Air Quality Update

Board Presentation

December 9, 2004

Today's Presentation

- 2004 air quality status
- Focus on Federal 1-hour ozone and PM10 standards
  - Compare with previous years
  - Review of weather
- Transition to new Federal standards
- Progress toward State standards

2004
OZONE AIR QUALITY
Federal 1-Hour Standard

2004 Snapshot

- **Dramatic improvements statewide compared with last year**
- **Coastal districts continued to meet standard**
- **Sacramento Region now close to attainment**

Statewide Look at 2004

- **Fewest exceedance days ever in South Coast and San Joaquin Valley**
- **No days exceeding standard in Bay Area and Sacramento Region**
- **Lower peak concentrations in most areas of California**

Recent Trend in Northern California

Number of Days Exceeding Federal 1-Hour Ozone Standard				
	2001	2002	2003	2004*
San Joaquin Valley	32	31	37	9
Sacramento Metro Area	3	10	6	0
San Francisco Bay Area	1	2	1	0

* 2004 data are preliminary and reflect data collected through November 30, 2004.

Recent Trend in Southern California

Number of Days Exceeding Federal 1-Hour Ozone Standard				
	2001	2002	2003	2004*
South Coast	36	45	64	27
Mojave Desert	6	16	13	4
San Diego	2	0	1	0
Ventura	2	1	2	0

* 2004 data are preliminary and reflect data collected through November 30, 2004.

Highlighted Districts

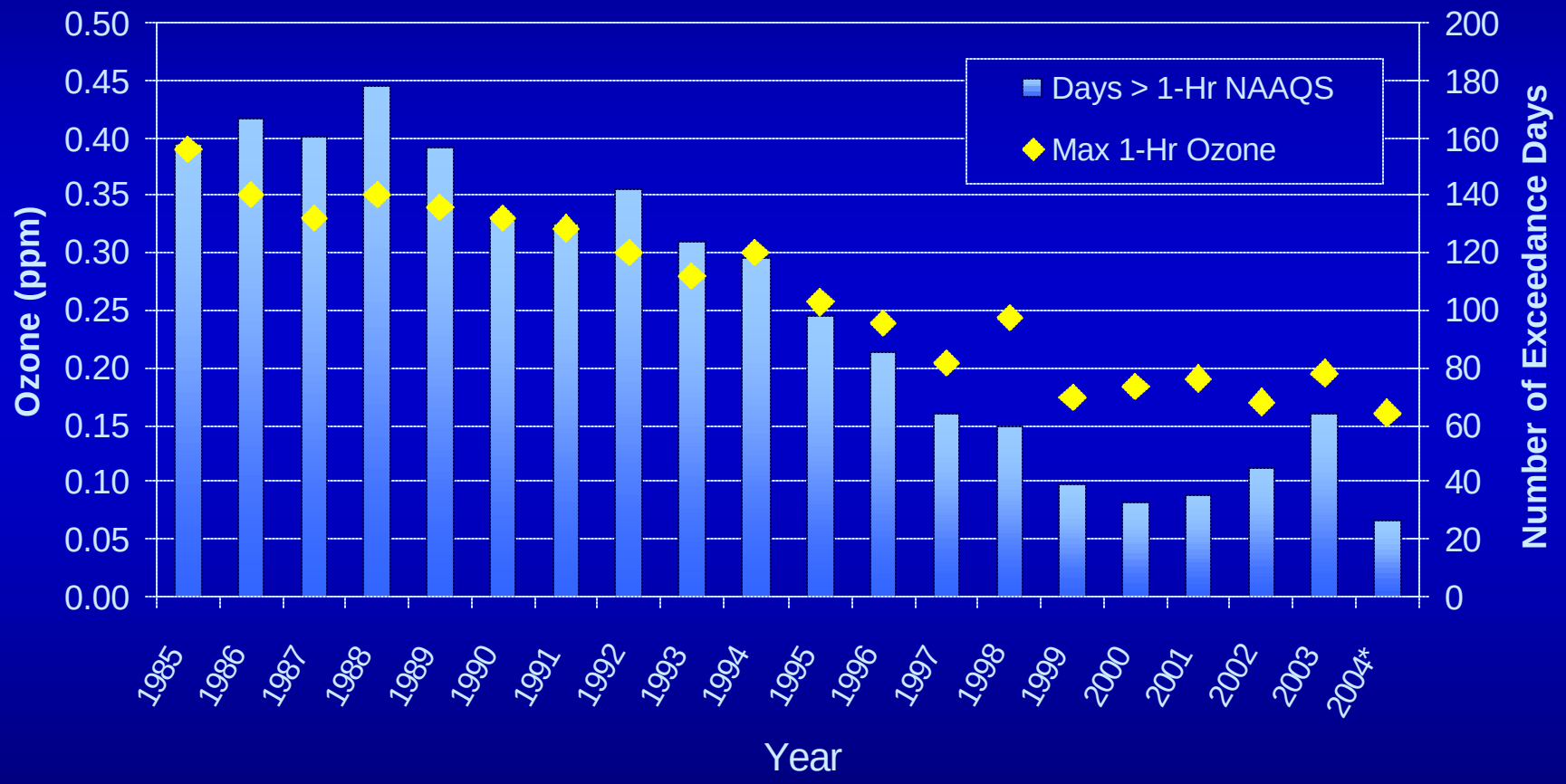
- South Coast
- San Joaquin Valley
- Sacramento Region
- San Francisco Bay Area

SOUTH COAST

South Coast - 2004 Federal 1-Hour Ozone Standard

- 2004 air quality consistent with historical downward trend
- Weather causes year-to-year changes
  - 2003 extremely conducive to ozone formation
  - 2004 was average weather year
- Concentrations on exceedance days declining since 1980
  - 2004 had lowest peak levels (0.16 ppm)
  - 2004 had fewest 1-hour Federal exceedance days (27)

20-Year Trend in South Coast



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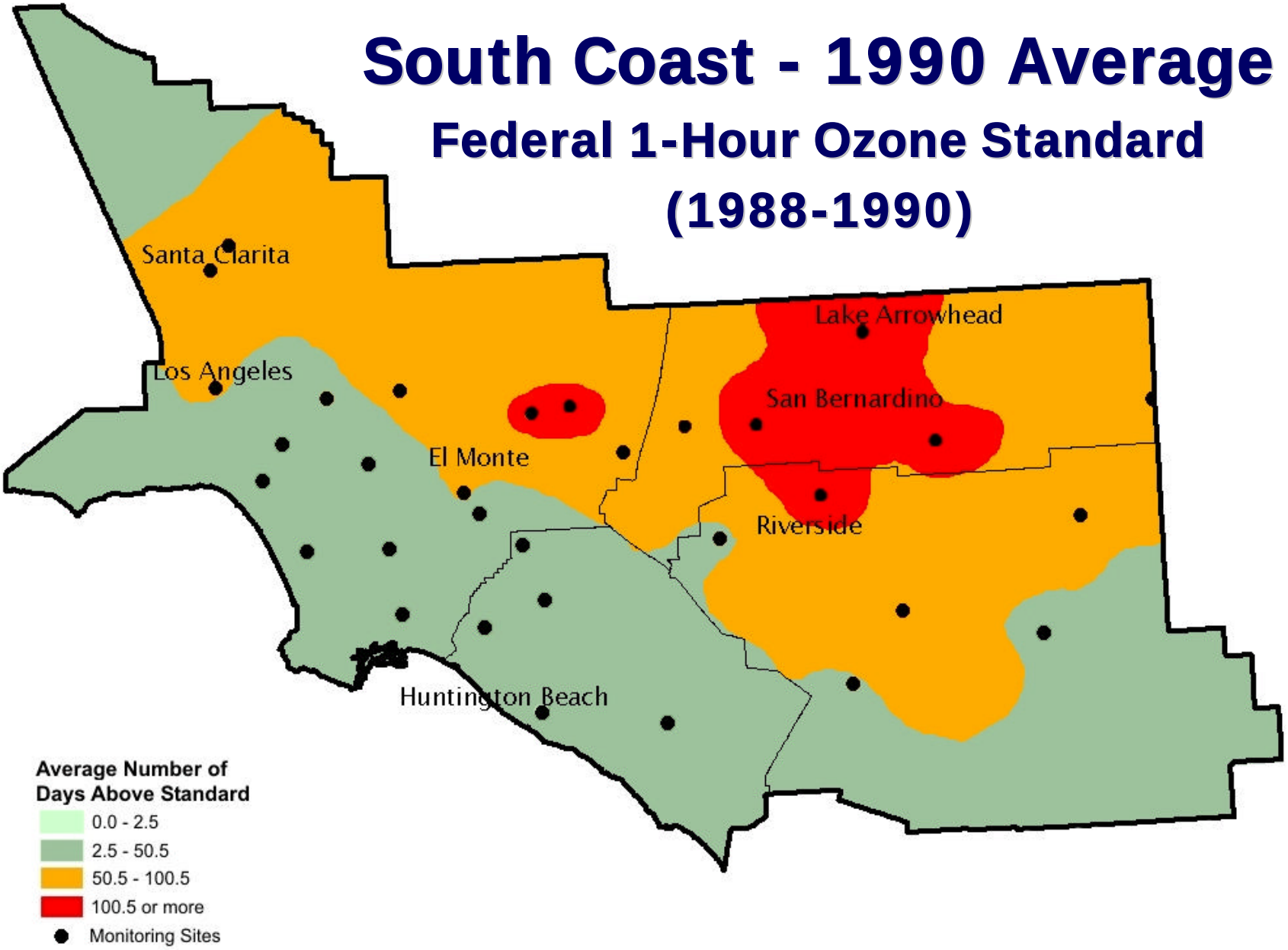
South Coast - 1990 Average

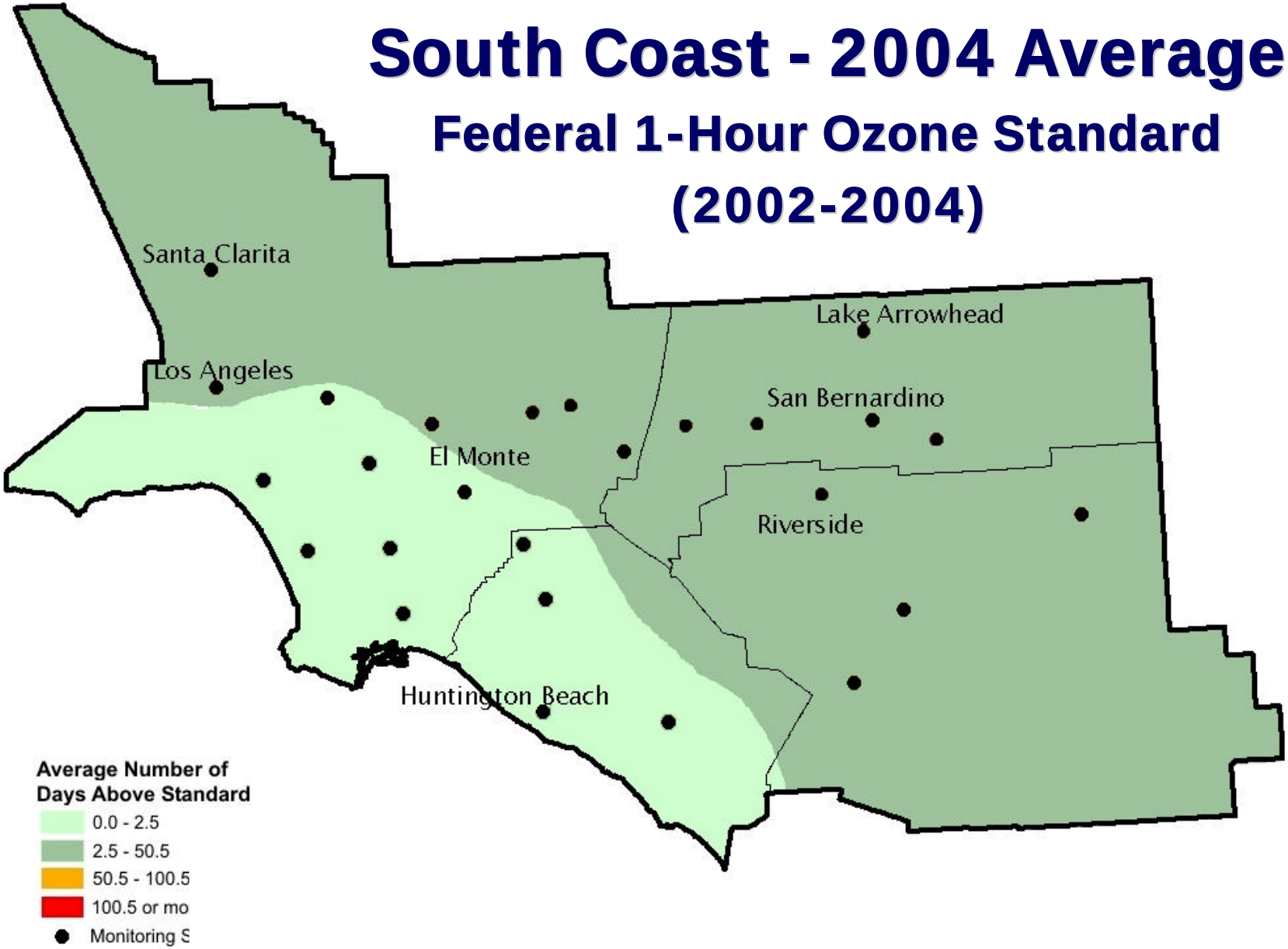
Federal 1-Hour Ozone Standard

(1988-1990)



South Coast - 2004 Average

Federal 1-Hour Ozone Standard (2002-2004)

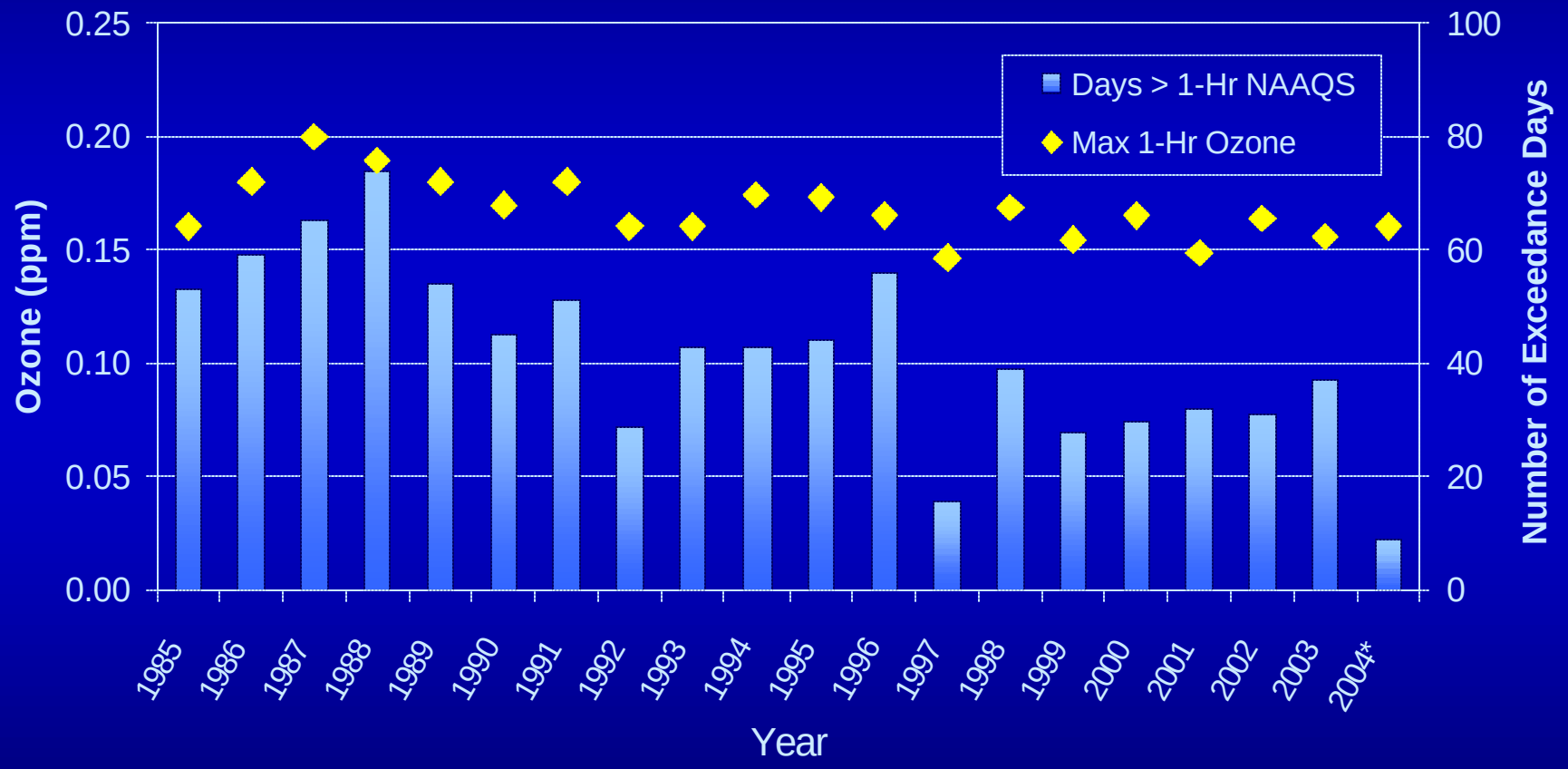


SAN JOAQUIN VALLEY

San Joaquin Valley - 2004 Federal 1-Hour Ozone Standard

- 2004 weather slightly better than average
  - 2002/2003: Multiple 2 to 6-day episodes
  - 2004: Only one 2-day episode
- Fewer Federal 1-hour exceedance days in 2004 than during last 20 years
- 2004 peak levels comparable with 2002 and 2003
- Exceedances not as widespread

20-Year Trend in San Joaquin Valley



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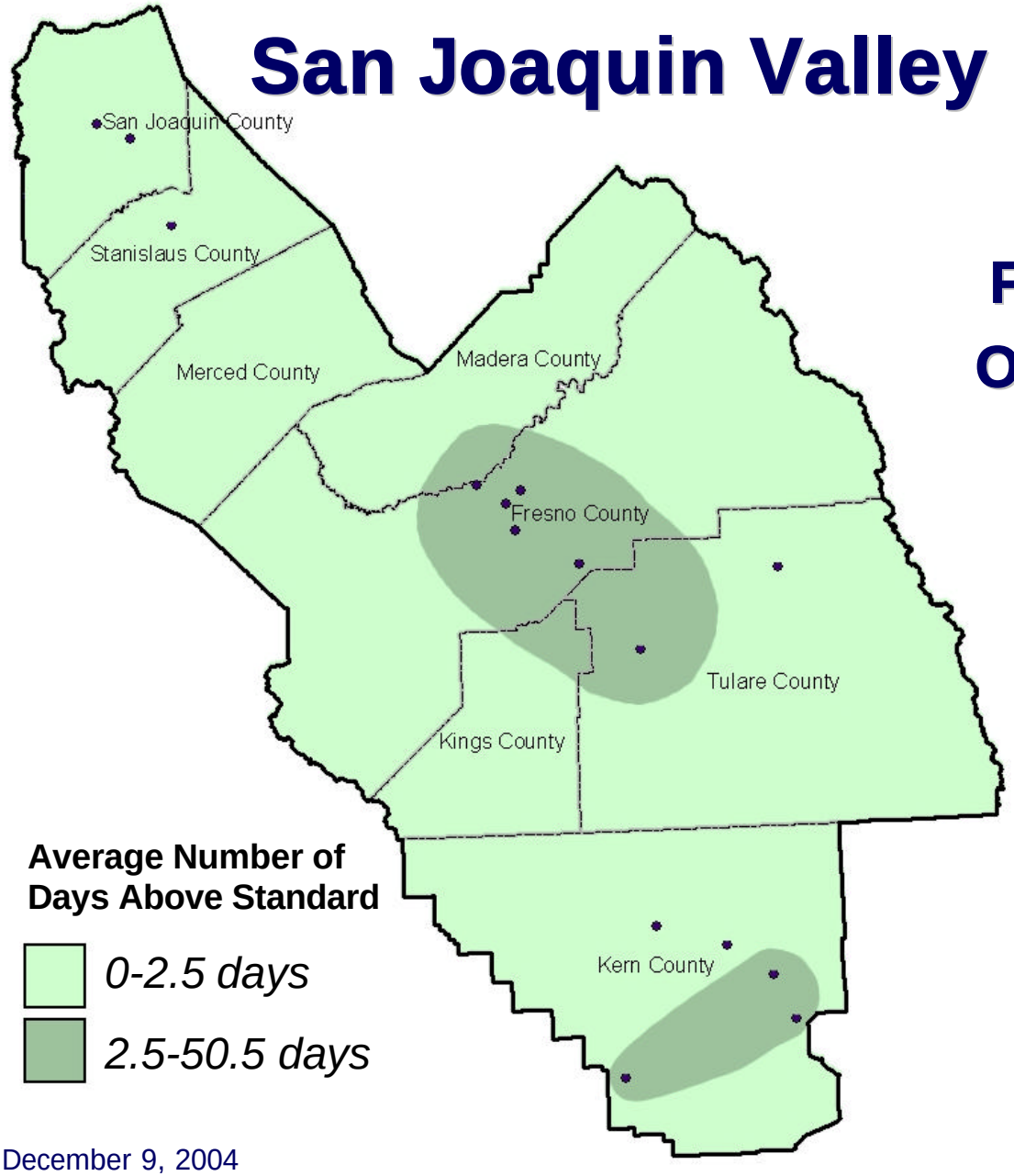
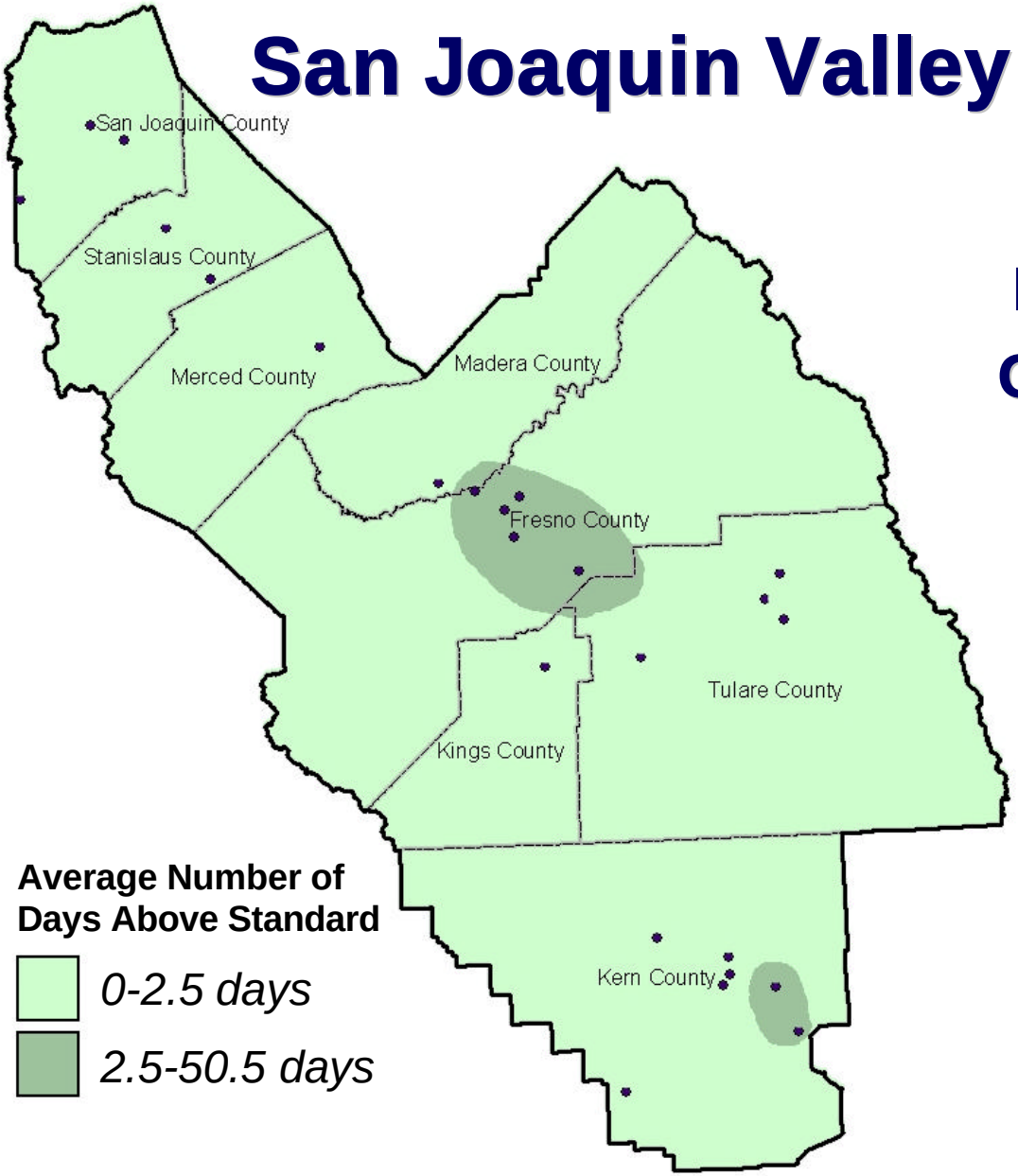
San Joaquin Valley - 1990 Average



Federal 1-Hour Ozone Standard (1988-1990)

San Joaquin Valley - 2004 Average



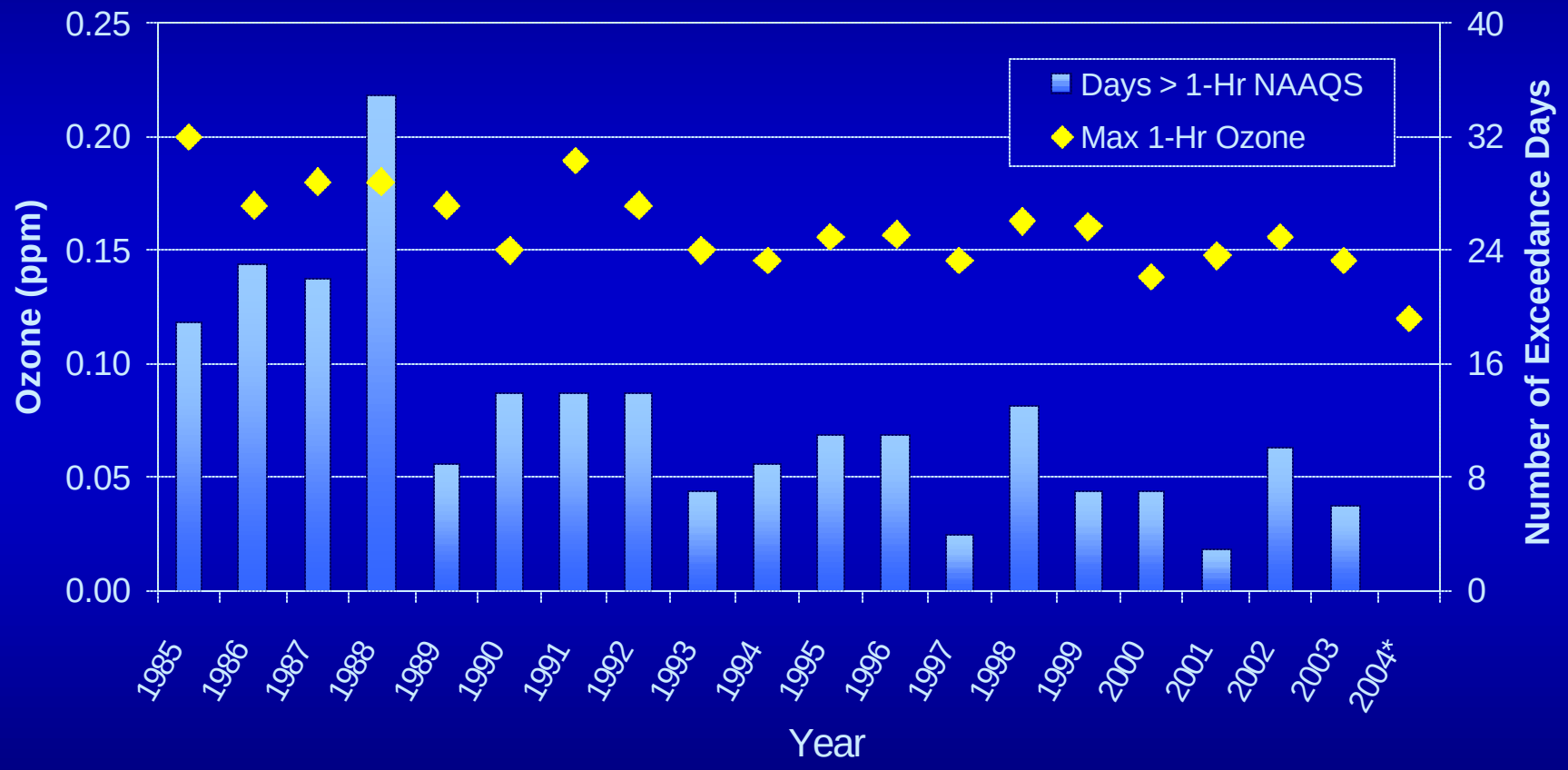
Federal 1-Hour Ozone Standard (2002-2004)

SACRAMENTO REGION

Sacramento Region - 2004 Federal 1-Hour Ozone Standard

- **No exceedance days in 2004**
- **Lower peak levels**
  - **2004 peak at level of federal 1-hour standard (0.12 ppm)**
- **2004 weather similar to 2002 and 2003**

20-Year Trend in Sacramento Region



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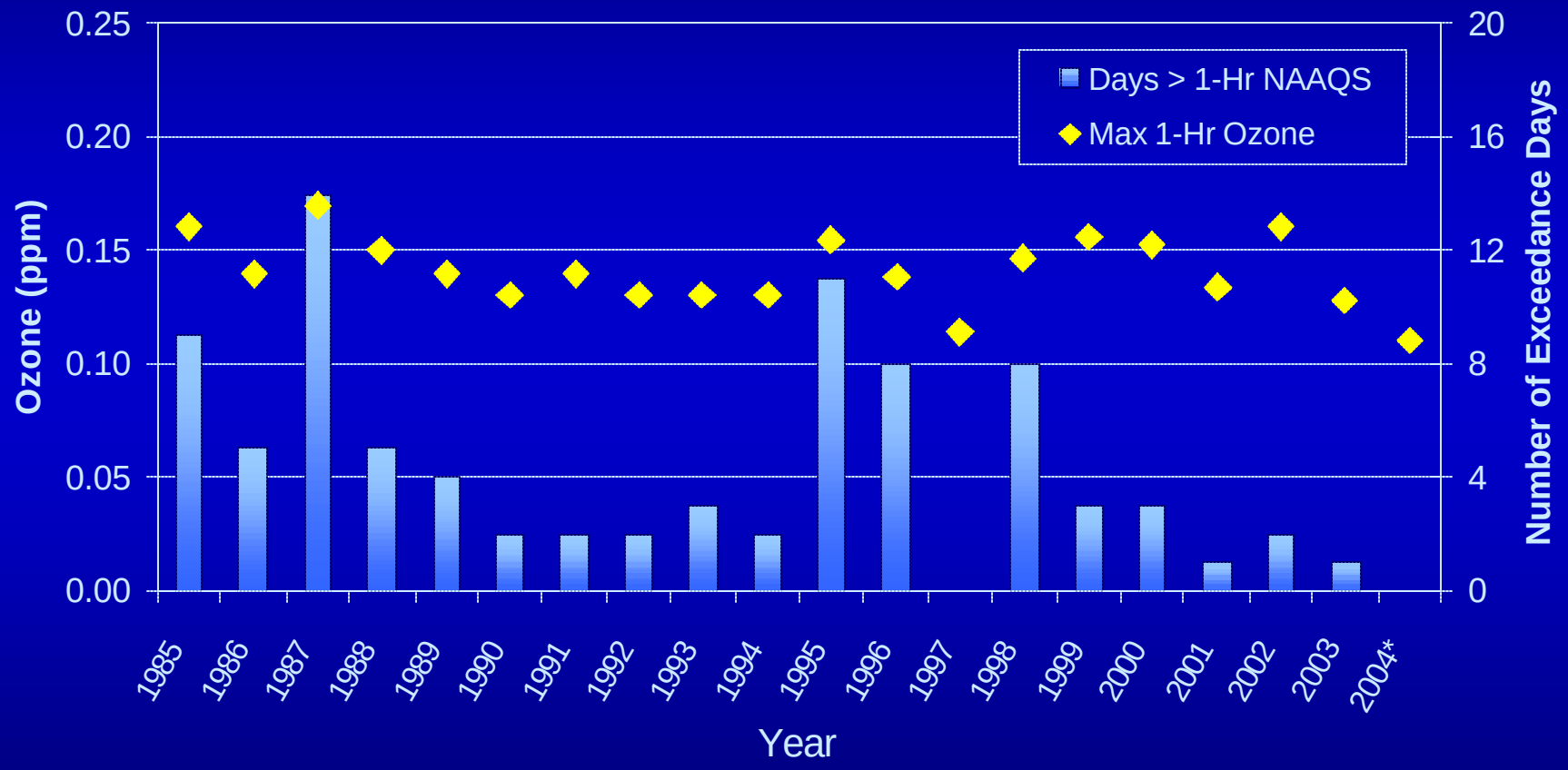
SAN FRANCISCO BAY AREA

San Francisco Bay Area - 2004 Federal 1-Hour Ozone Standard

- **Attains 1-hour standard**
  - **No exceedances this year**
- **2004 had fewer hot days & better mixing**
- **Weather impacts more noticeable for areas that are close to the standard**

20-Year Trend in SF Bay Area



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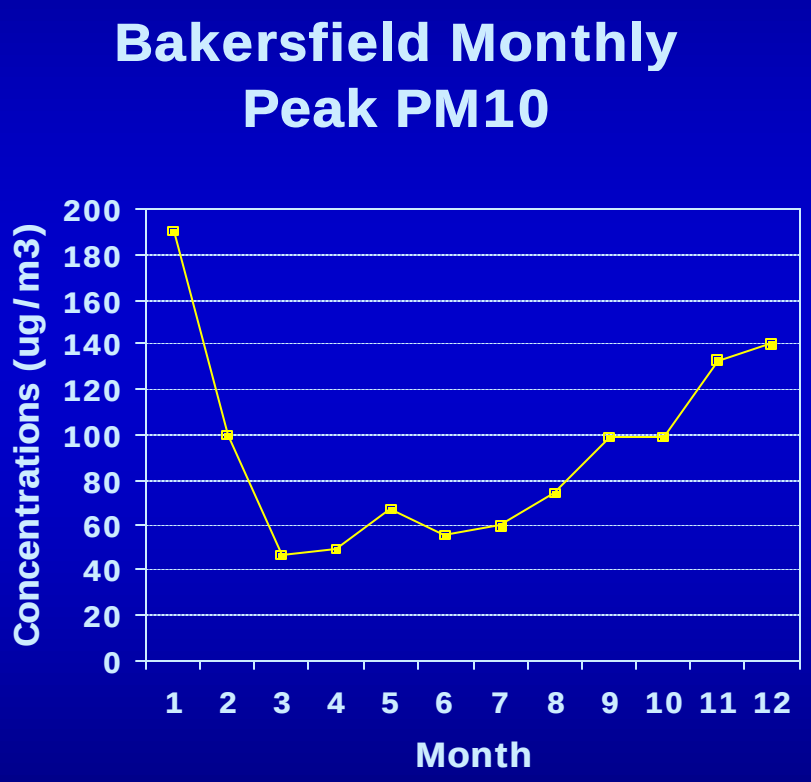
2004 PARTICULATE MATTER AIR QUALITY

Federal PM10 Standards

Complexity of PM10

- Different seasonal patterns than ozone
- Annual and 24-hour standards
- Less frequent sampling
- Multiple weather scenarios



Factors Affecting PM10

- Weather conditions
  - Windblown dust events
  - Atmospheric stagnation
- Enhanced activities on holidays
- Natural events such as wildfires

Characterizing Current PM10 Air Quality

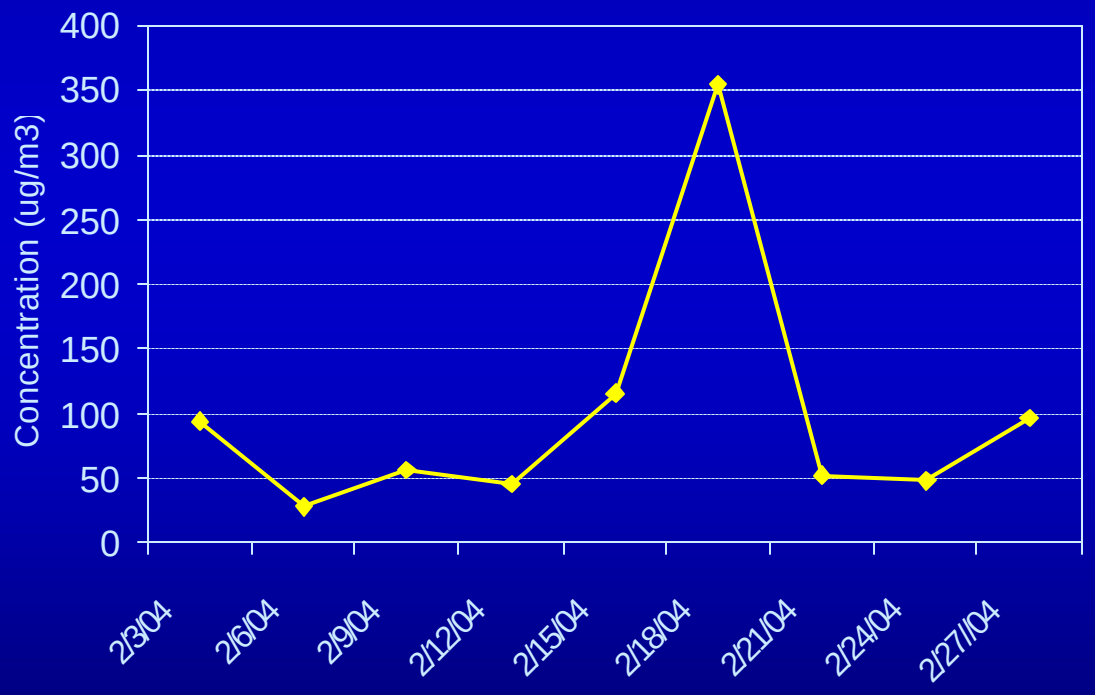
- **More difficult to compare regions and years than ozone**
- **Most recent complete data represents July 2003 - June 2004**
- **Move toward continuous sampling will improve understanding of PM problem**

Statewide 2003/2004 PM10 Air Quality

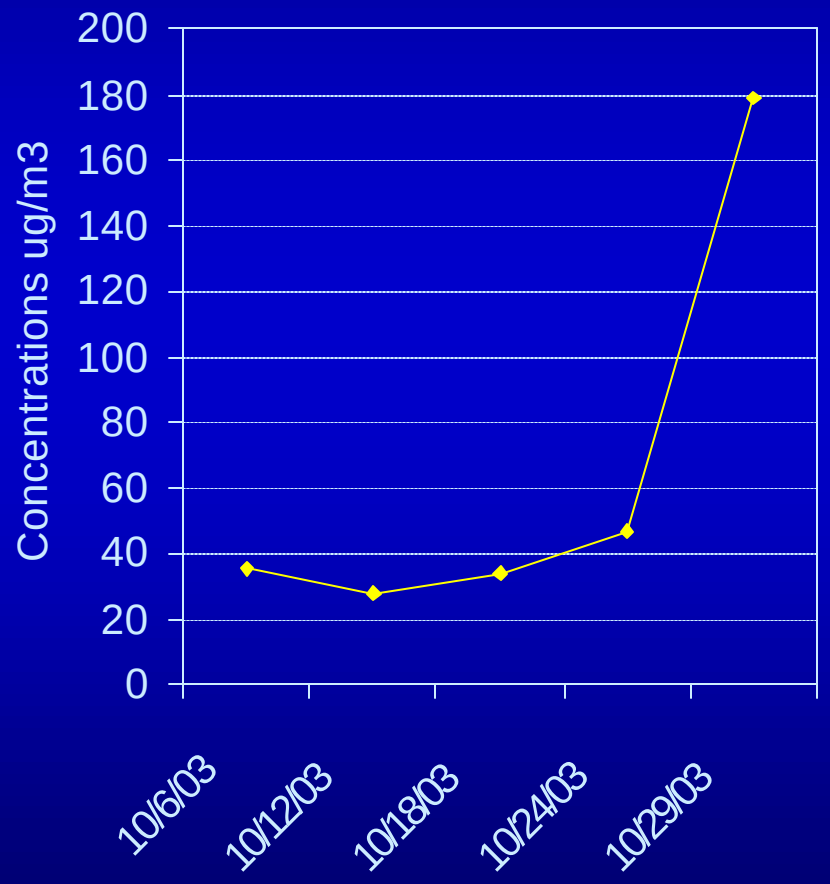
- **Peak concentrations**
  - **A few areas continue to have fugitive dust problems**
  - **Urban areas rarely exceed 24-hour standard**
- **Further progress toward attaining the annual standard**

Dust Storms Impacts on PM10

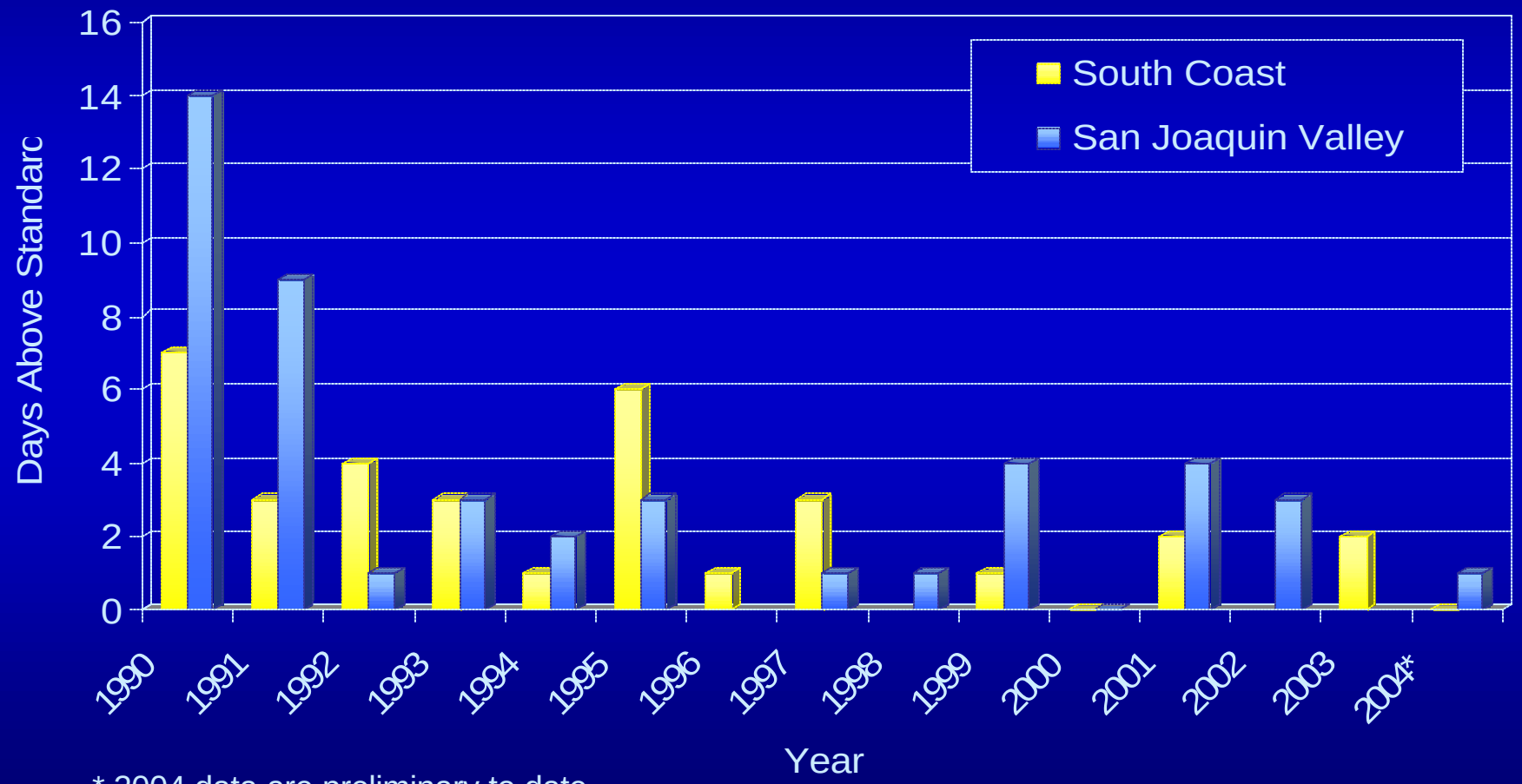
Imperial County, February 2004



Wildfire Impacts on PM10
Escondido, October 2003

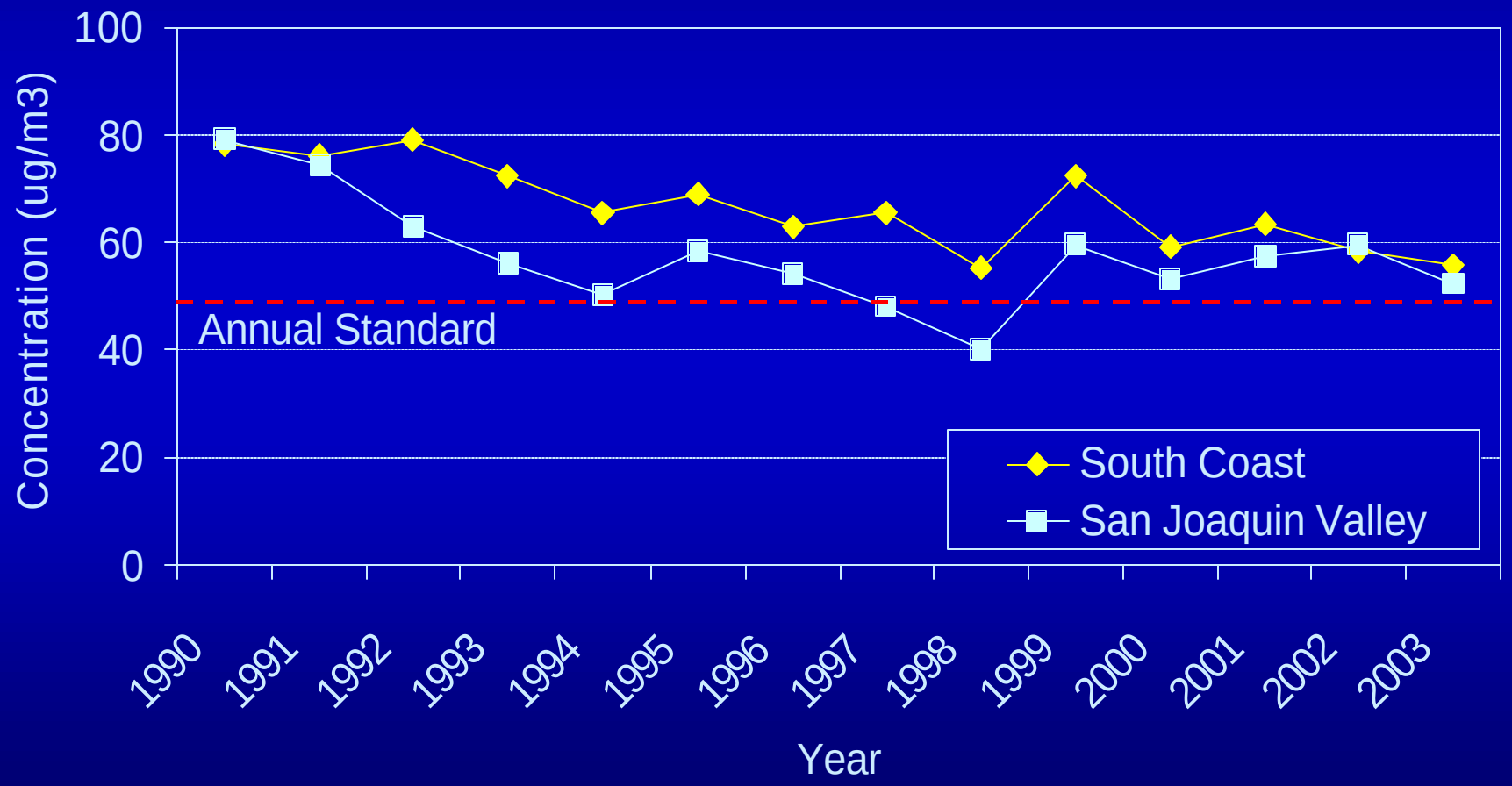


Progress Toward Attaining Federal 24-Hr PM10 Standard



* 2004 data are preliminary to date.

Progress Toward Attaining Federal Annual PM10 Standard

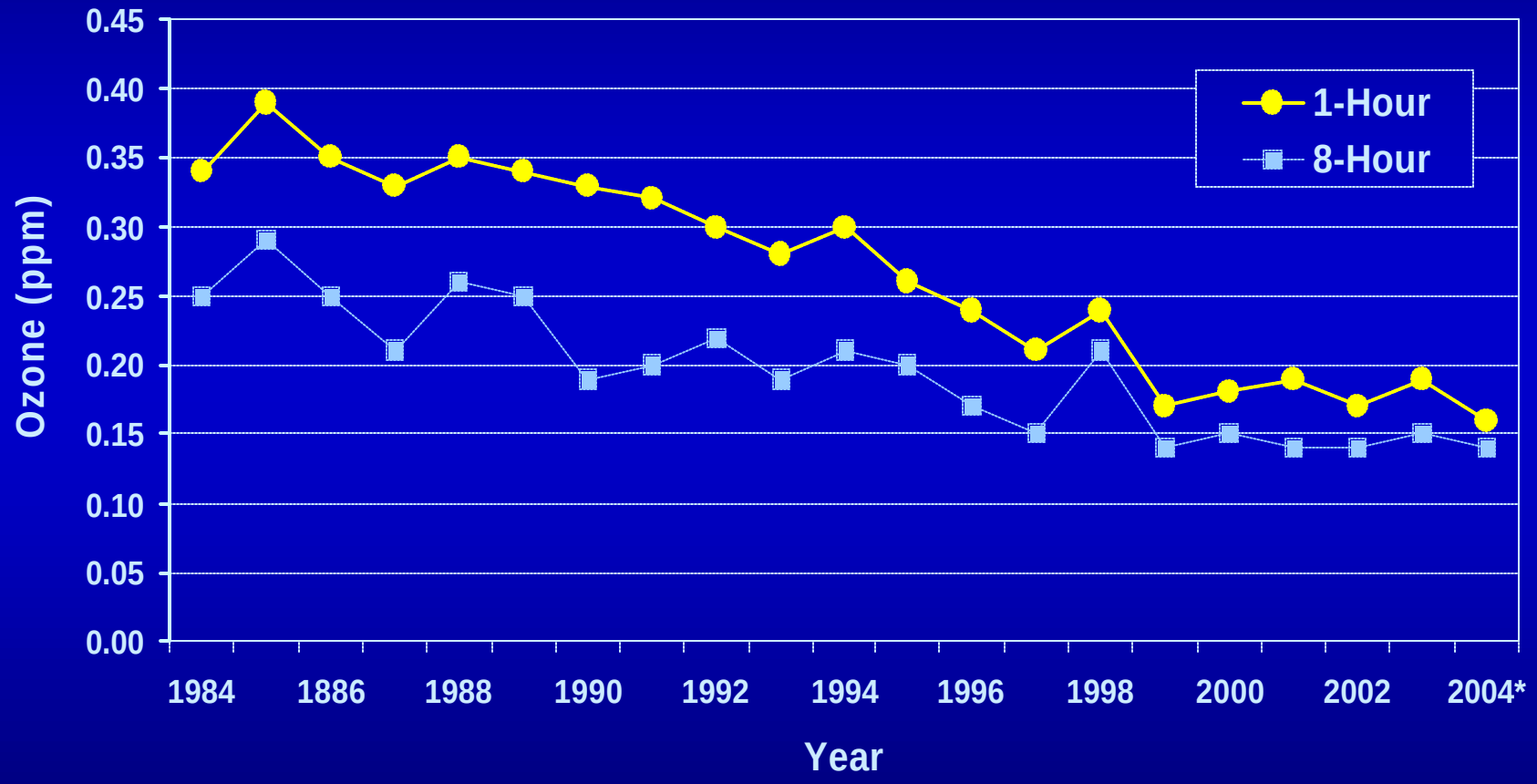


TRANSITIONING TO NEW FEDERAL STANDARDS

New Federal Ozone and PM2.5 Standards

- **1-hour ozone standard revoked, effective June 2005**
- **8-hour ozone SIPs due in 2007**
- **Expected PM2.5 designations by the end of this year**
- **PM2.5 plans due in 2008**

South Coast Peak Ozone Levels



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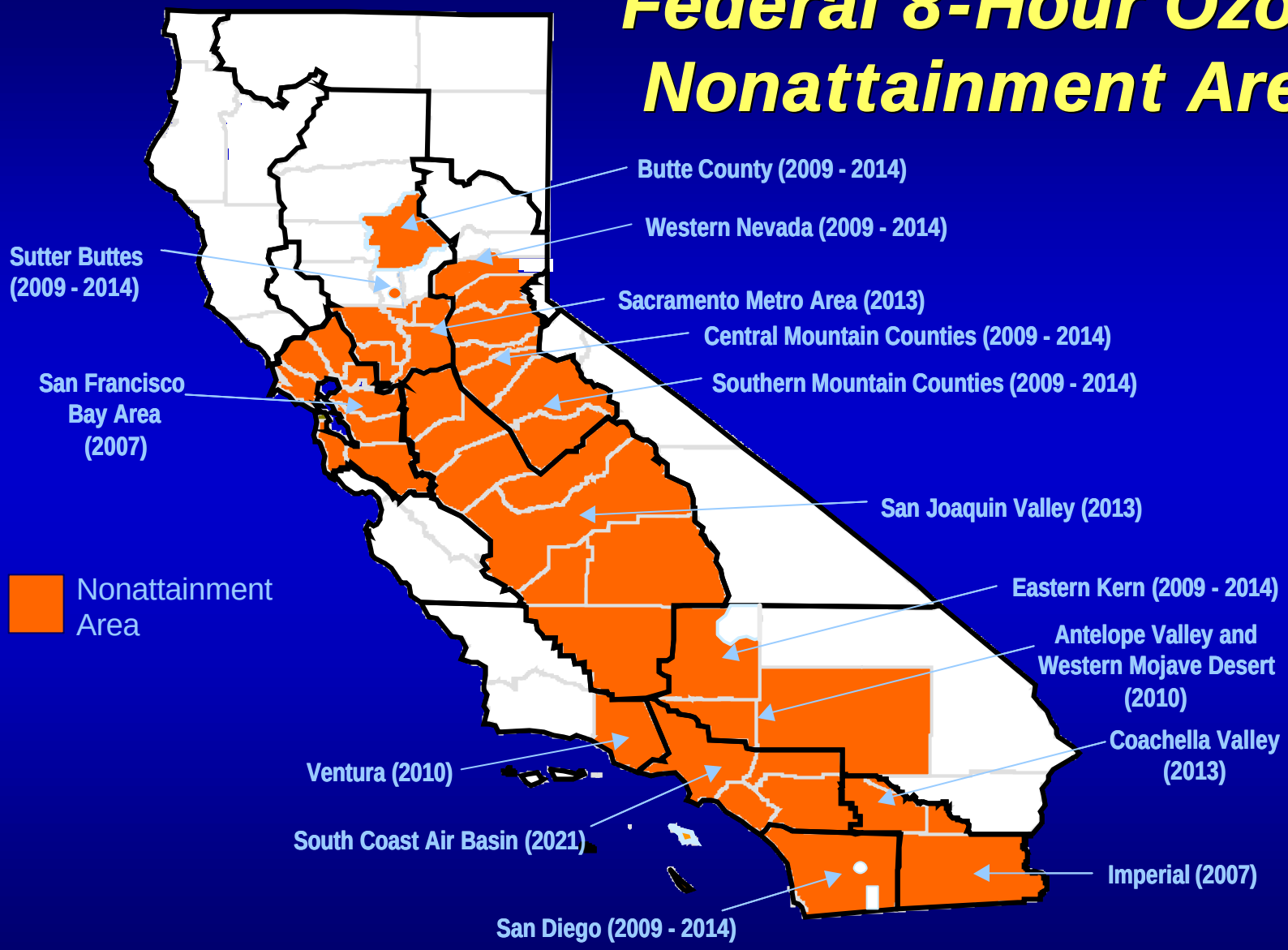
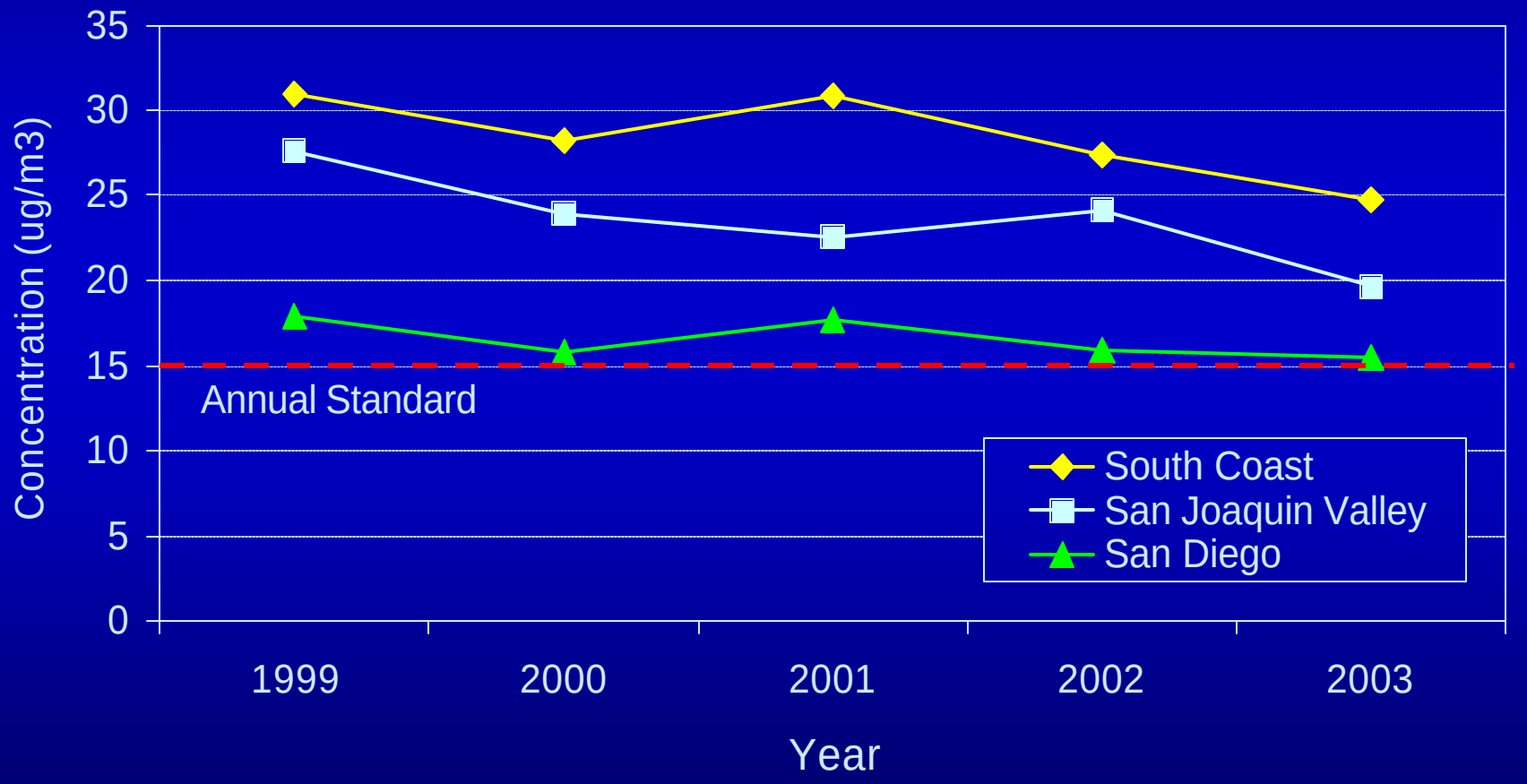
Federal 8-Hour Ozone Nonattainment Areas



Expected Federal PM2.5 Nonattainment Areas

- San Joaquin Valley
- South Coast
- San Diego

Progress Toward Attaining Federal Annual PM2.5 Standard



STATE STANDARDS

Overview of State Standards

- NO_2 standard attained statewide
- State CO standard violated only in localized area in Calexico
- Most areas exceed State PM10 and PM2.5 standards

STATE 1-HOUR OZONE STANDARD

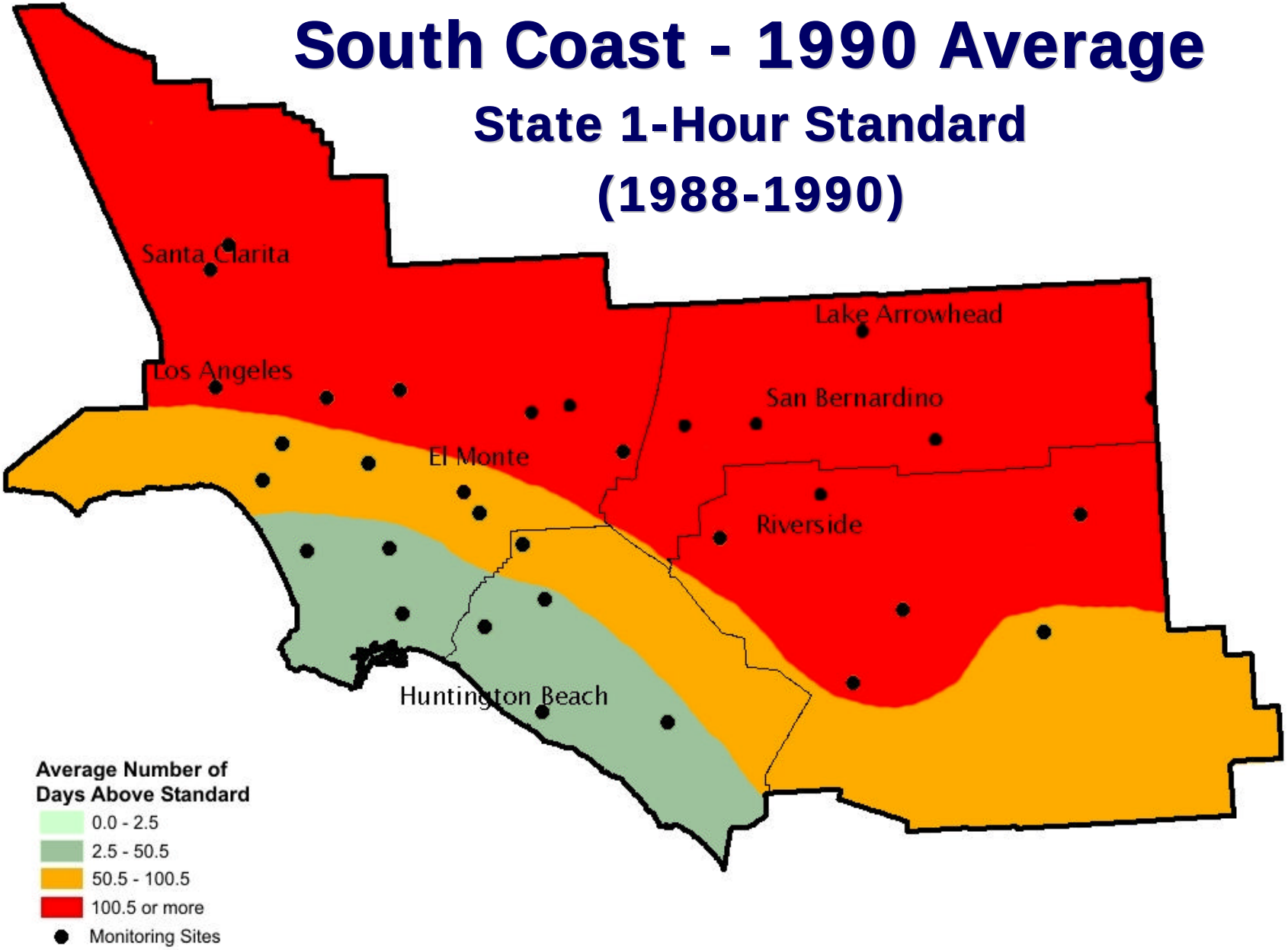
Overview of State 1-Hour Ozone Standard

- **Most urban areas exceed State ozone standard**
- **Limited number of attainment areas**
  - **Coastal areas**
  - **Rural areas**
- **Dramatic progress in South Coast over last 25 years**

South Coast - 1990 Average

State 1-Hour Standard

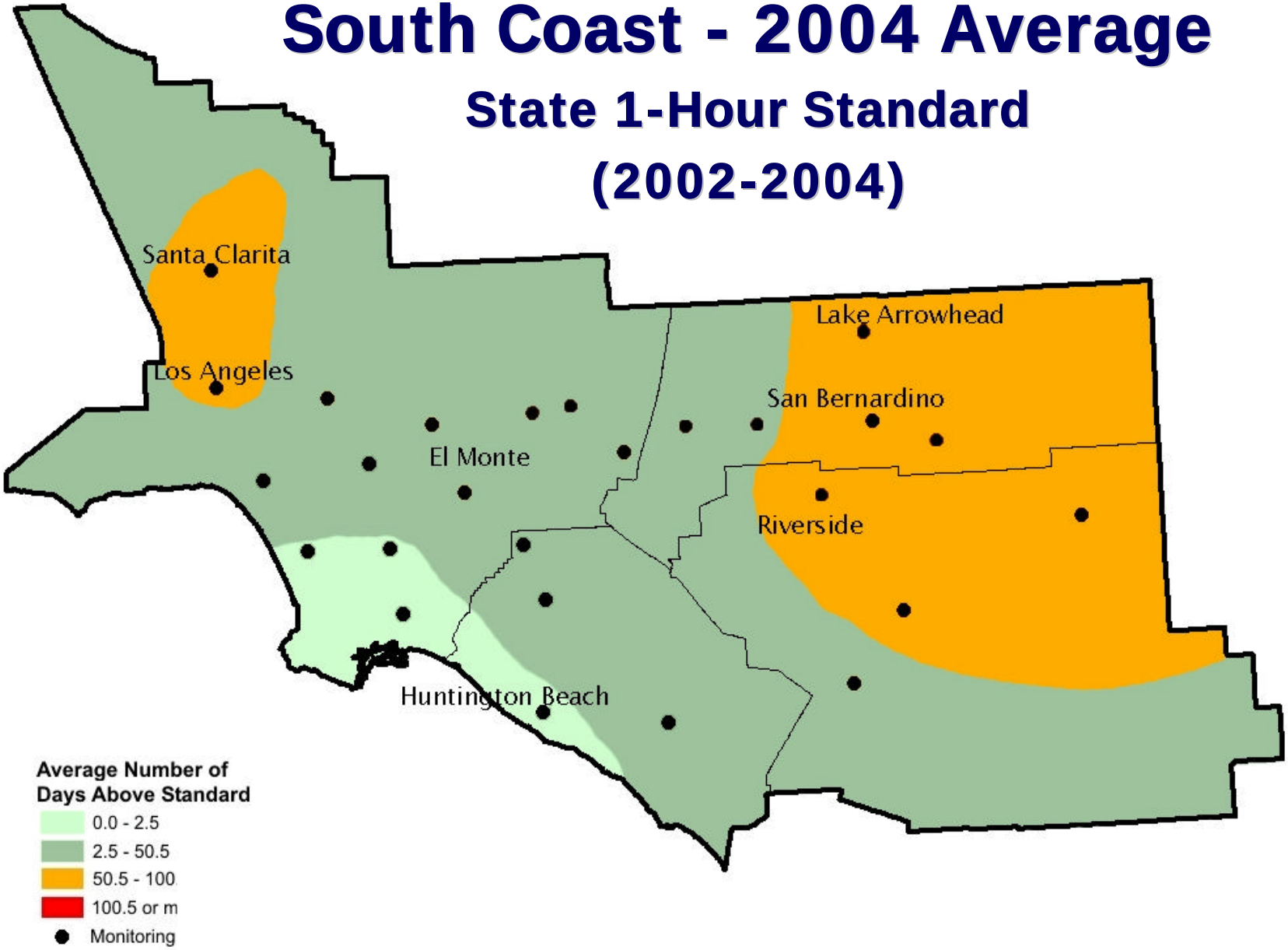
(1988-1990)



South Coast - 2004 Average

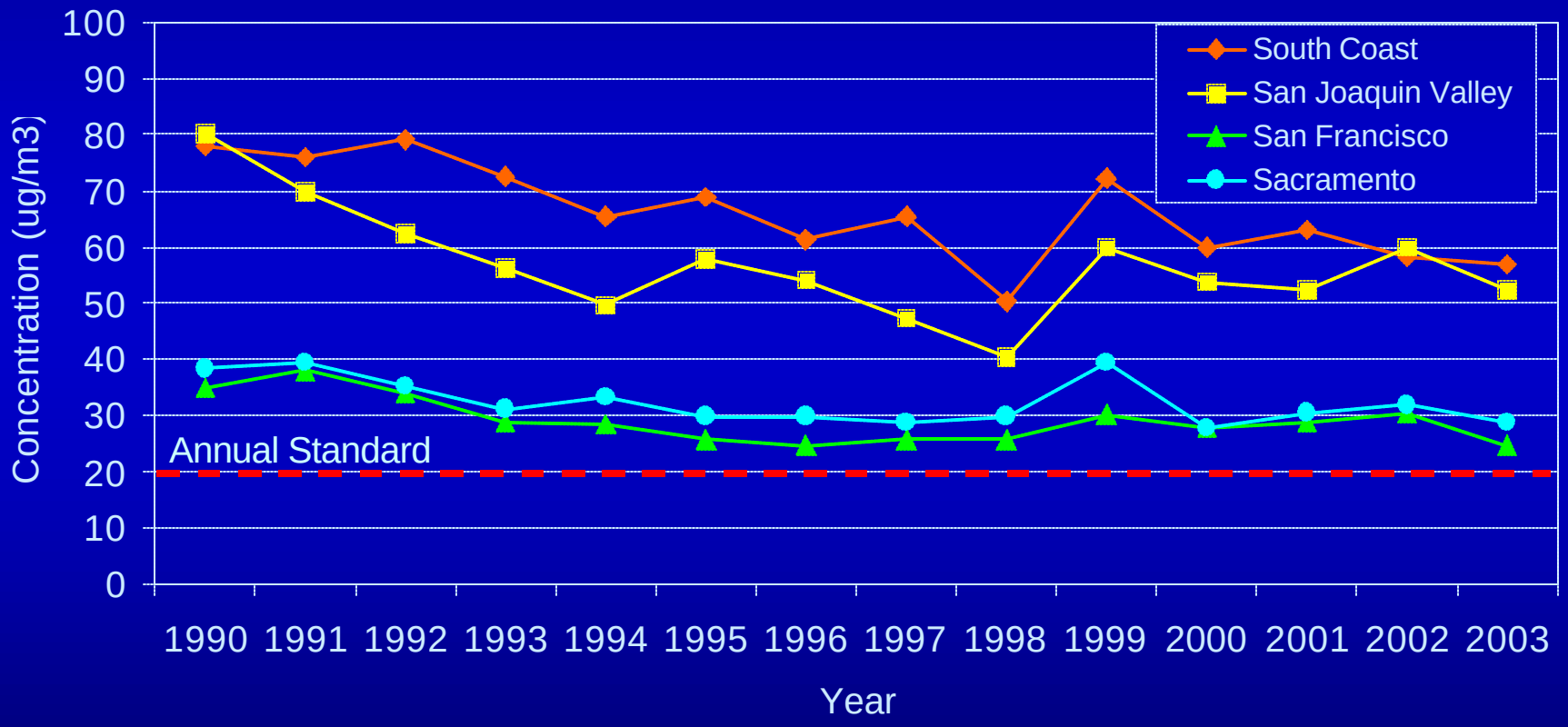
State 1-Hour Standard

(2002-2004)

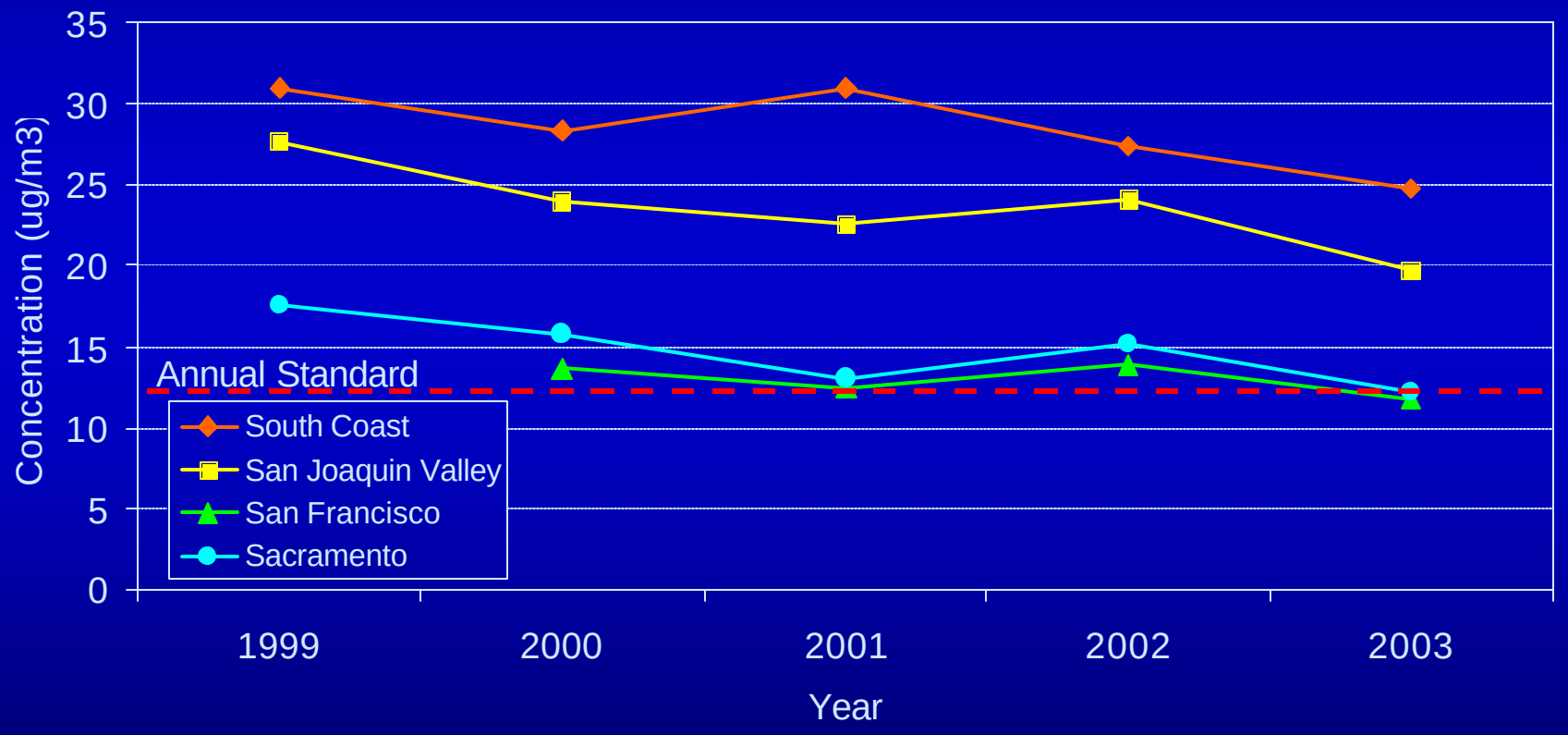


STATE PM10 AND PM2.5 STANDARDS

Progress Toward Attaining State Annual PM10 Standard



Progress Toward Attaining State Annual PM2.5 Standard



Summary

- **2004 ozone air quality improved dramatically compared to 2003 which was extremely conducive to ozone formation**
- **The average weather conditions in 2004 produced improved air quality compared to average years in the past**
- **Long-term trend shows improvement**