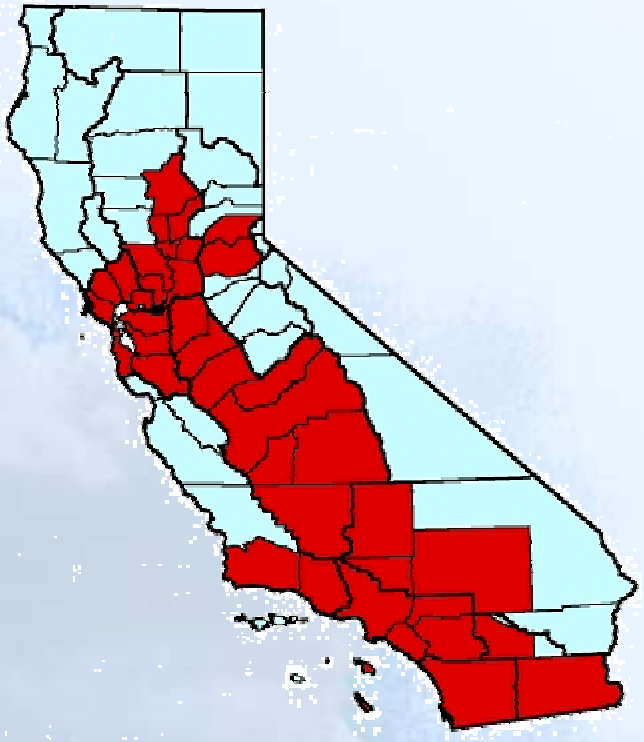
California Air Resources Board
Agriculture Advisory Committee for Air Quality

Statewide Air Quality Issues

October 1, 2002

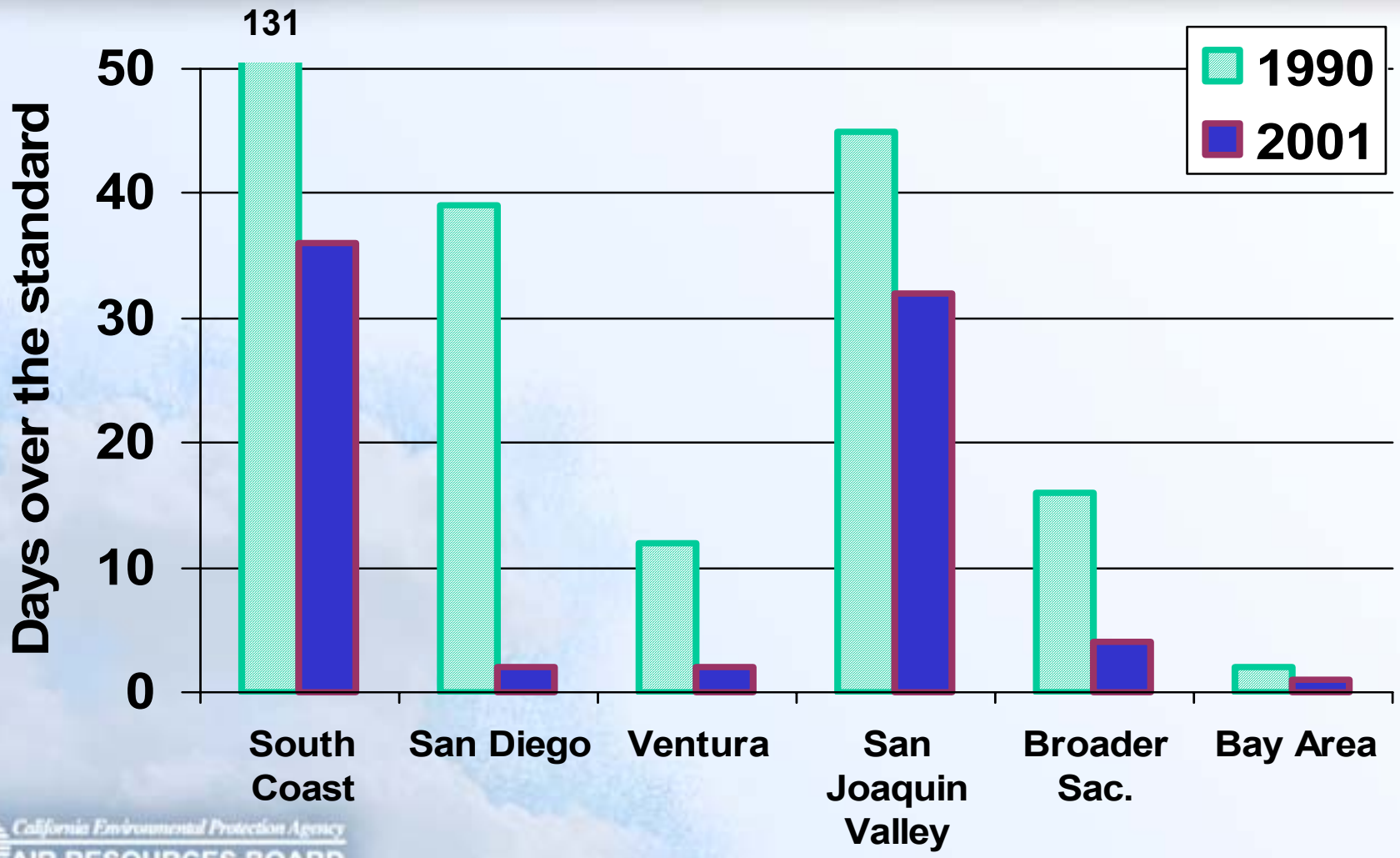
Areas Violating Federal Air Quality Standards

Ozone



PM10

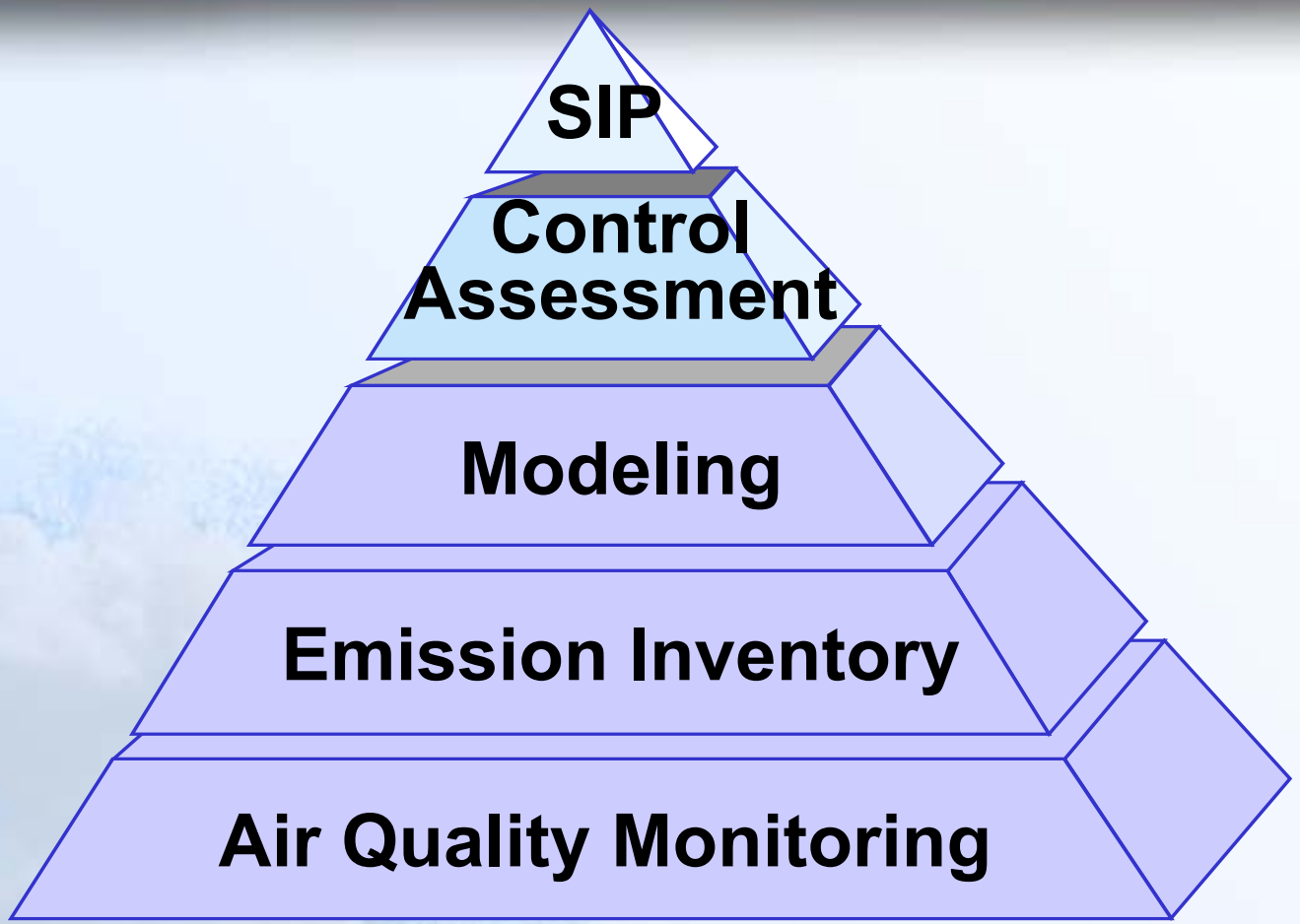
Progress Toward Meeting the Federal 1-Hour Ozone Standard



Federal Requirement for New SIPs

	Ozone	PM10
San Joaquin Valley	Late 2003	Early-Mid 2003
Imperial	---	Early 2003
South Coast	Early 2003	Early 2003
Sacramento	2004	---
Bay Area	Early 2004	---

Process for Developing SIPs



Public Outreach Obligation and Opportunity

- State and federal requirements for public process throughout SIP development
- Public process offers stakeholders the obligation and opportunity to shape SIP
- U.S. EPA and USDA are a part of that process

Failure to Adopt or Implement a SIP Leads to Sanctions

- U.S. EPA must make a SIP deficiency finding based upon:
  - Failure to adopt a SIP
  - Submission of an unapprovable SIP
  - Failure to adopt a measure in a SIP
  - Adoption of a measure less stringent than required by U.S. EPA or committed to in the SIP
- Not fixing a deficiency within allowed timeframes leads to sanctions

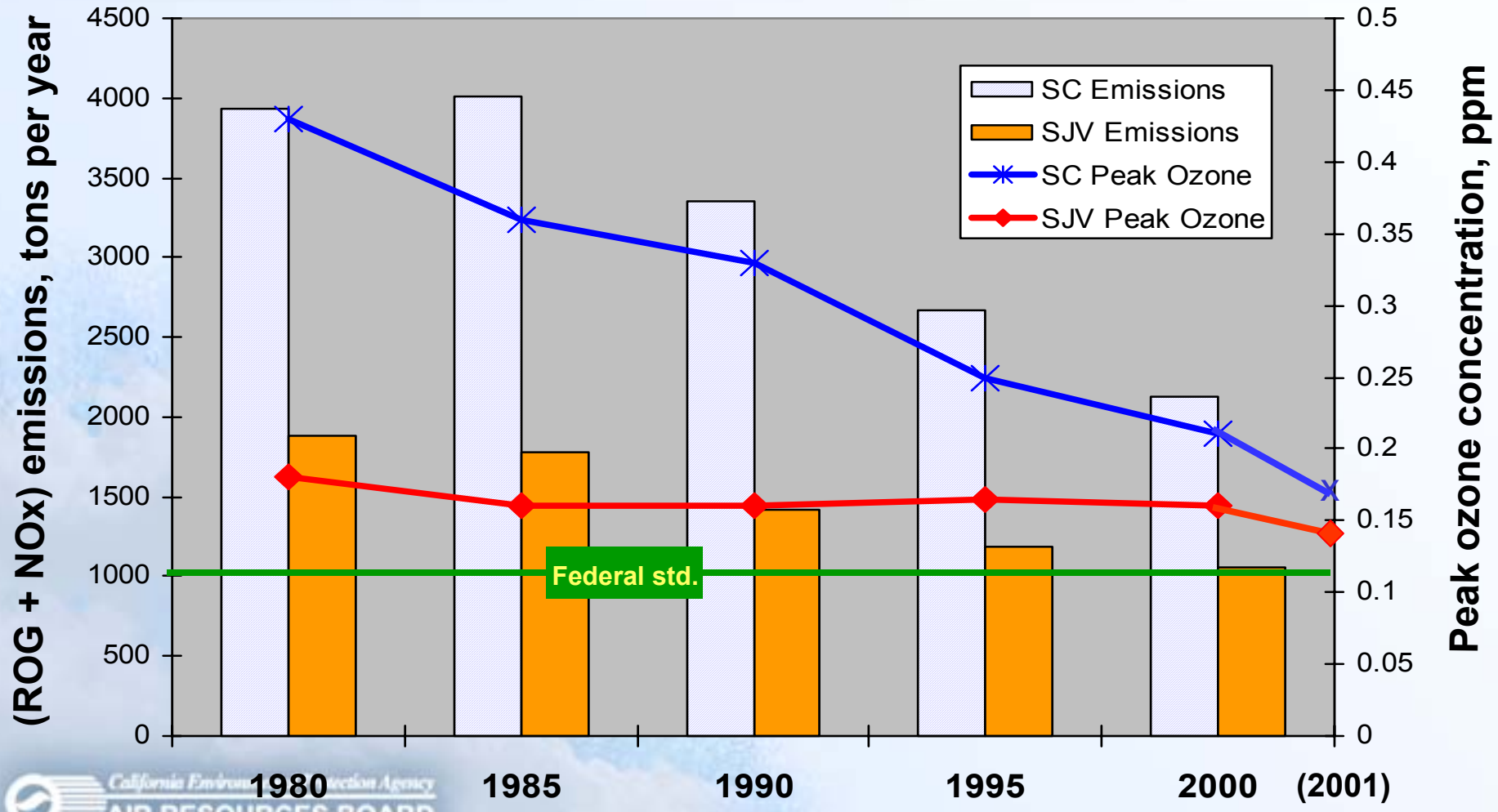
SIPs Linked to Transportation Funding and Conformity

- SIPs set budgets for regional on-road emissions for future years
- Transportation funds withheld if SIPs don't meet federal requirements
- Exceeding an emissions budget results in a conformity lapse
- $2.5 billion statewide annually on the table

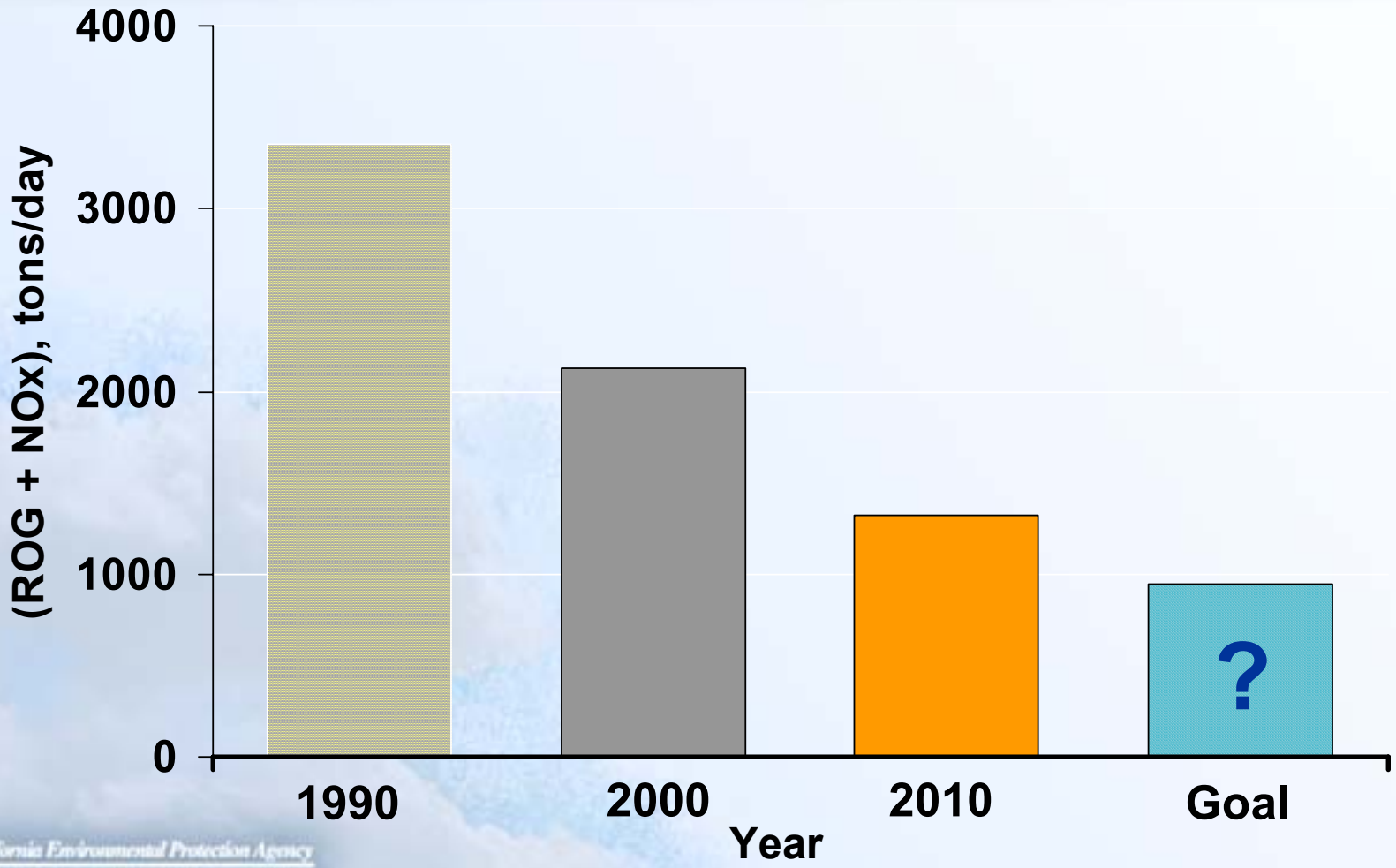
Current Conformity Issues

- Potential Bay Area conformity lapse
  - Court issued stays on action on budgets, pending ruling on SIP adequacy
  - Transportation plans cannot be approved without budgets based on SIP
  - $1 billion in transportation funds at stake
- San Joaquin Valley SIPs must be completed in time to avoid transportation sanctions
- South Coast and other SIP updates will satisfy conformity requirements

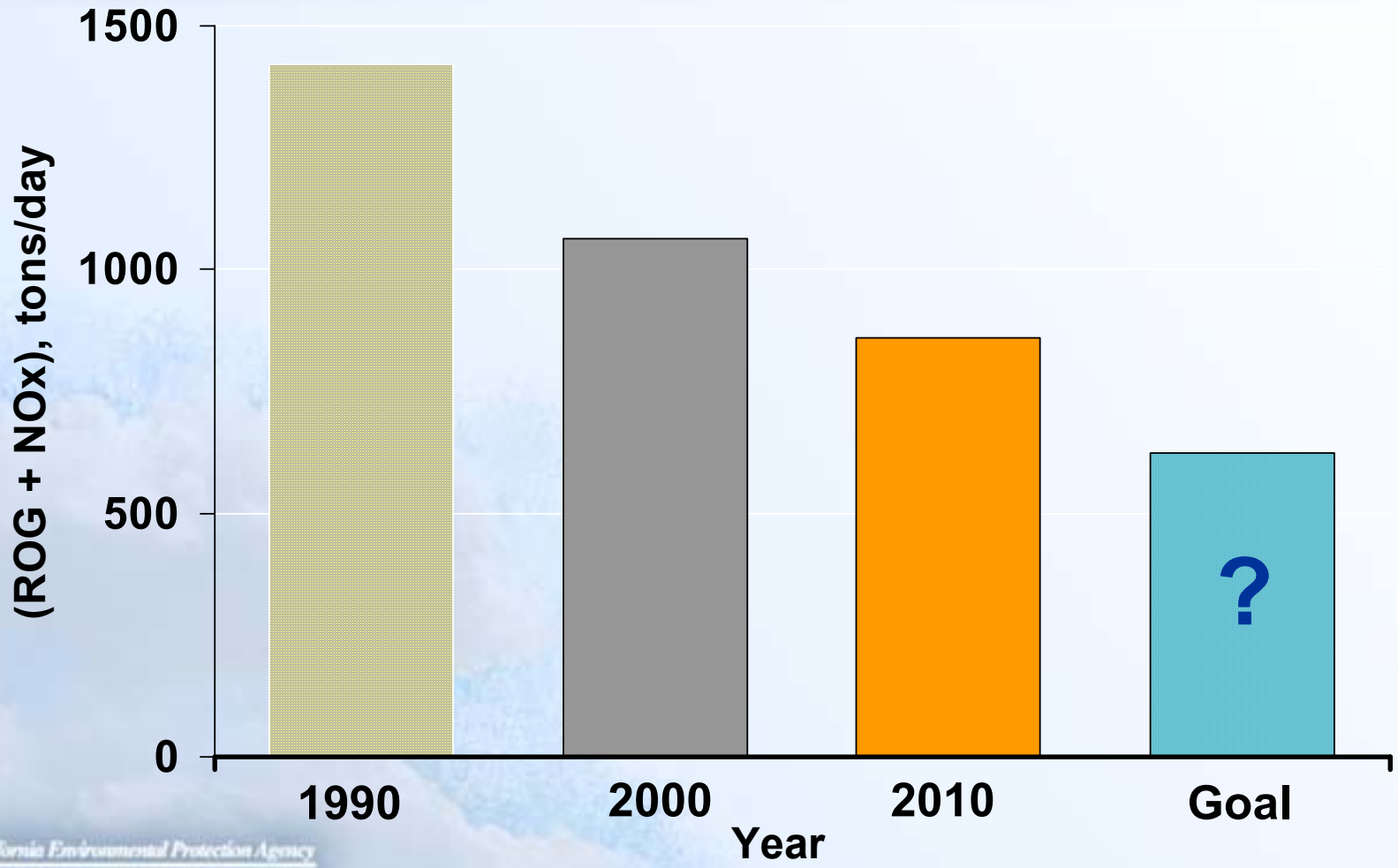
Ozone Forming Emissions and Concentration Trends, 1980-2001



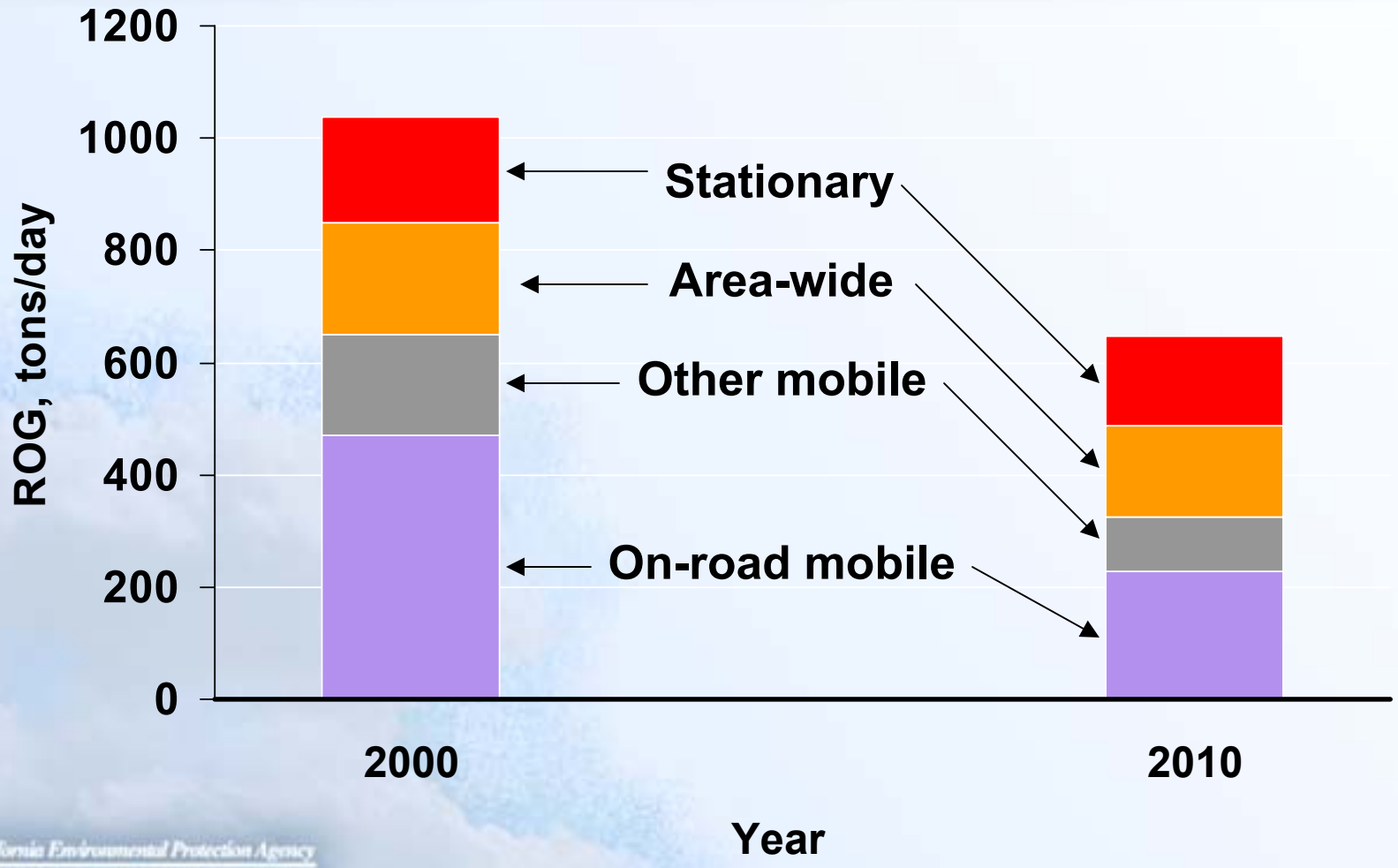
South Coast Ozone Precursor Emissions



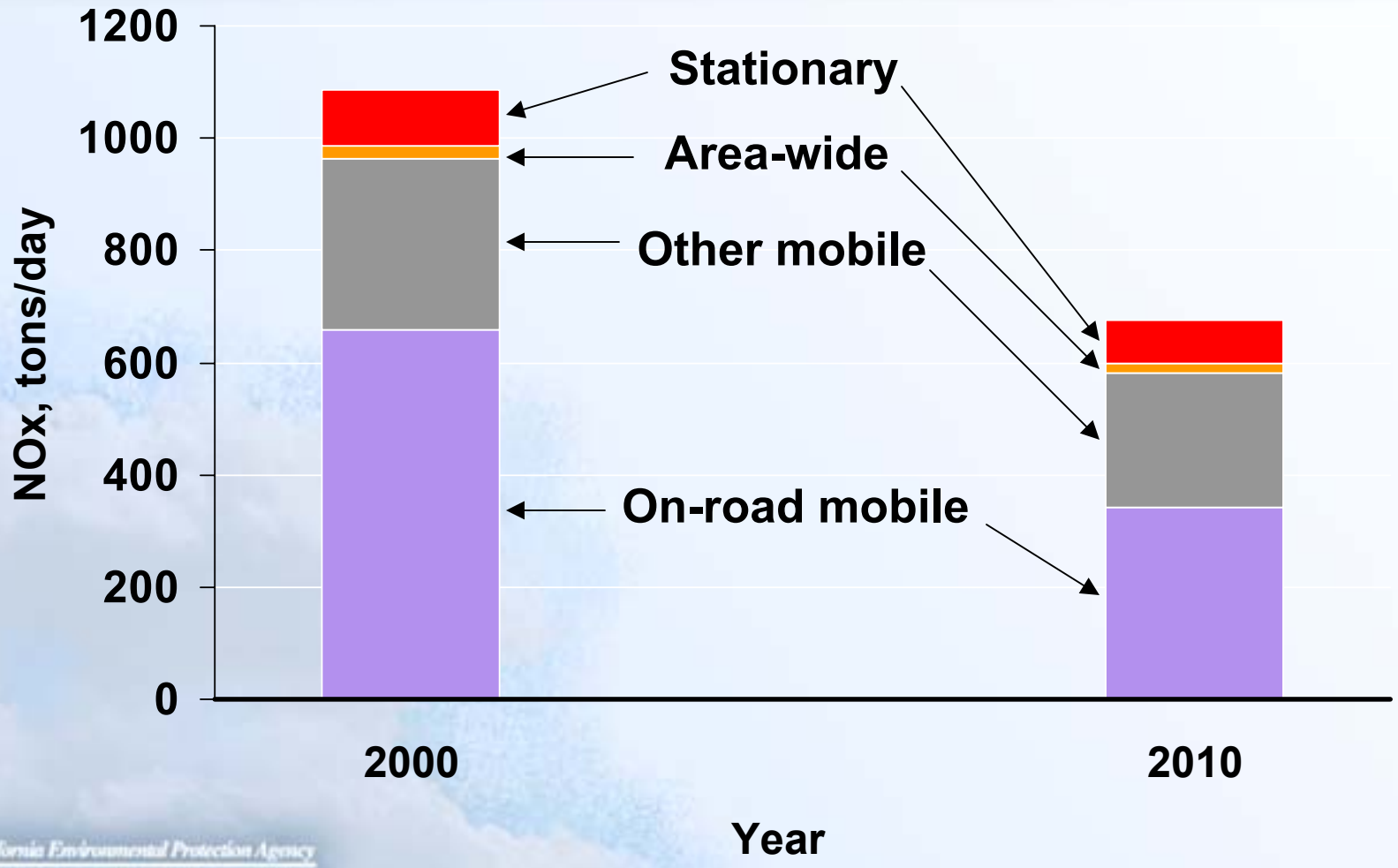
San Joaquin Valley Ozone Precursor Emissions



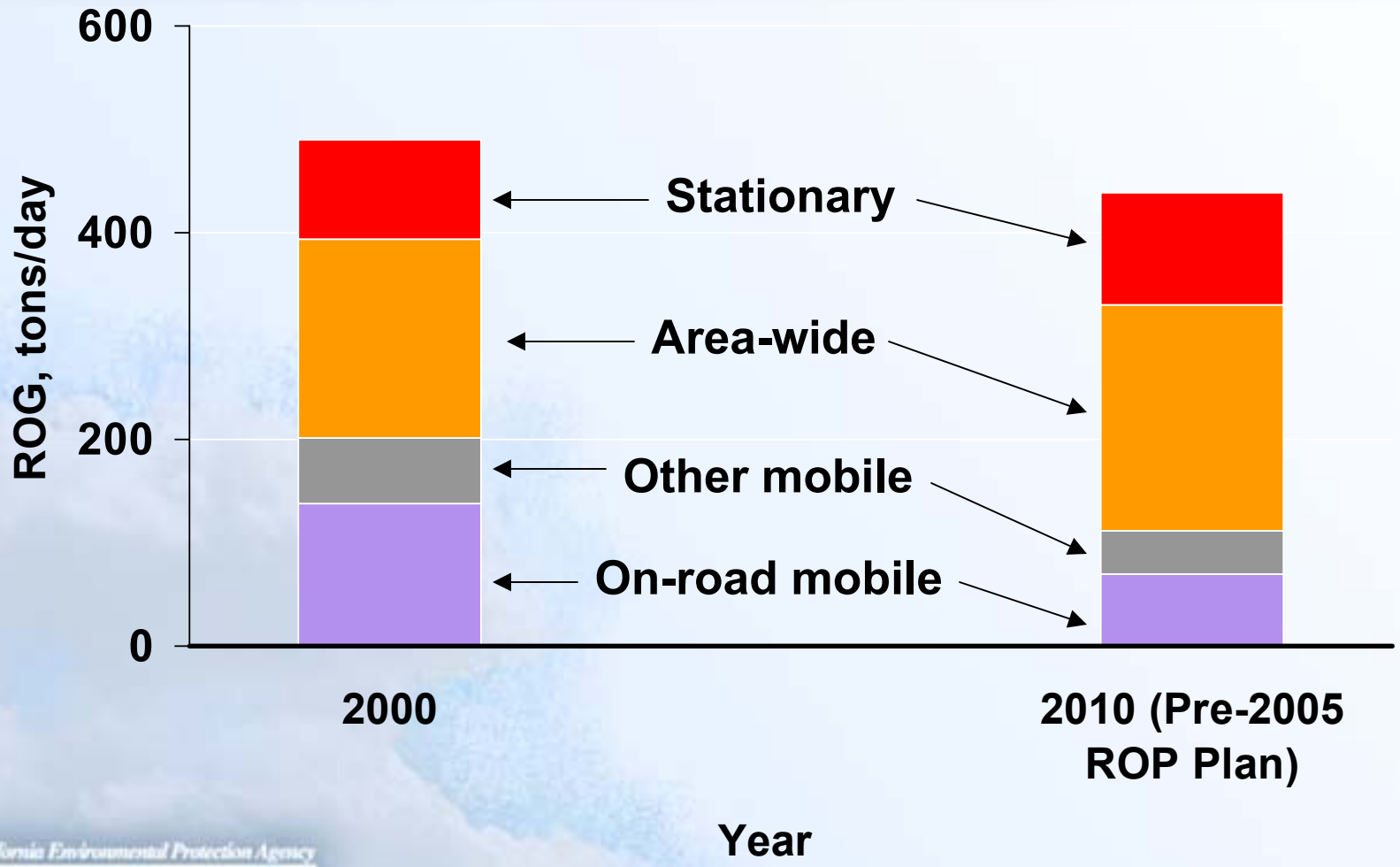
South Coast Emissions -- Reactive Organic Gases (ROG)



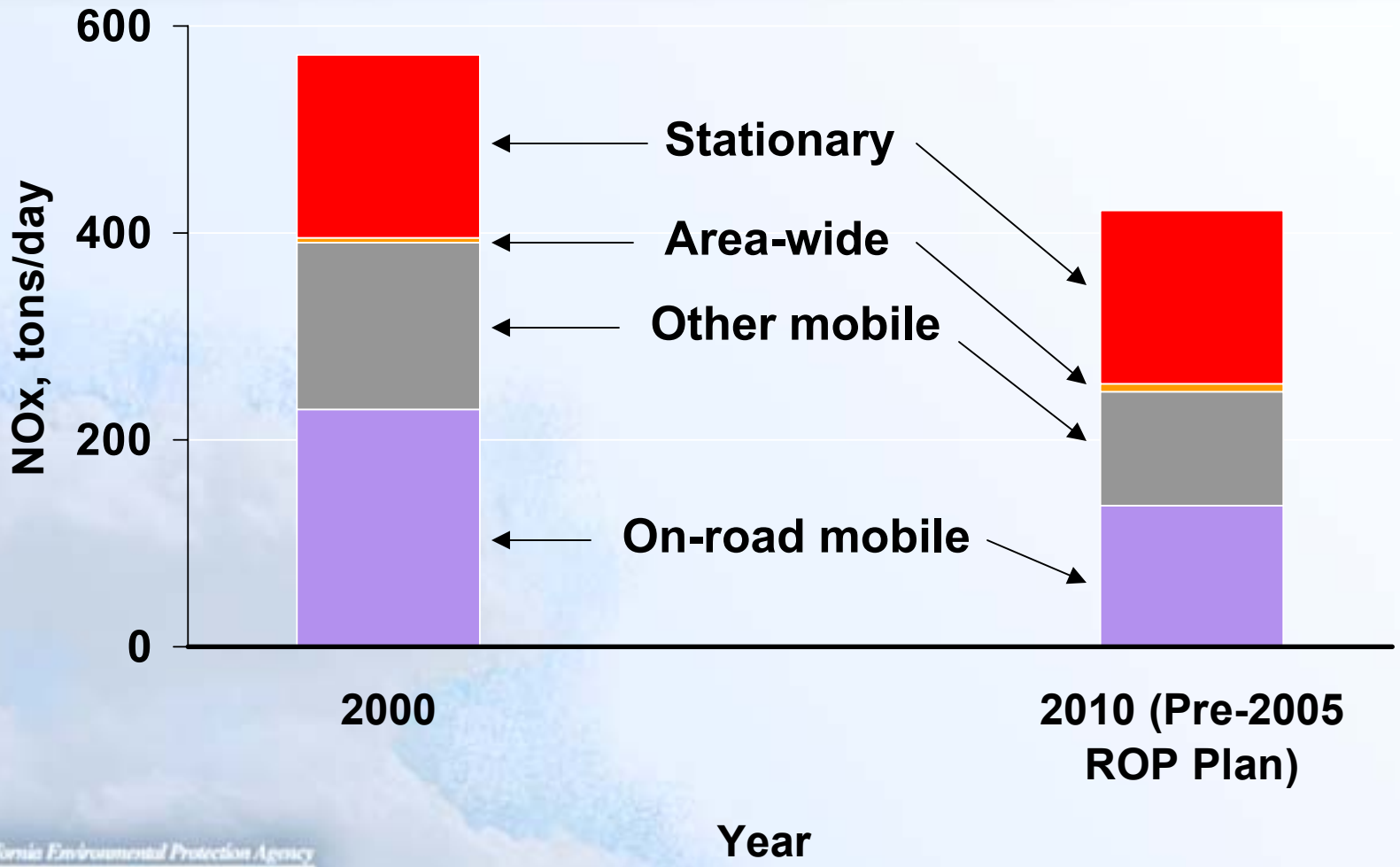
South Coast Emissions -- Oxides of Nitrogen (NOx)



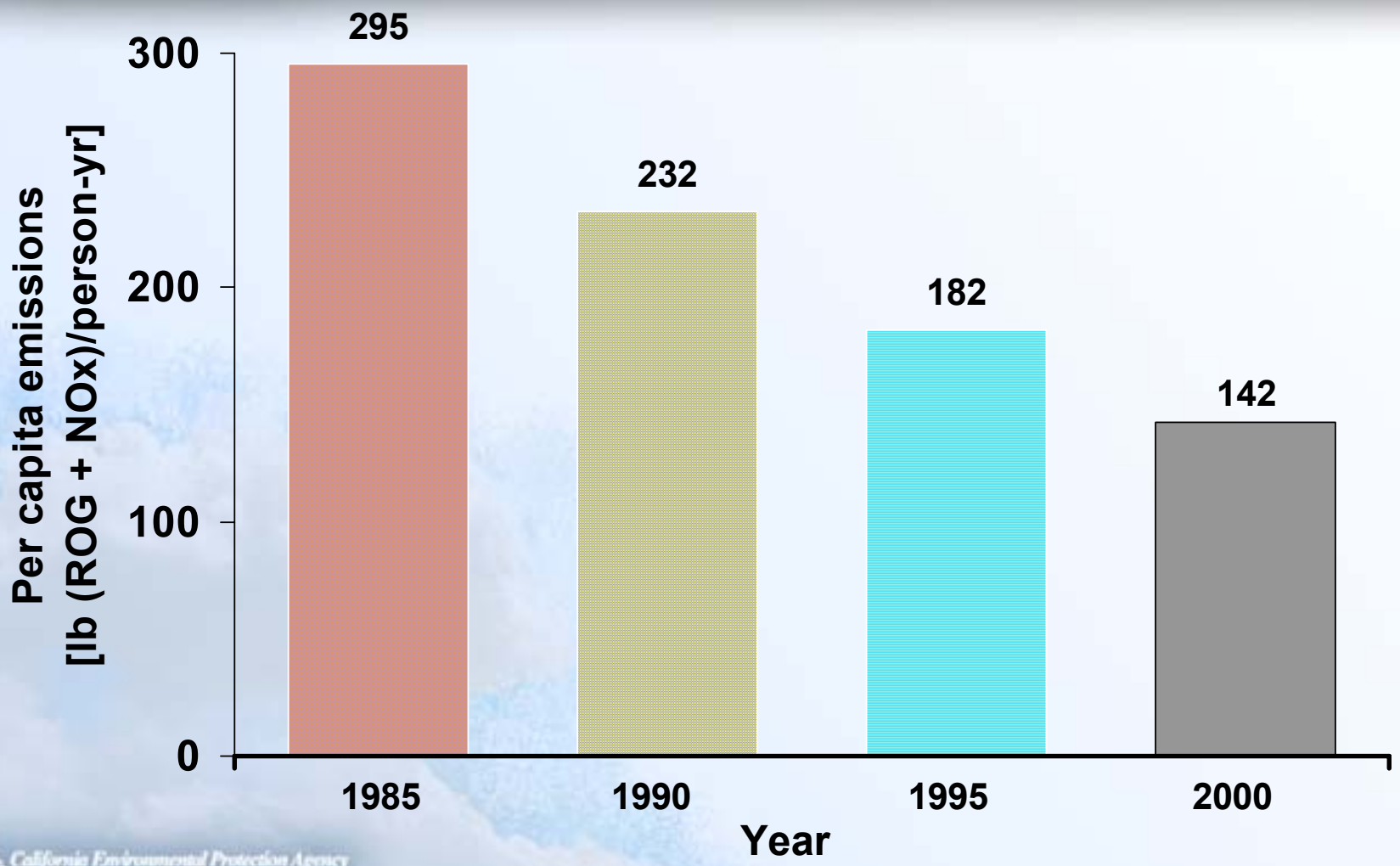
San Joaquin Valley Emissions -- Reactive Organic Gases (ROG)



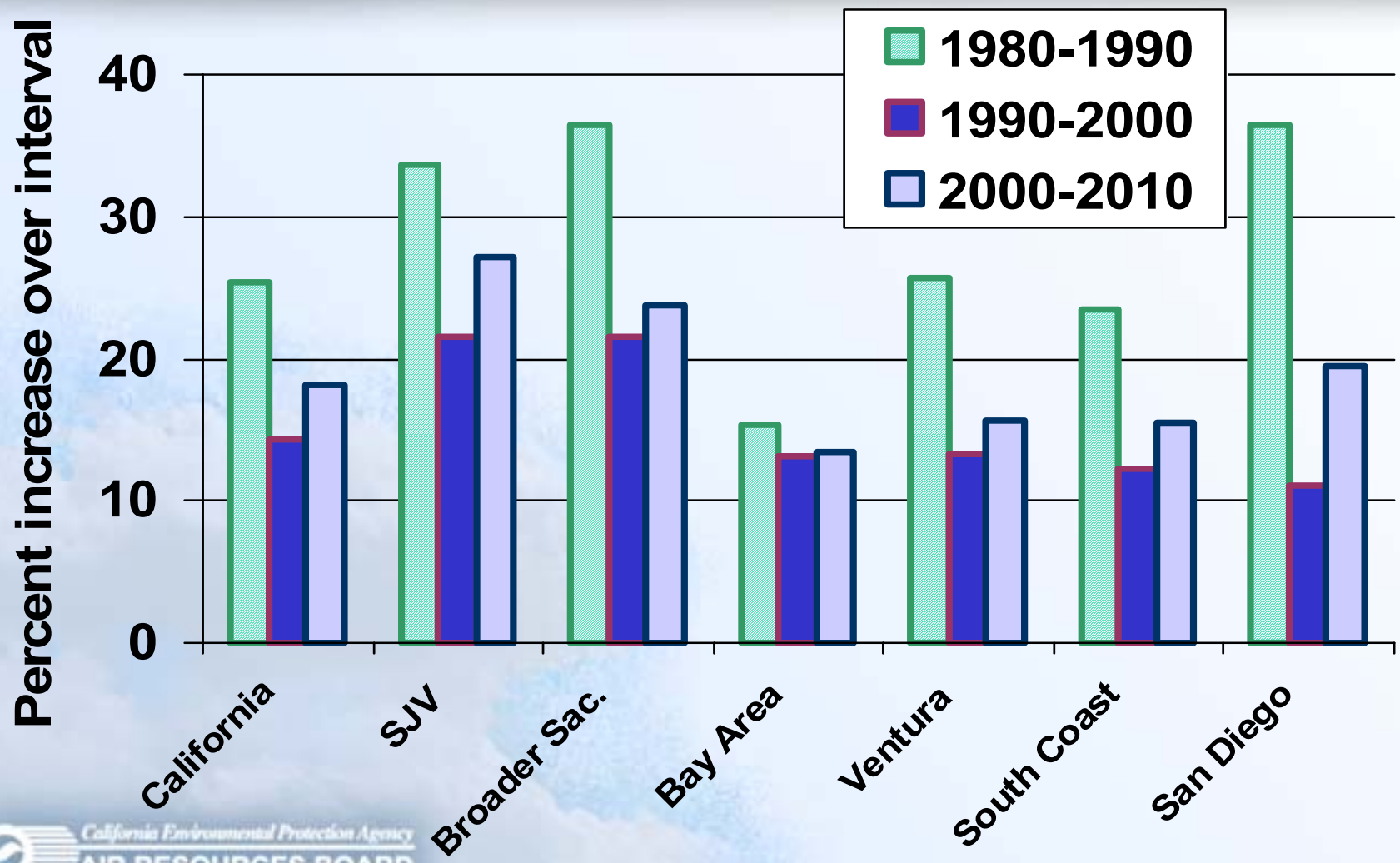
San Joaquin Valley Emissions -- Oxides of Nitrogen (NOx)



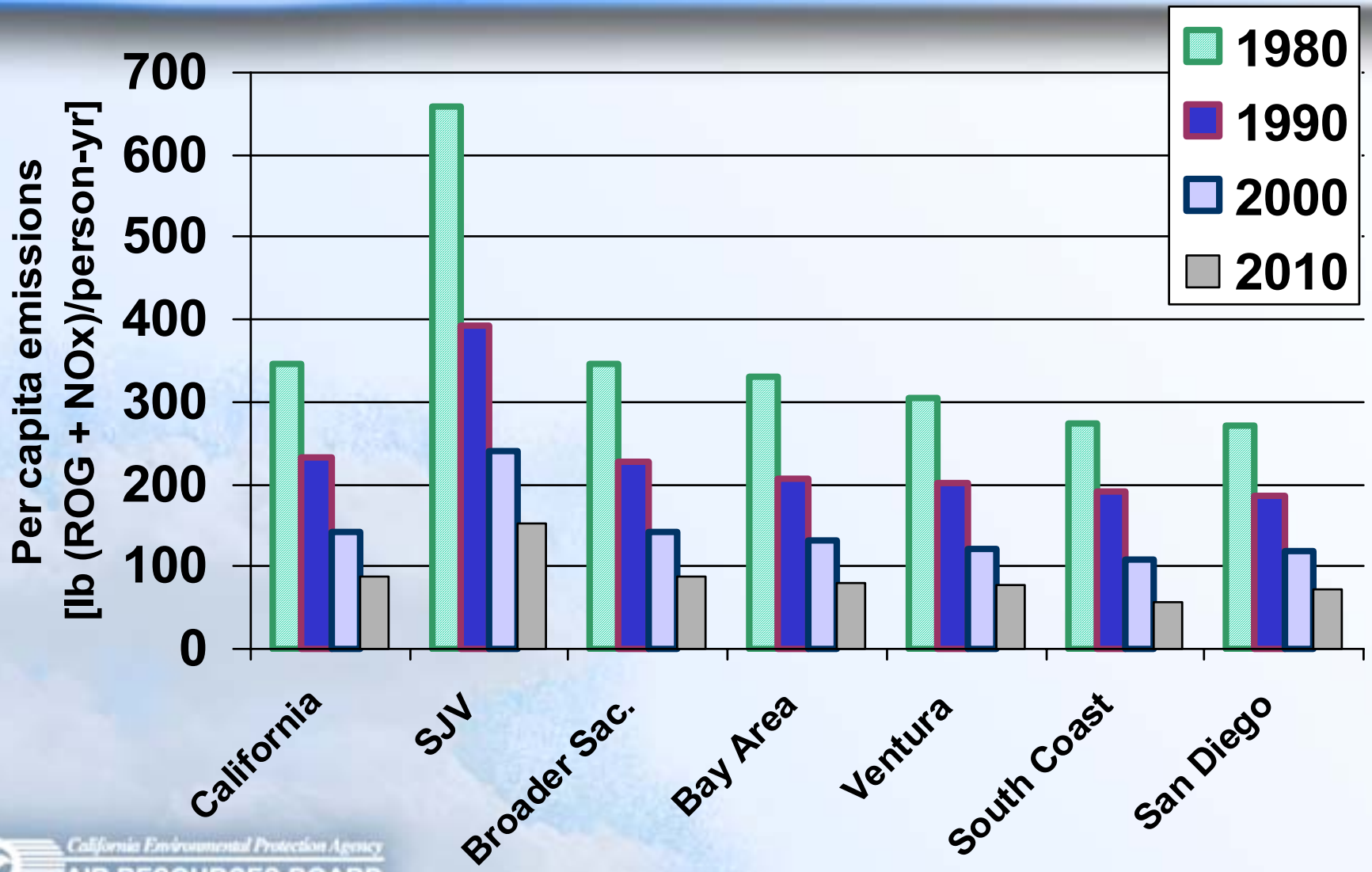
Statewide Emissions Per Capita



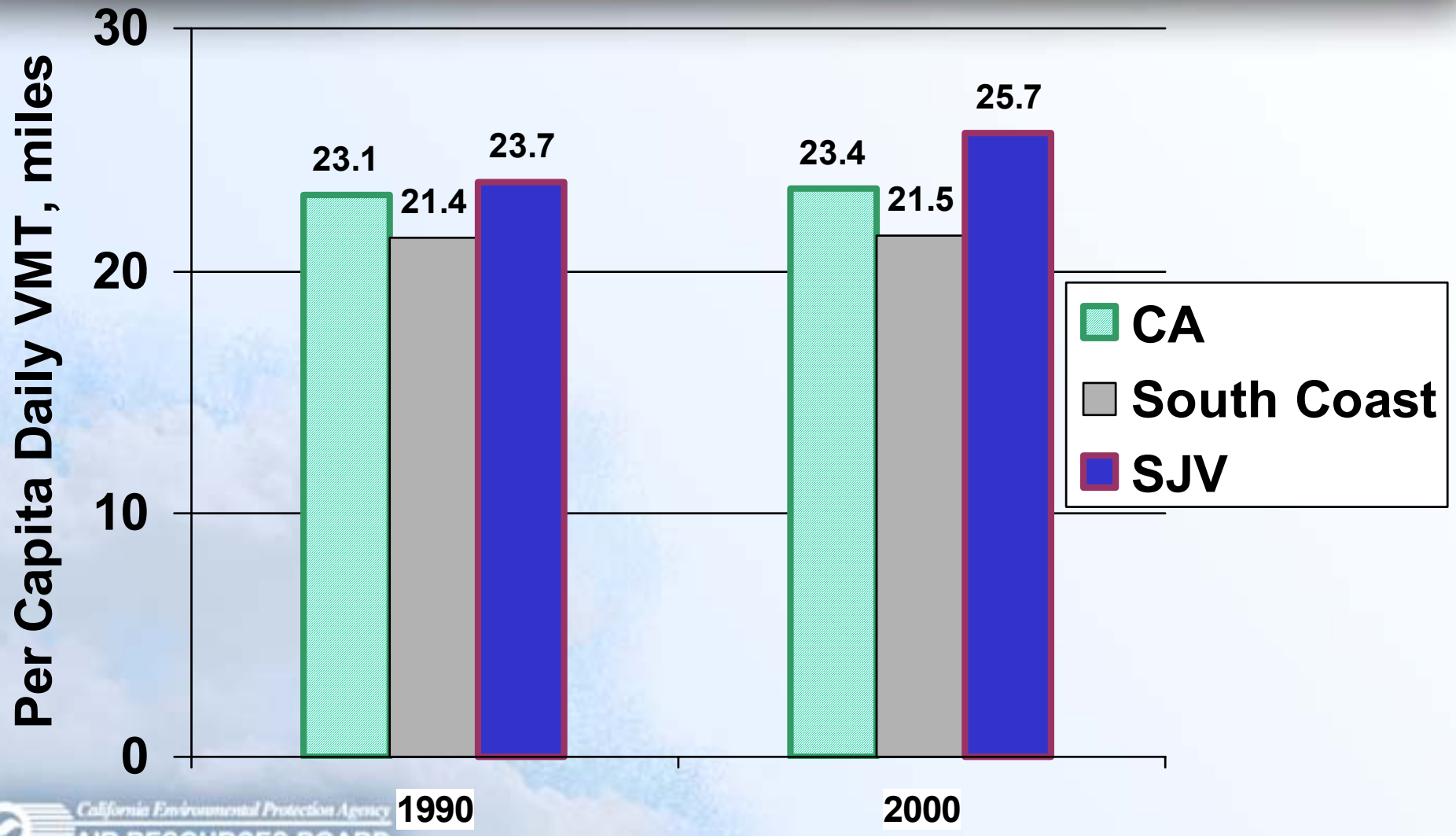
Population Growth by Region



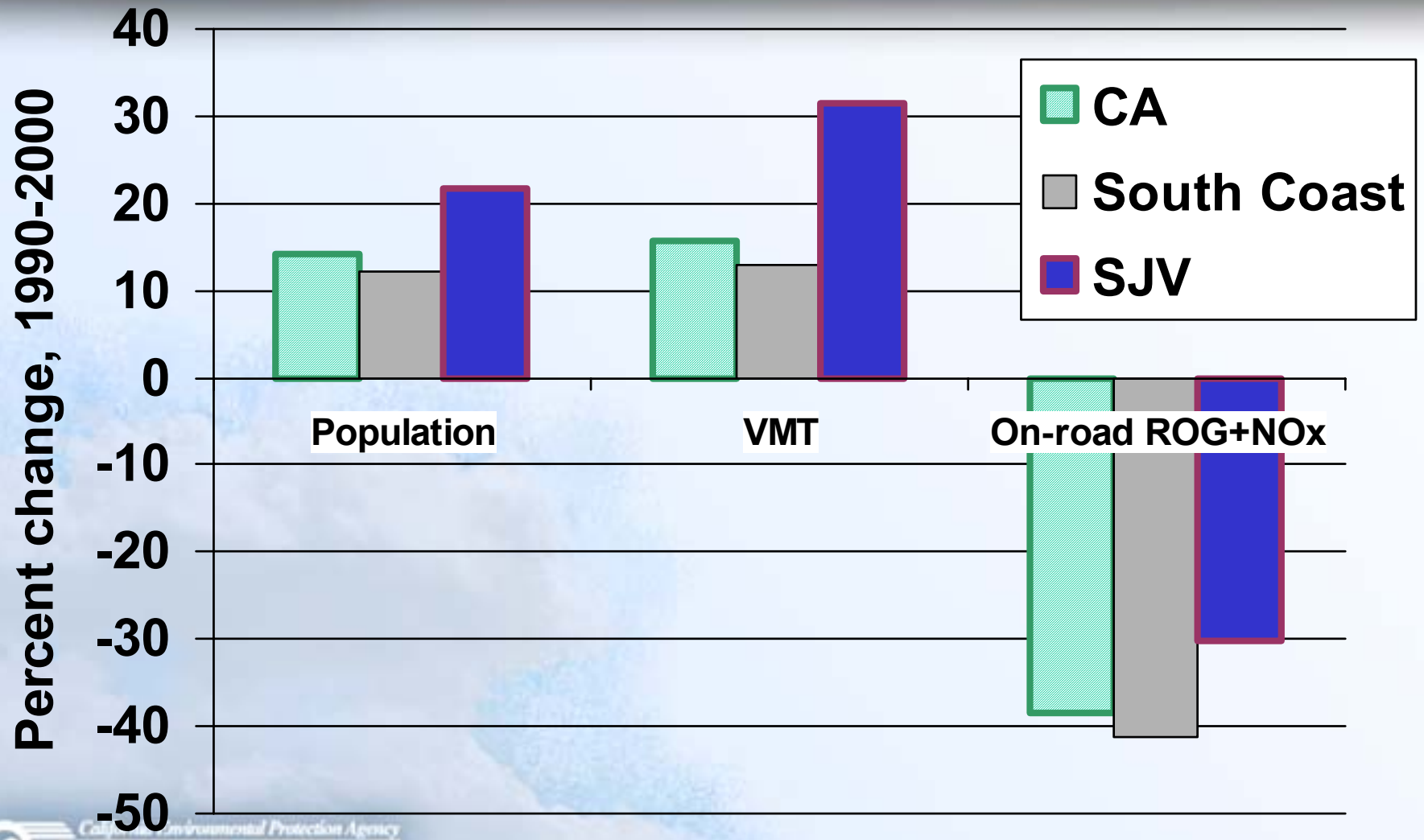
Per Capita Emissions by Region



Comparison of Per Capita Daily Vehicle Miles Traveled



Comparison of Growth to Emission Reductions



Types of Emission Inventories

- Ozone: ROG and NOx (summer planning) inventories
- PM10 (summer, fall and winter planning) inventories
- CO (winter planning) inventories
- Day-specific modeling inventories

“Day-specific” Inventories

- Used for modeling in SIPs
- Based on seasonal planning inventories
- Upgraded with data specific to days being modeled

Developing Emissions Estimates

- Emissions vary
  - By time of operation
  - By time of year
  - By other conditions (humidity, temperature, etc.)
- Emission estimates rely on approximations and simplifications
- Stakeholder expertise helps us work with improved information

Categories of Agricultural Emissions

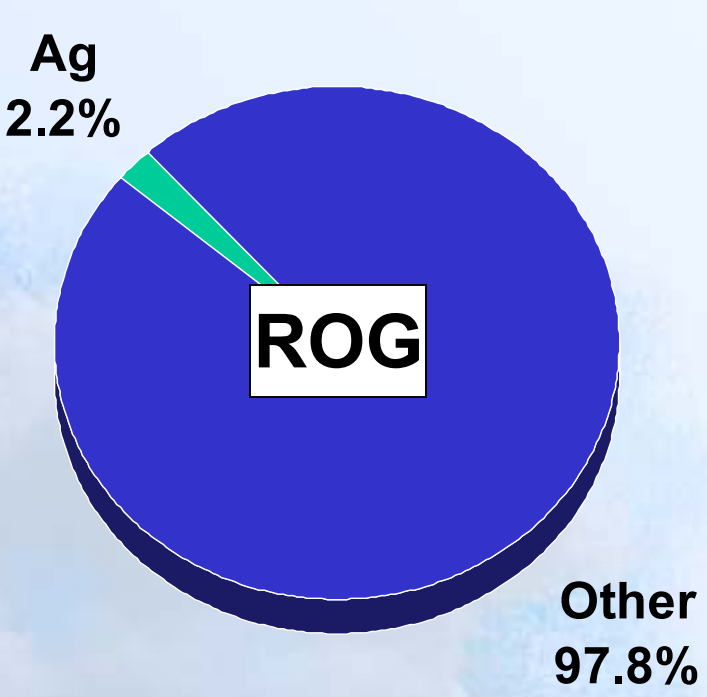
- Farm equipment exhaust
- Processing and handling facilities
- Irrigation pump engines
- Livestock
- Pesticides
- Agricultural burning
- Field and orchard operations
- Windblown dust
- Unpaved roads

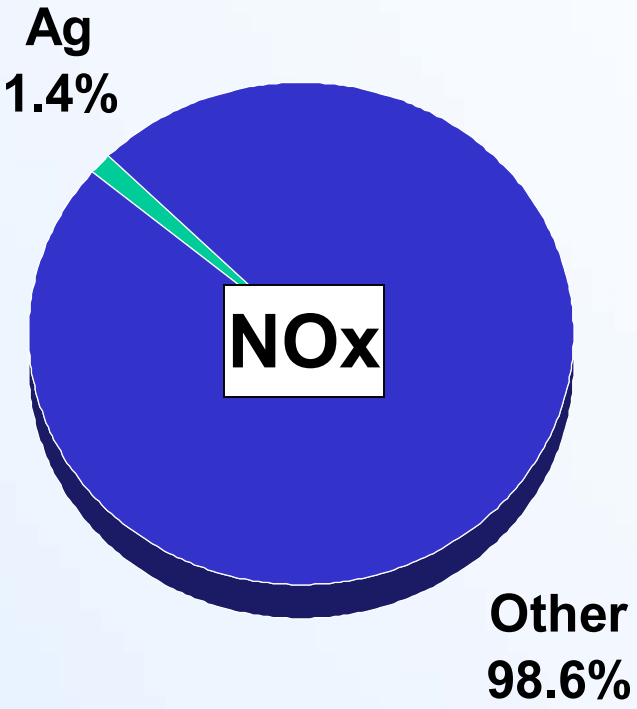
Computing Agricultural Emissions

Emissions = Activity Data x Emission Factor

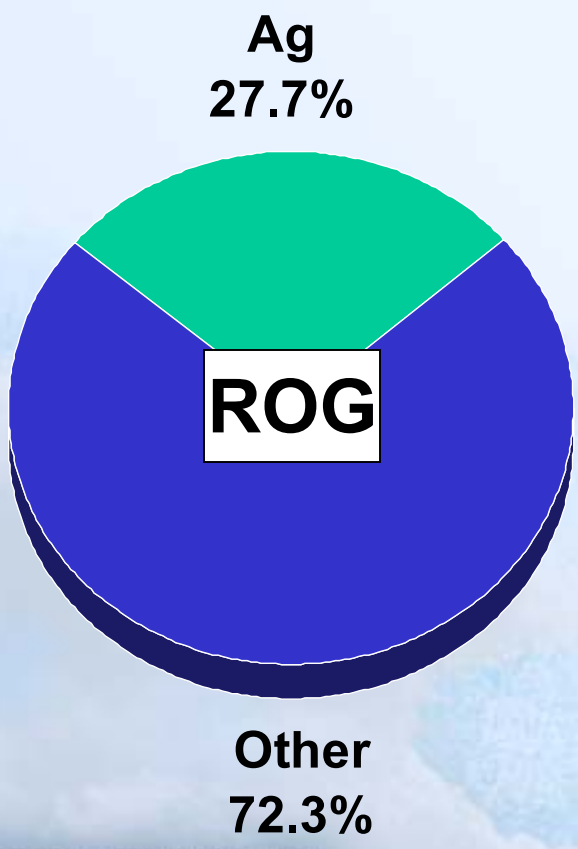
- **Activity Data**
  - Hours of operation on an engine
  - Number of head for livestock
- **Emission Factors**
  - Engine NOx emission rate in grams per bhp-hr
  - Pounds reactive organic gas per head per year

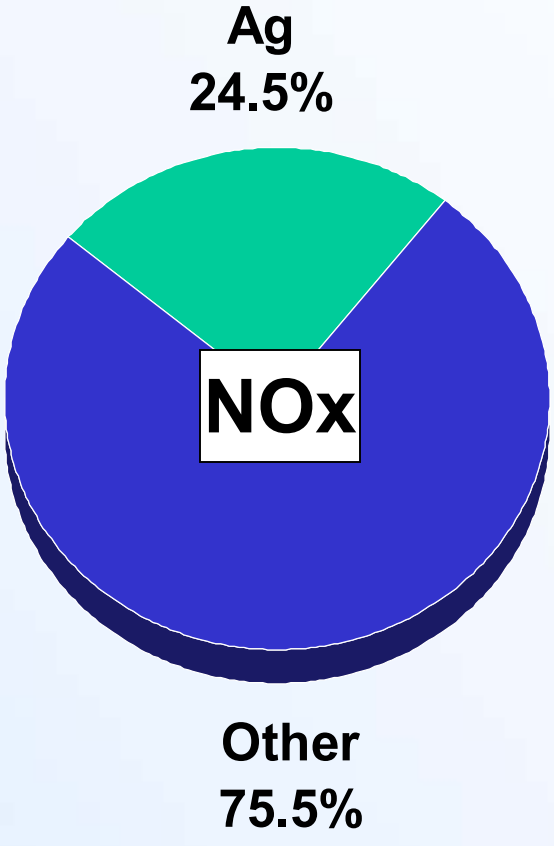
Contribution of Agriculture Emissions in 2000, South Coast



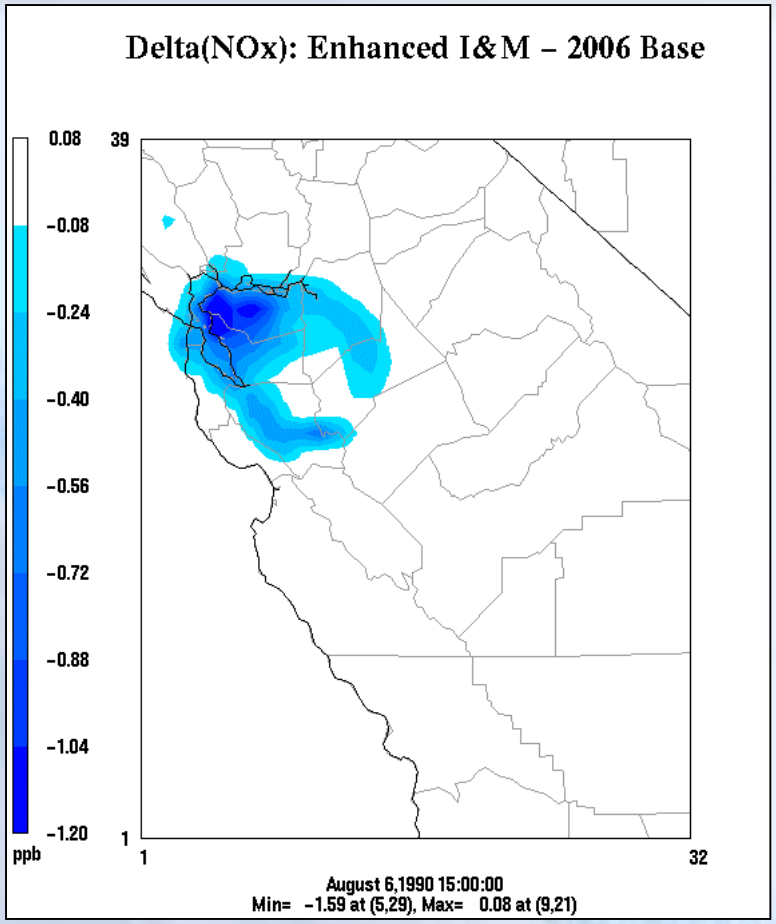


Contribution of Agriculture Emissions in 2000, SJV





Modeling



- Allows us to predict future year air quality based on future emissions
- Shows spatial benefit of control strategies
- Assesses impacts of upwind emission reductions

Transport Occurs Both In and Out of Nonattainment Areas

- Bay Area Smog Check Bill signed
- Upgraded modeling will provide greater understanding

Central California Air Quality Study

- California Regional Particulate Air Quality Study (CRPAQS)
- Central California Ozone Study (CCOS)
- Public-private partnership
- Policy Committee oversees technical work
- Technical Committee informs Policy Committee on technical work

Your Participation is Vital

- Open, interactive SIP Process affords many opportunities for stakeholders to provide comments and shape the outcome
- Specific, fixed deadlines for SIP submittal