California Environmental Protection Agency

Air Resources Board

# State of the State's Air Quality 2005

Board Presentation

January 26, 2006

# Outline

- 2005 air quality and long-term trends
- Focus on 8-hour ozone and PM2.5
- Progress toward attainment
- Proposed federal PM standards
- Highlights of 2005 health findings

# Statewide Ozone Overview

- Air quality trends continue to improve
- Typical summer weather patterns in 2005 with few exceptions
- Continued improvement in worst areas—San Joaquin Valley and South Coast
- Sacramento area experienced more stagnant conditions and more violations

# San Joaquin Valley

- Dramatic drop in days over the federal 8-hour ozone standard
- Normal summer weather pattern
- Analysis demonstrates real air quality progress

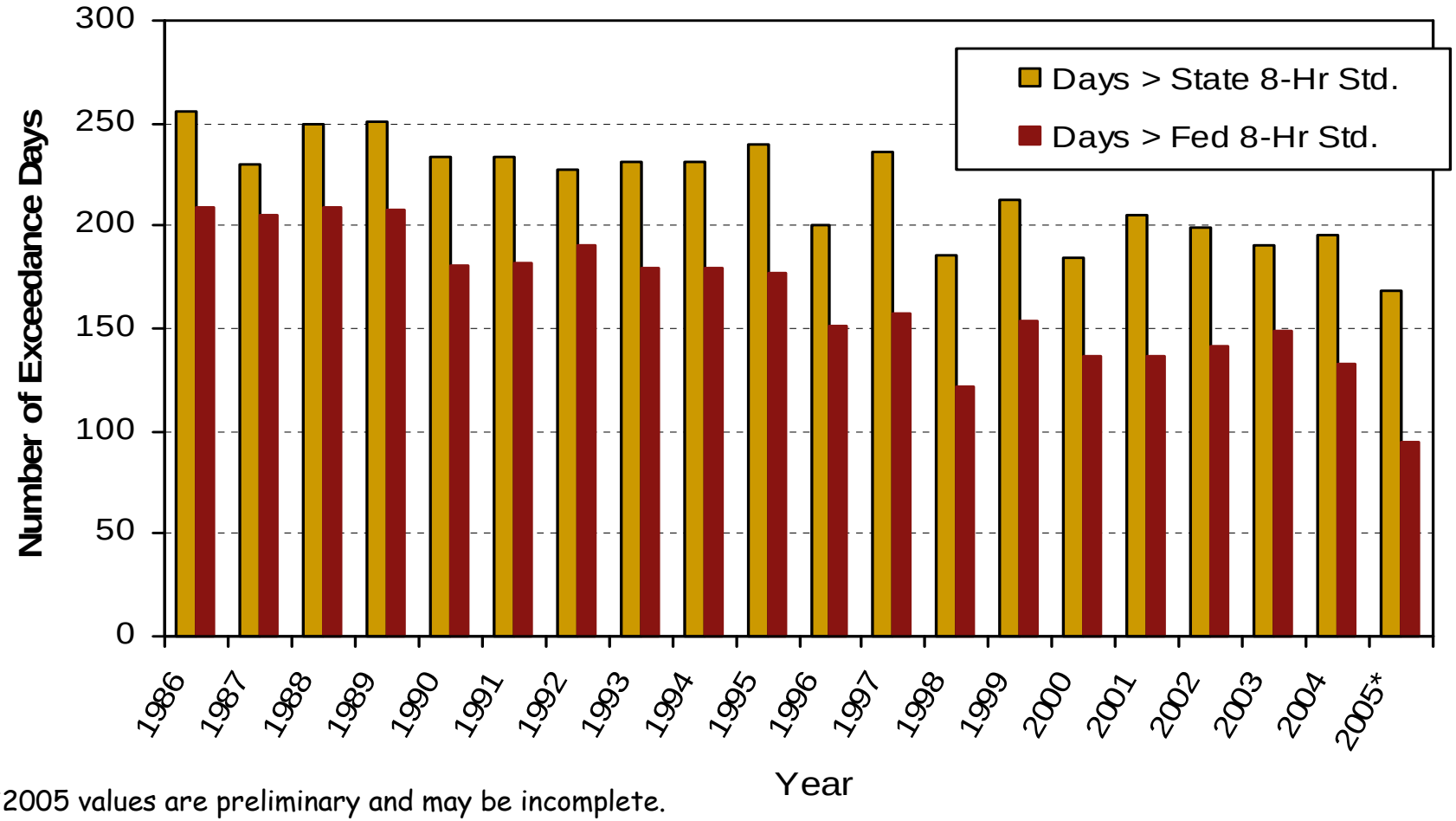
| | 2003 | 2004 | 2005 |
|---|---|---|---|
| **Federal 8-Hour Exceedance Days** | **134** | **109** | **72** |

# South Coast

- Continued downward trend in days over the federal 8-hour ozone standard
- 2003 weather conditions were extreme
- 2005 weather patterns were normal, similar to 2004

| | 2003 | 2004 | 2005 |
|---|---|---|---|
| **Federal 8-Hour Exceedance Days** | **109** | **88** | **84** |

# 20-Year Statewide Trend: Federal and State 8-hour Ozone




*2005 values are preliminary and may be incomplete.

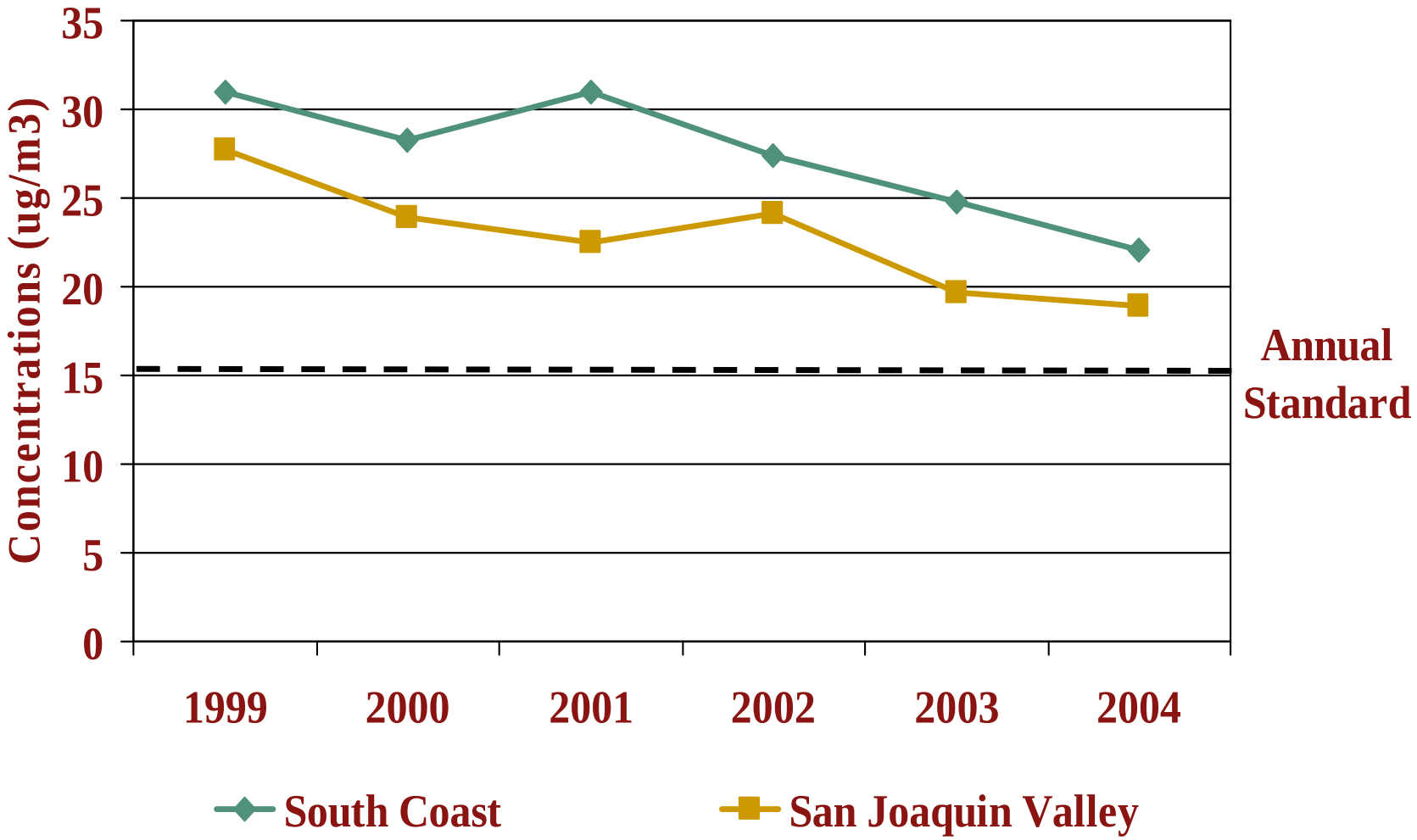
# Population Exposure to Exceedances of State 8-hour Ozone Standard

- Population exposure above the State standard is substantial
- Almost 9 million people are exposed to ozone levels above the State standard for at least 30 days of the year
- Of those, about 2.5 million people are exposed to ozone levels above the State standard for at least 60 days of the year

# Statewide PM2.5 Overview

- San Joaquin Valley and South Coast exceed federal standards
- San Joaquin Valley violations of 24-hour PM2.5 standard decreasing dramatically
- South Coast exceedances of 24-hour PM2.5 standard also declining
- Annual PM2.5 concentrations declining but remain the biggest challenge

# Progress Towards Federal Annual PM2.5 Standard



# Population Exposure to State Annual PM2.5 Standard

- About 80% of Californians are exposed to PM2.5 levels above the State standard
- Of those, about half are exposed to PM2.5 levels that are 50% higher than the State standard

# New Proposed Federal PM Standards

- New, more stringent 24-hour PM2.5 standard
- Maintain current annual PM2.5 standard
- Possible new nonattainment areas include Bay Area, Sacramento, San Diego, and Ventura
- New 24-hour coarse PM (PM10-2.5) standard to replace PM10 standard

# Ozone and Health Research

- 3 new multi-city meta analyses strengthen link between ozone and premature death
  - Levy et al. – 28 studies from 40 cities in U.S., Canada, and Europe
  - Bell et al. – 32 studies from 41 cities in U.S. and Europe
  - Ito et al. – 43 studies from 7 U.S. cities and 32 cities in other parts of the world

# Effects of Ozone on Human Health

California cases/year due to ozone

| | |
|---|---|
| Premature deaths | 630 |
| Hospitalizations & ER visits | 4,900 |
| School absences | 4,700,000 |
| Minor restricted activity days | 3,100,000 |

# Particulates and Health Research

- Substantial scientific evidence linking PM to premature death, especially from cardiopulmonary causes
- 8,200 premature deaths/year due to PM
- New health studies conducted in California

# Particulates and Health Research

- PM2.5 and atherosclerosis in LA
  - First evidence of link to atherosclerosis
  - Chronic, progressive effects
- PM and fatal coronary heart disease: women may be at greater risk
  - Gender-specific effects
  - Coarse PM and PM2.5 effects

# Effects of PM2.5 on Human Health

California cases/year due to PM2.5

| | |
|---|---|
| Premature deaths | 8,200 |
| Hospitalizations & ER visits | 4,600 |
| Asthma attacks | 170,000 |
| Respiratory symptoms | 420,000 |
| Minor restricted activity days | 7,400,000 |

# Summary

- Fewer exceedances of federal 8-hour ozone standard in 2005
- Federal PM2.5 exceedances dropping
- San Joaquin Valley and South Coast remain in nonattainment
  - Still 70 to 80 days over federal ozone standard
  - Annual PM2.5 concentrations above federal standard
- Progress made, but most Californians still live in areas with pollution levels above State standards