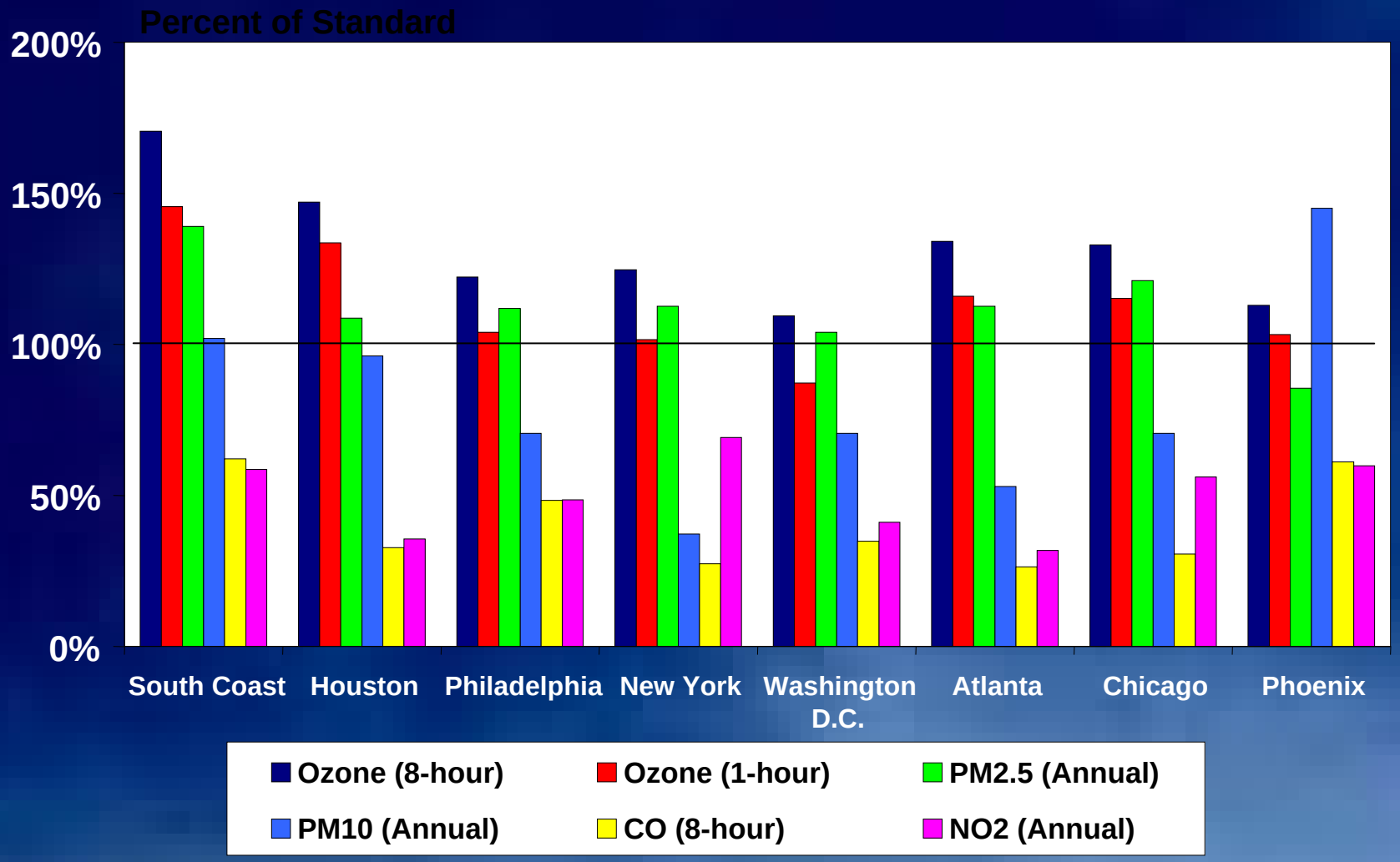
2007 AQMP

- Blue Print of Regional Attainment Strategy
  - O_3 (8-Hr) – 008 ppm (2024)
  - PM2.5 (Annual Avg.) - 15 mg/m^3 (2015)
- Multi-Agency Effort
  - SCAQMD
  - CARB
  - EPA
  - SCAG

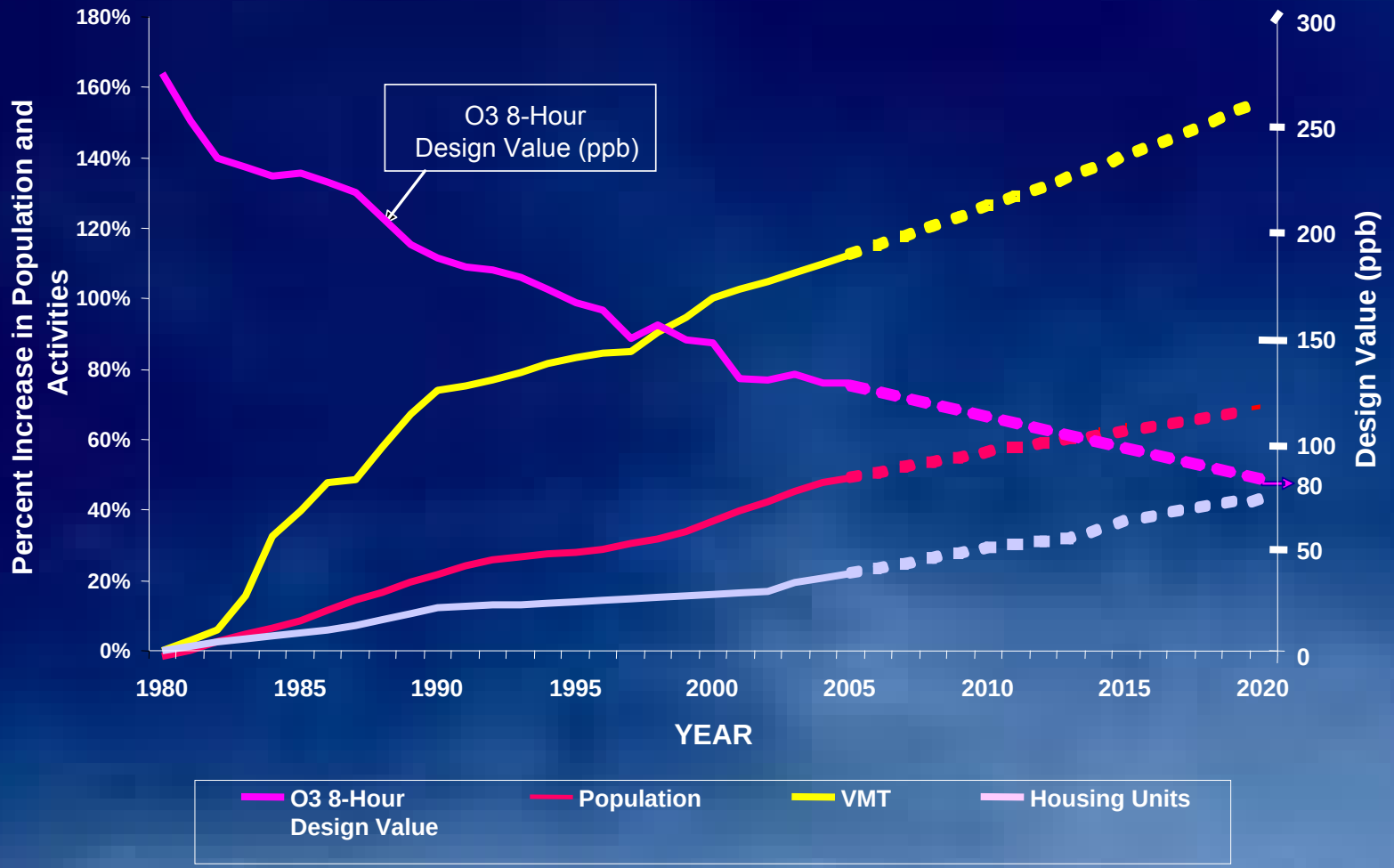
Boundaries of the South Coast Air Quality Management District and Federal Planning Areas



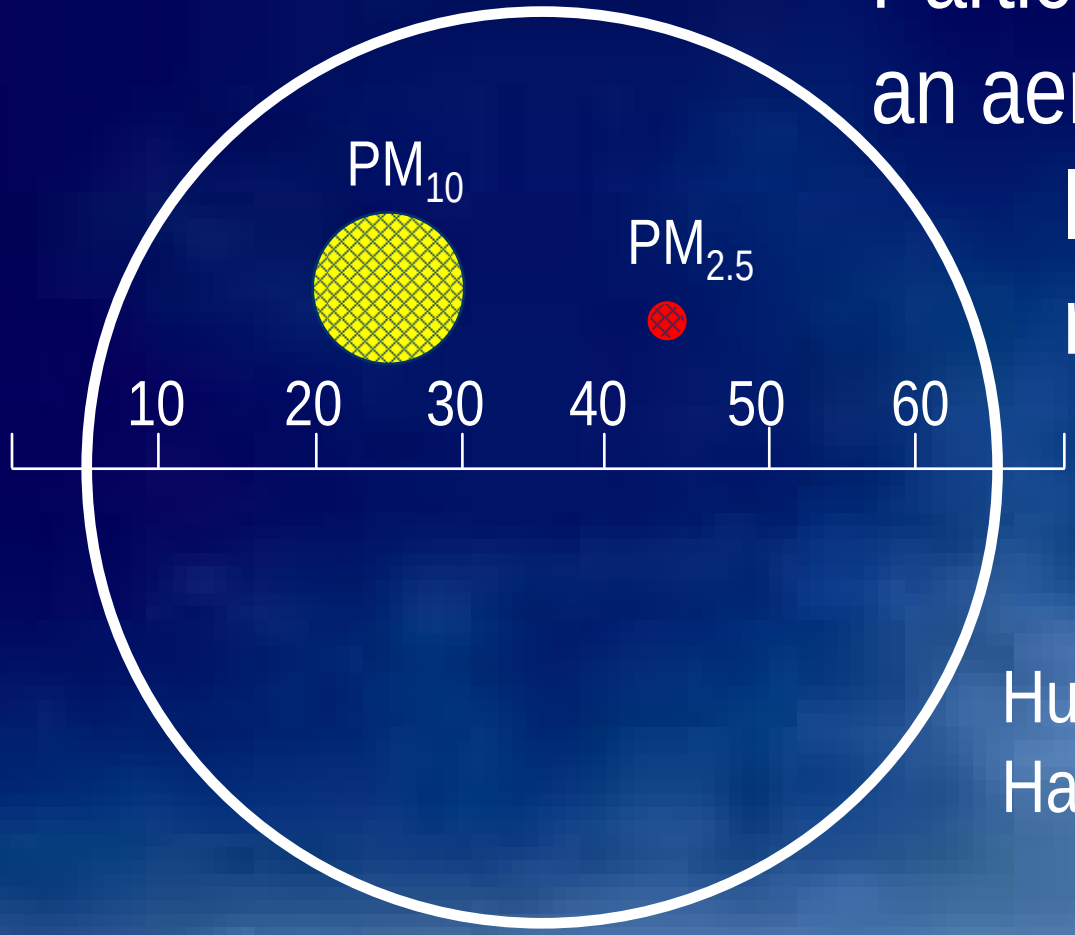
2005 South Coast Air Basin Quality Compared to Other U.S. Cities



Demographic Projections and Ozone Air Quality Trend



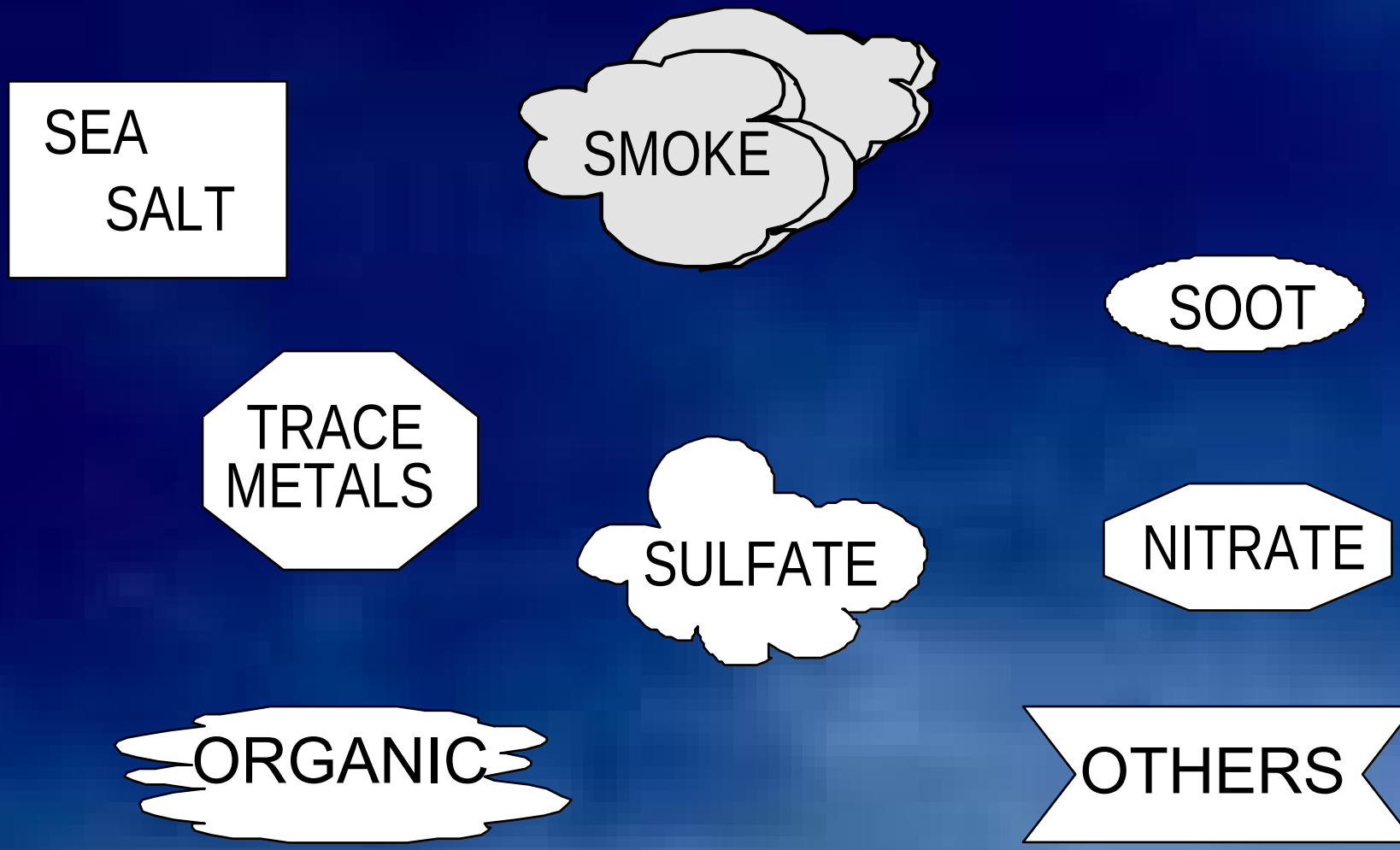
What is PM2.5?



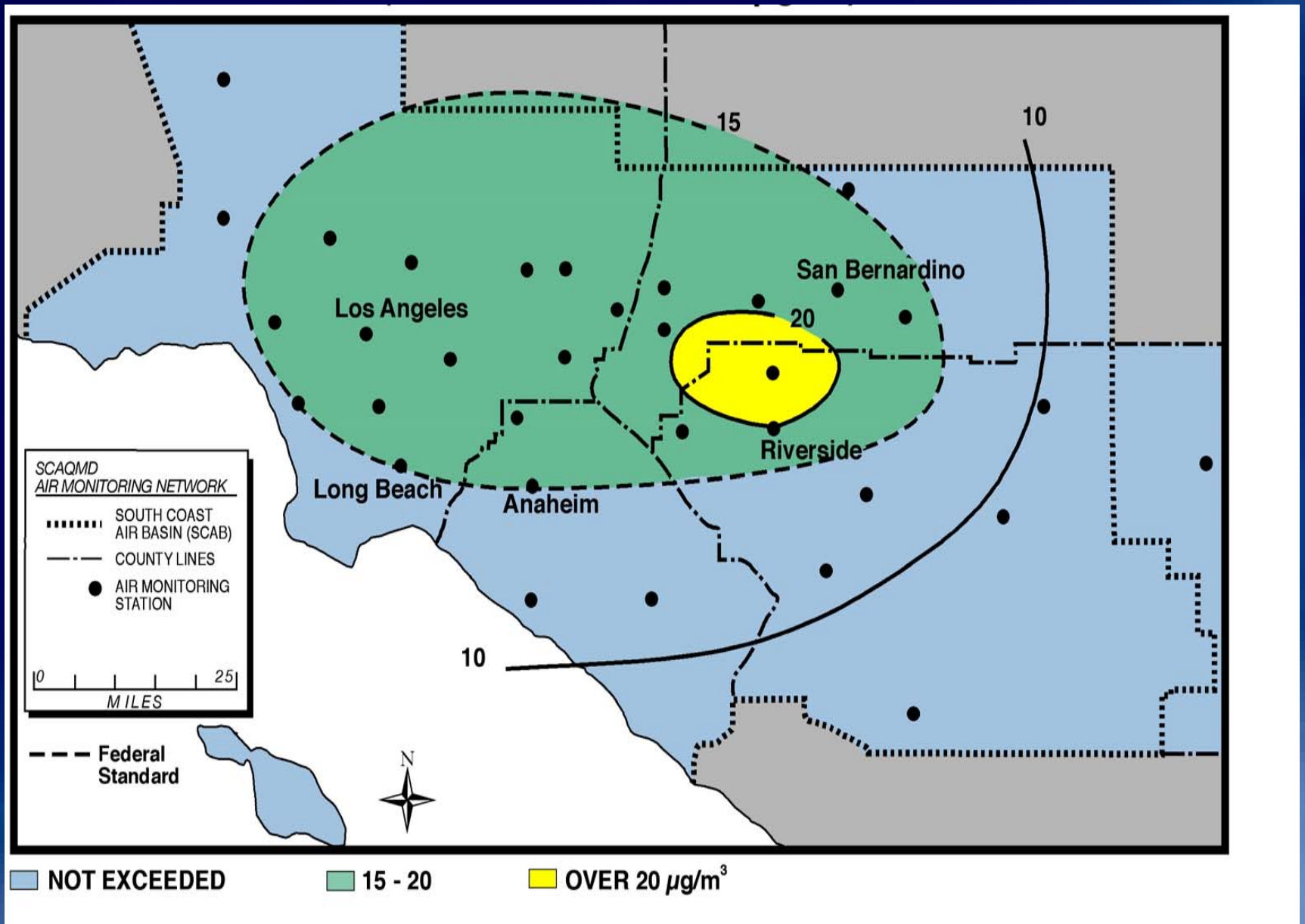
Particulate Matter with an aerodynamic diameter less than 2.5 microns

Human Hair

Sources of Particulate Matter (PM)

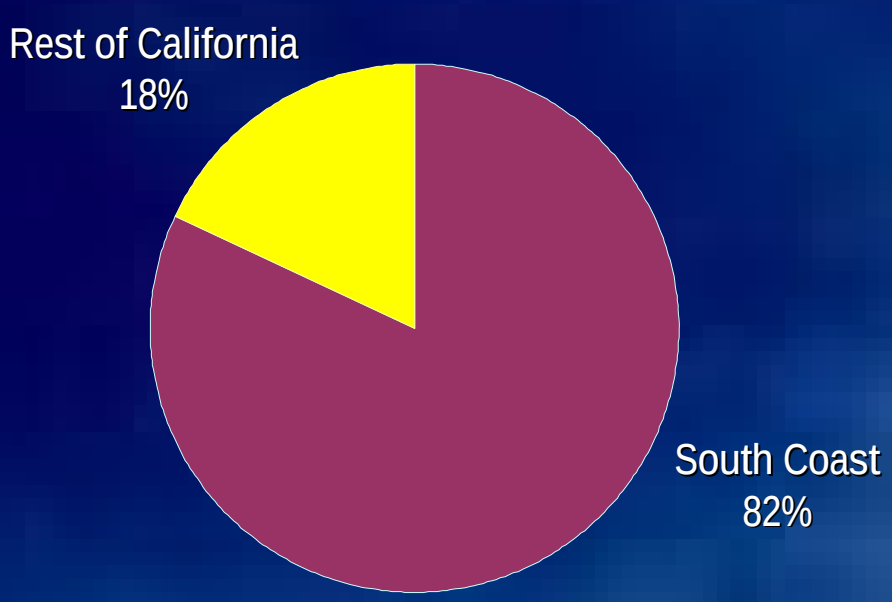


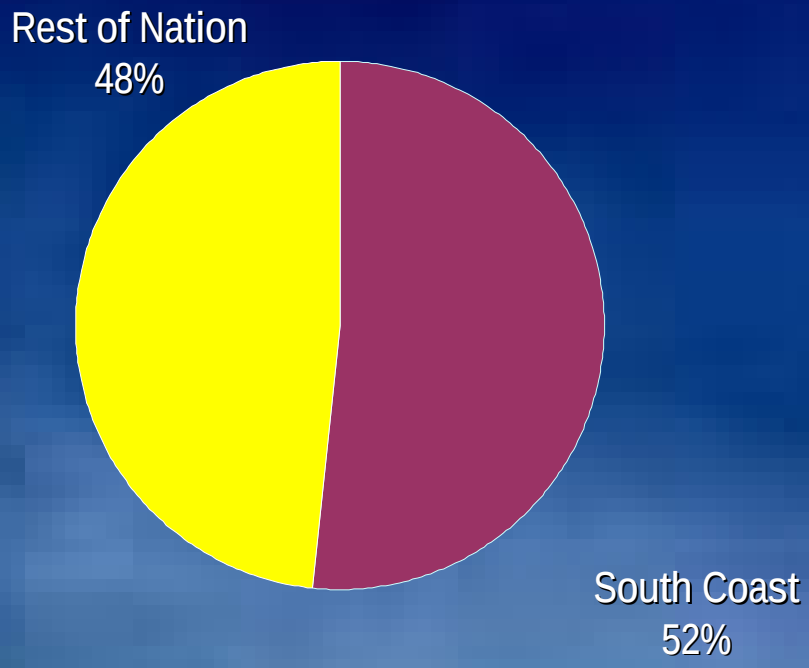
2005 Annual Average PM2.5 Concentration



PM2.5 Disproportionate Exposure South Coast Air Basin

Population-Weighted Exposure Above NAAQS Based on 2000-2002 AIRS Data





Source: California Air Resources Board

Recent CARB Assessment of PM Health Effects

SCAB Cases/Year due to PM2.5 *

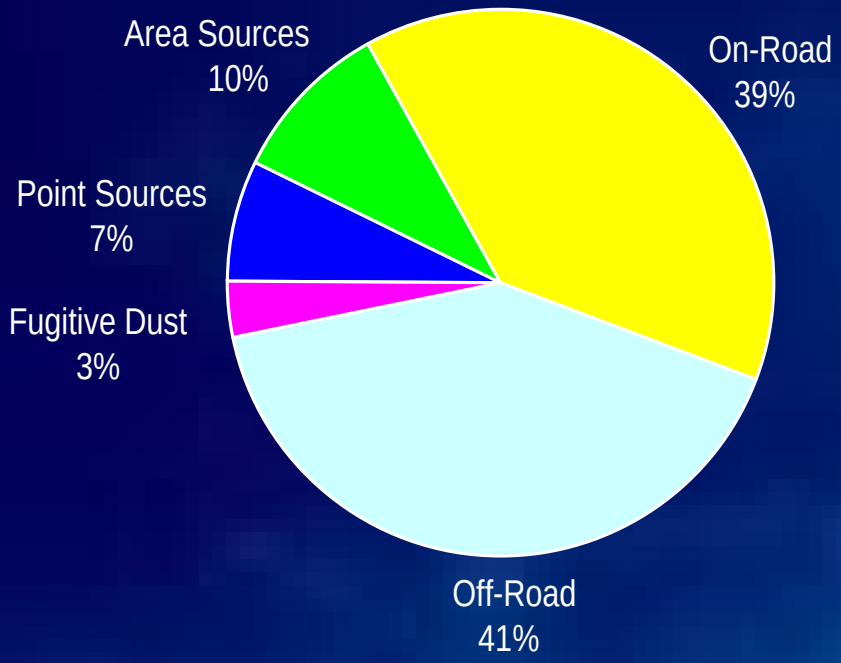
Premature Deaths	5,400
Hospitalizations	2,400
Asthma & Lower Respiratory Symptoms	140,000
Lost Work Days	980,000
Minor Restricted Activity Days	5,000,000

*1999-2000 Air Quality Data

Source: California Air Resources Board

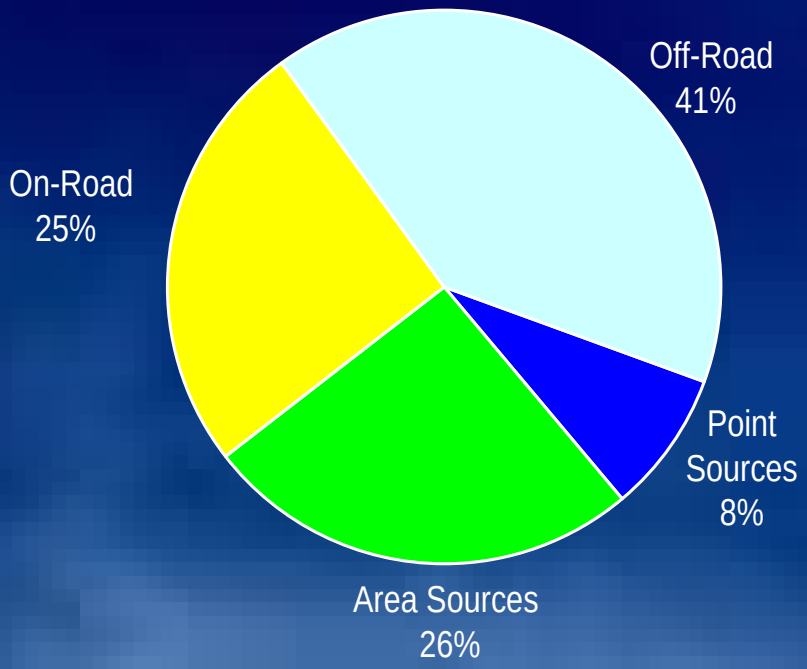
Emissions by Major Category SCAQMD

PM2.5, 2014



(NOx, SOx, PM2.5)

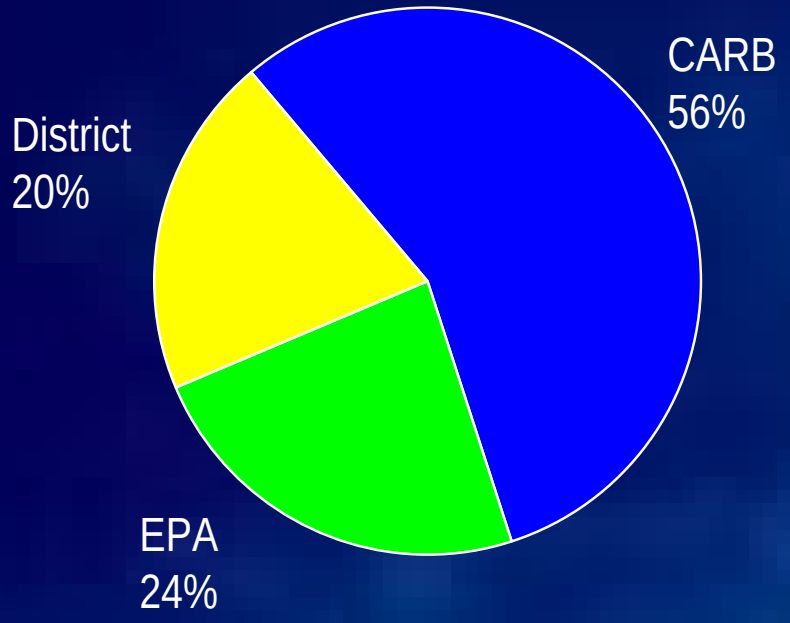
8-Hr Ozone, 2023



(VOC, NOx)

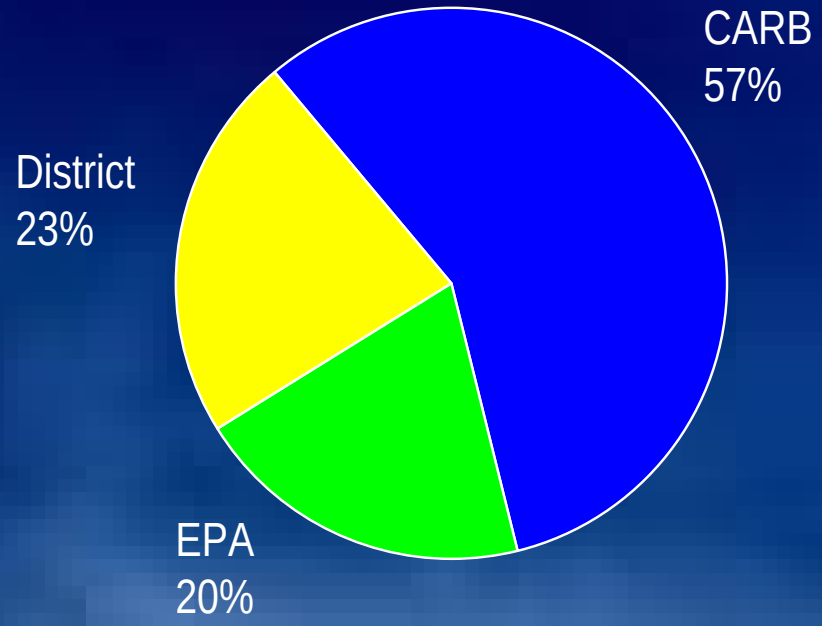
Primary Emissions Responsibility by Agency

PM2.5, 2014



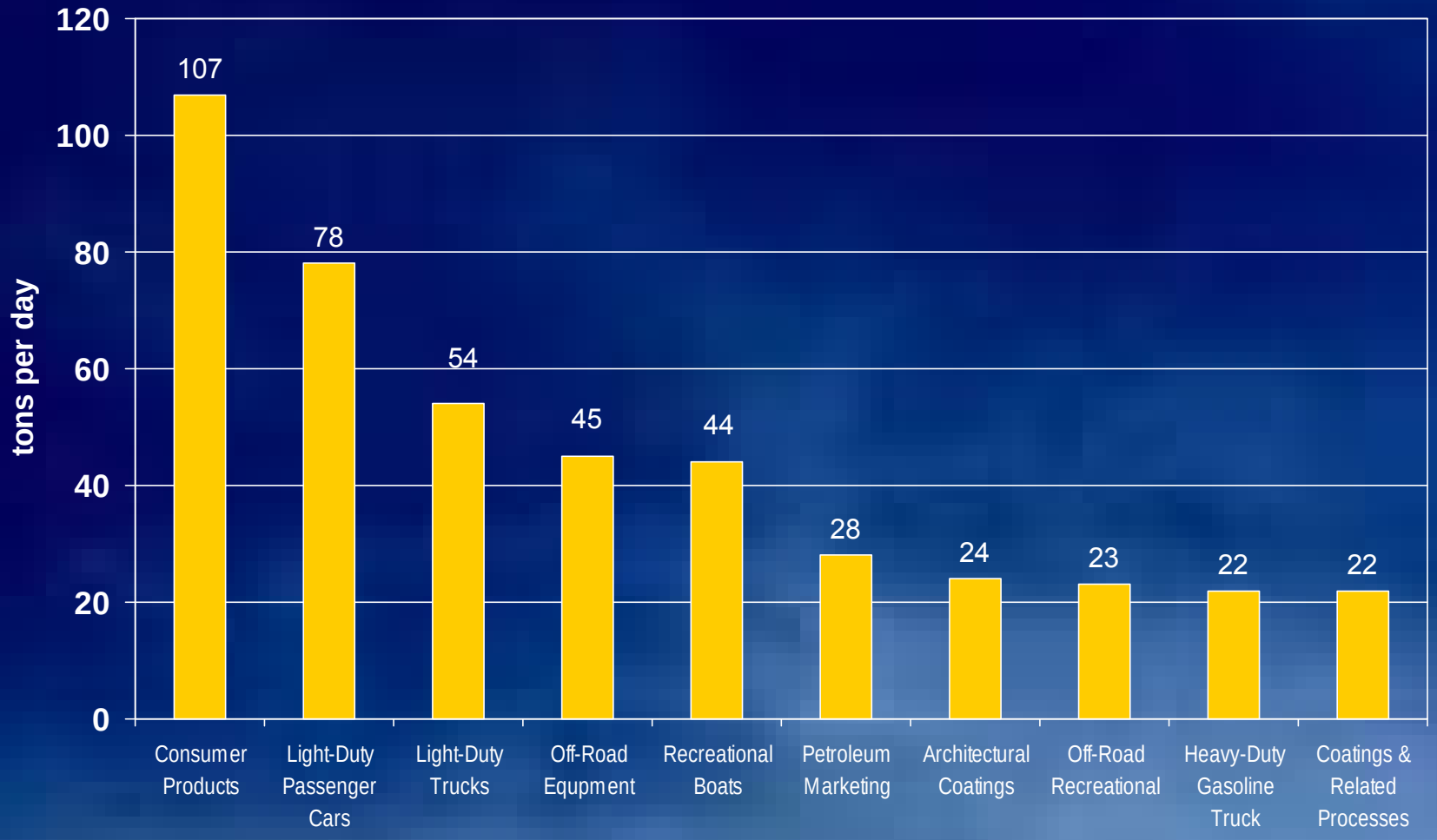
(NOx, SOx, PM2.5)

8-Hr Ozone, 2023

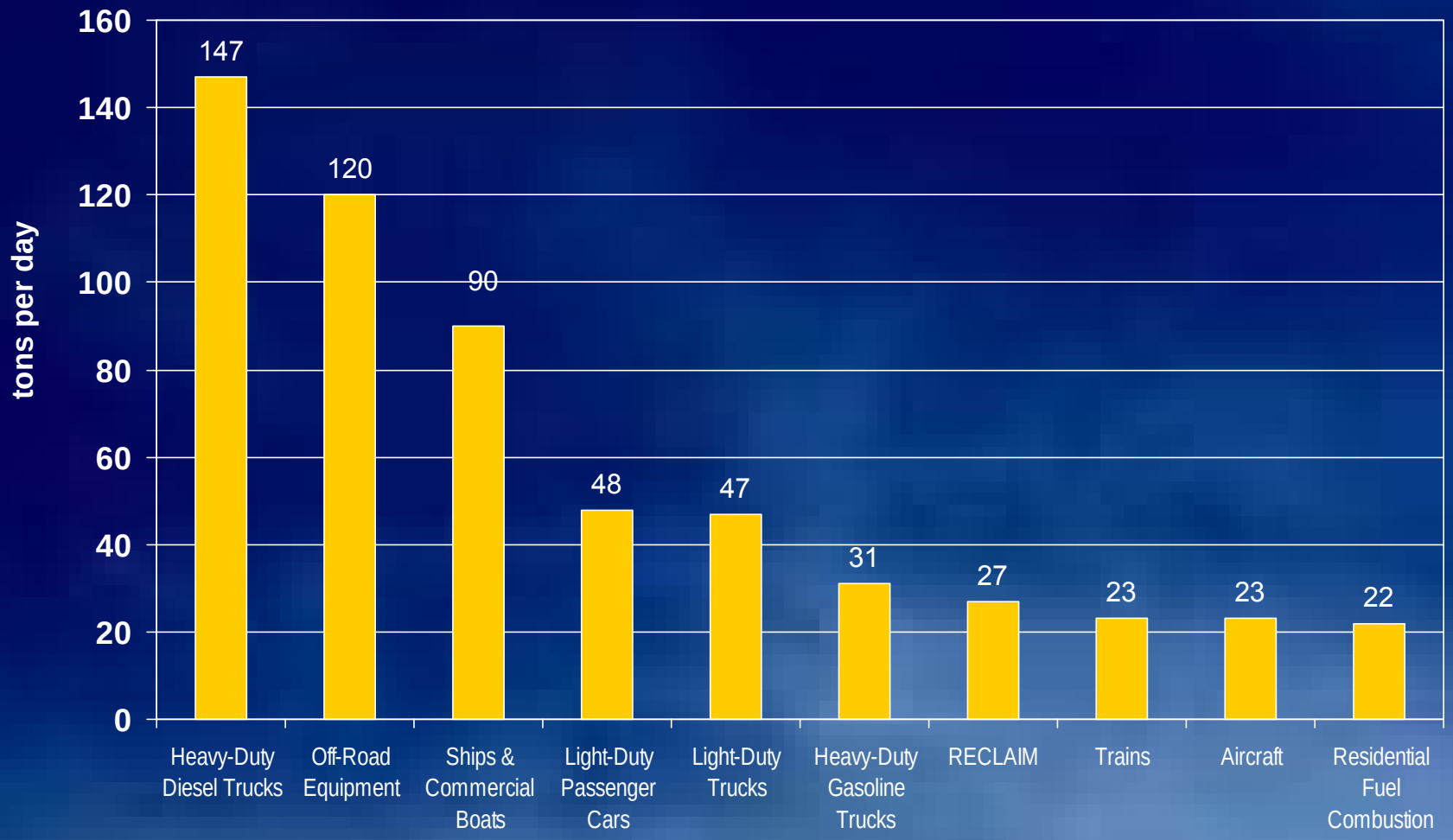


(VOC, NOx)

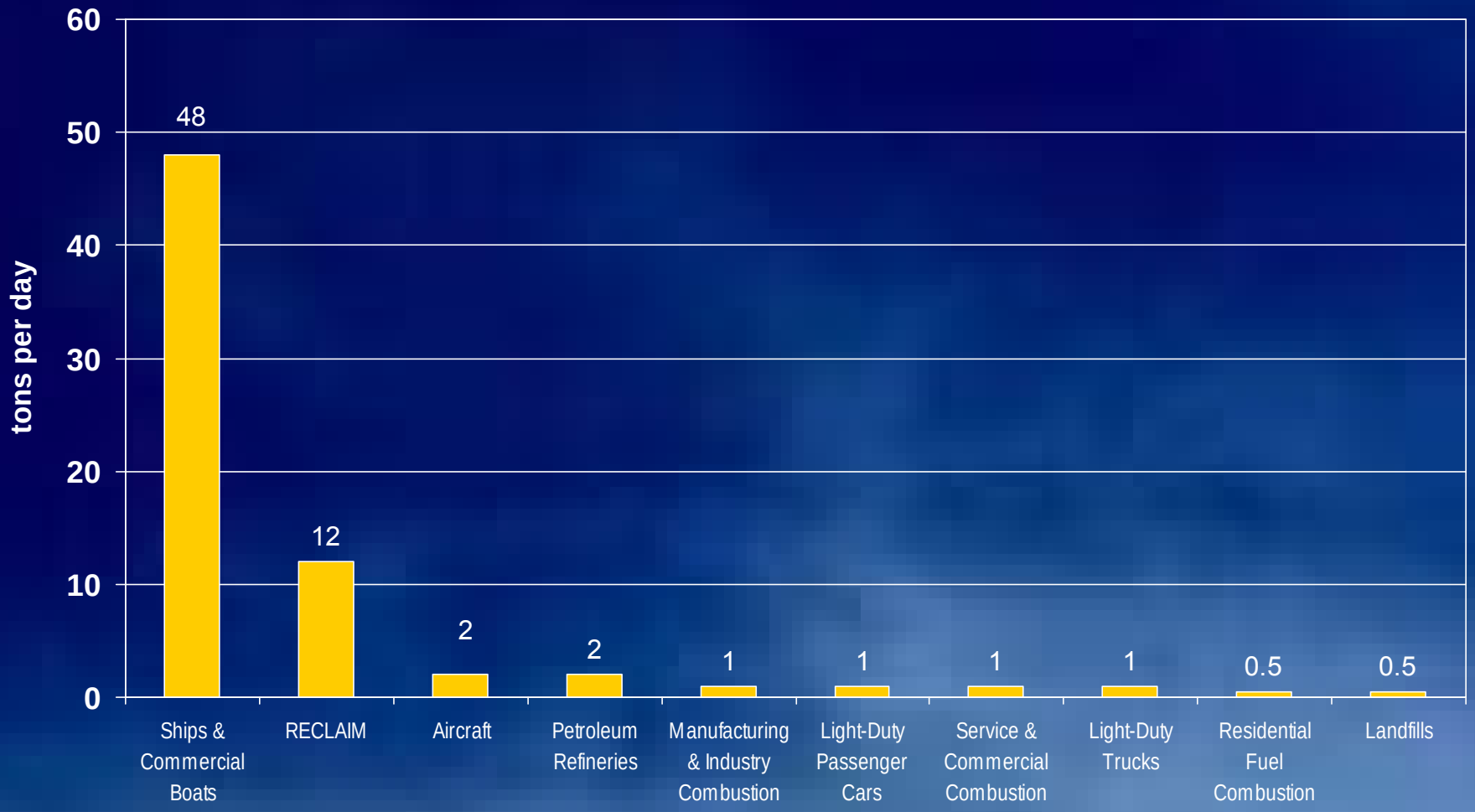
VOC Annual Average Emissions 2014



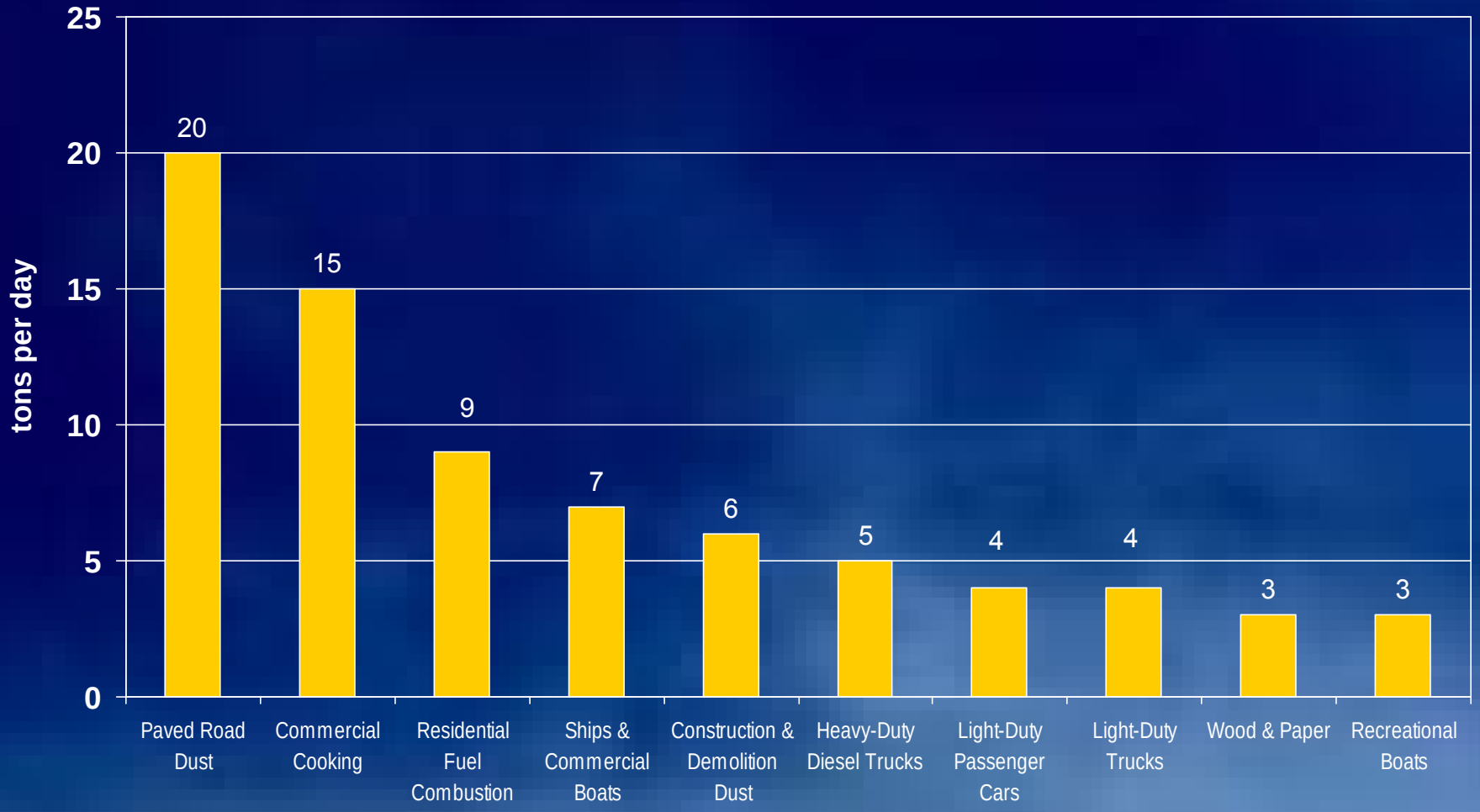
NOx Annual Average Emissions 2014



SOx Annual Average Emissions 2014



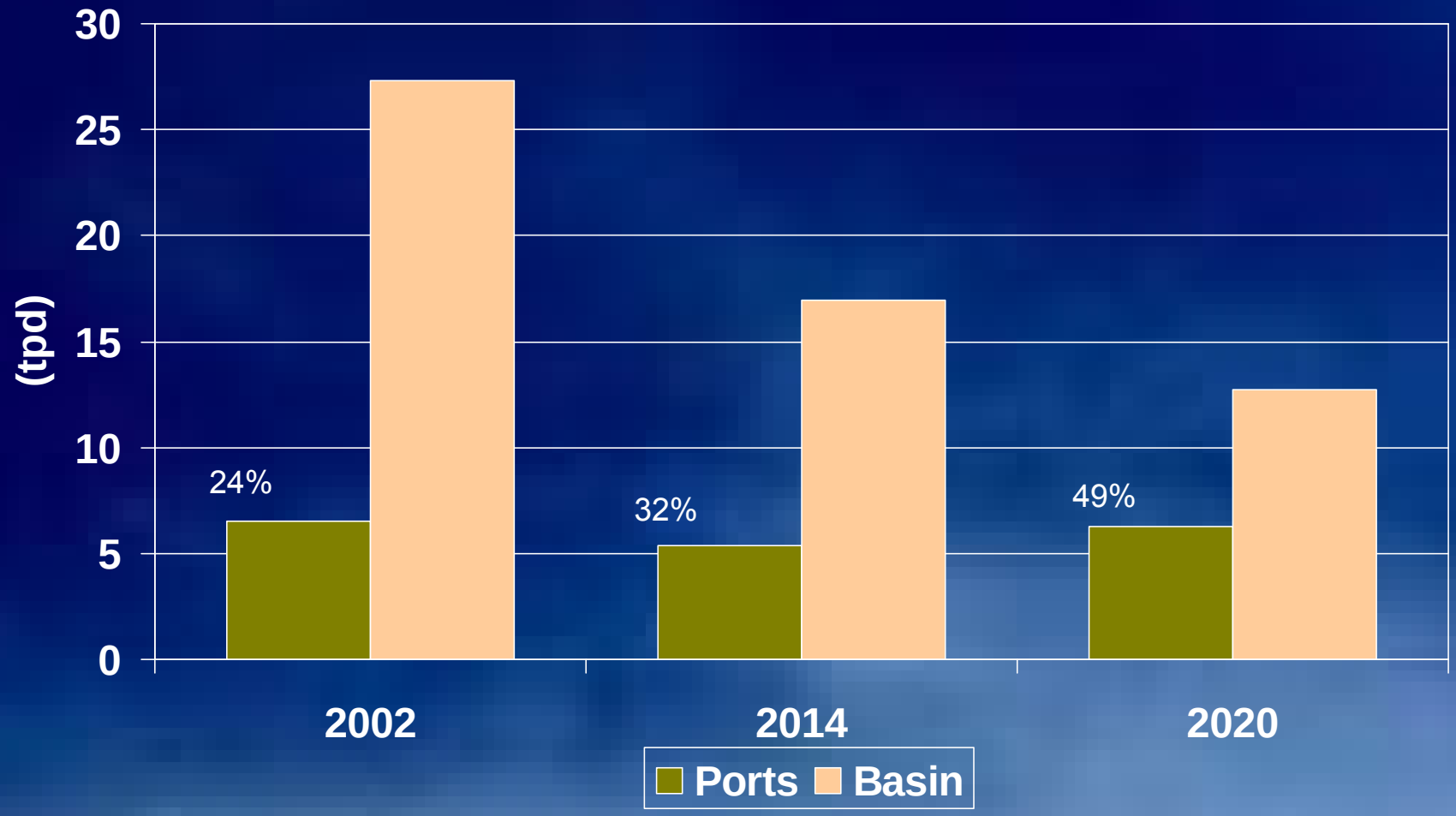
Directly Emitted PM2.5 Annual Average Emissions-2014



Goods Movement Growth 2001-2020

- 300 % increase in cargo through the ports
- 170% increase in truck travel
- 150% increase in rail cargo

Contribution of Port-Related Sources to Regional Diesel PM



Design Principles

- Expeditious Progress
- Meet Attainment Deadlines
- Minimize Cost Impacts to Degree Practicable
- All Feasible Measure and Promote Fair Share Responsibility Among Sister Agencies

Control Strategy Design

- Step I
  - Maximum controls of SOx and directly emitted PM2.5
  - Necessary NOx controls
  - Modest VOC controls to ensure progress toward ozone attainment
- Step II
  - Continue NOx control programs
  - Necessary VOC reductions
- Attainment Demonstration
  - All grid cells
  - At or below the standards

2007 AQMP Control Strategy

- District's Stationary and Mobile Source Control Measures
- State and Federal Control Measures
  - CARB's Proposed Concepts
  - District Staff's Recommended State and Federal Stationary and Mobile Source Control Measures
- SCAG's 2004 RTP/2006 RTIP
- Long-Term Strategy

Plan Summary

- Inclusive Control Strategy
  - 2015 PM2.5 Attainment
  - 2024 Ozone Attainment
- 31 - Stationary Source Measures
- 30 - Mobile Source Measures

Emissions Reductions Needed

	2014	2023
NOx	203 (29%)	383 (76%)
VOC	59 (11%)	116 (22%)
SOx	24 (56%)	---
PM2.5	14 (14%)	---

Highlights of Control Measures

- Cleaner Fuel in Ocean Going Vessels Auxiliary and Main Engines
- Ocean-Going Vessels While At Berth At A California Port
- Off-Road Engine In-use Standards
  - Local Opt-in Surplus Reductions
- In-Use On-Road Heavy-Duty Diesel Vehicles

Highlights of Control Measures (cont)

- New Development and Re-Development Projects
- Consumer Products Certification and Use Restrictions
- Facility Modernization
- Backstop Rule for Ports and Port-Related Facilities

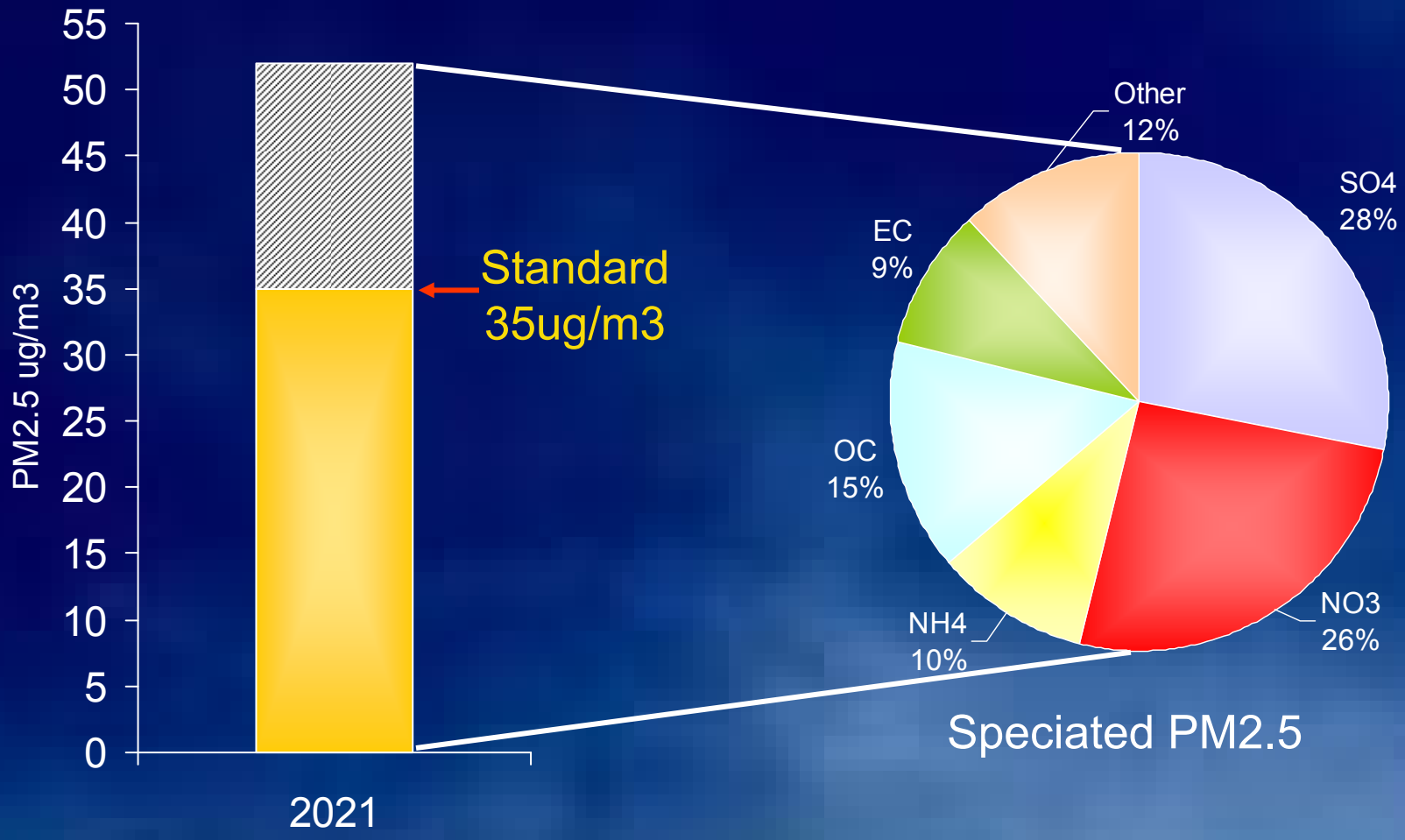
Market Incentive Programs

- Public/Private Investment to Accelerate Fleet Turnover
  - Carol Moyer Program
  - AB923
  - Prop 1B
  - Others

Challenges on the Horizon

- Revised 24-Hour PM2.5 Standard
  - 65 µg/m3 to 35 µg/m3
  - EPA designations finalized (12/2008?)
  - AQMP due three years following final designation
- Revisions to the 8-Hour Ozone Standard
  - New standard: 0.075 ppm
  - Final designations finalized (12/2010)

Predicted Maximum 24-hour PM 2.5 Concentration (2021)



Summary

- Concerted effort underway to implement 2007 AQMP control strategy
- Federal partnership needed
- New air quality standards pose significant challenge to attainment by 2020 and beyond