

## 2008 PM2.5 Plan



**2<sup>nd</sup> Draft-**  
February 14, 2008

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February 25-26, 2008  
San Joaquin Valley  
Air Pollution Control District

# What Does this Plan Do?

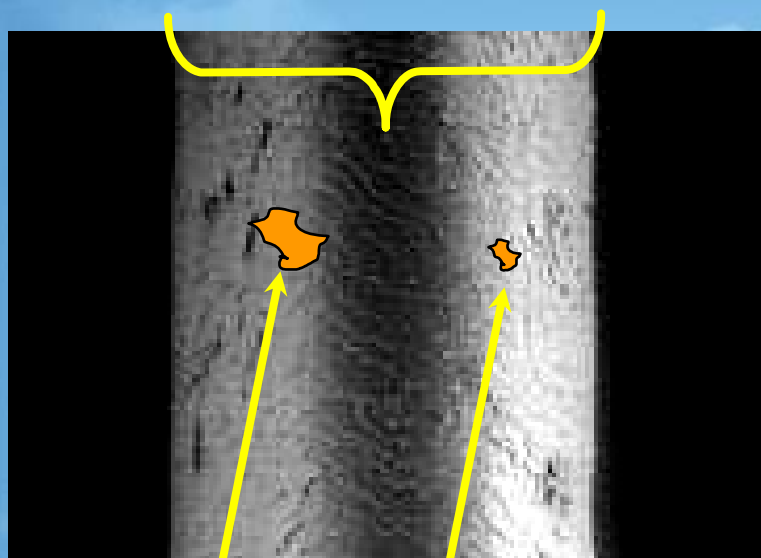
- Brings the entire Valley into attainment of the PM<sub>2.5</sub> standard before 2015
- Makes significant progress towards the 2006 PM<sub>2.5</sub> standard
- Lays the groundwork for future technology development
- Targets NO<sub>x</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub> emissions with a comprehensive list of regulatory and incentive-based measures

# What's New in This Draft?

- Summary of public comments that were received as well as the District's responses and corresponding plan revisions
- ARB's atmospheric modeling, which confirms the necessity and effectiveness of the emissions control strategy
- Weight of evidence evaluation
- Quantified progress towards the 2006 federal 24-hour standard: Valley sites will have 24-hour values at  $45 \mu\text{g}/\text{m}^3$  or lower in 2014

# The San Joaquin Valley's First PM2.5 Plan

Human Hair  
(60  $\mu\text{m}$  diameter)



PM10  
(10  $\mu\text{m}$ )

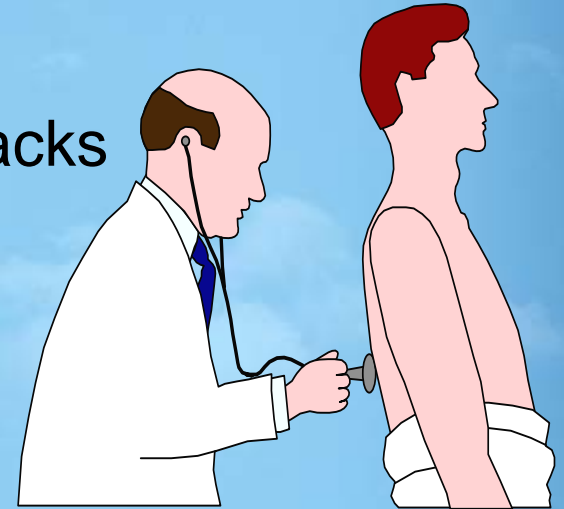
PM2.5  
(2.5  $\mu\text{m}$ )

**Annual PM2.5  
Standard = 15  $\mu\text{g}/\text{m}^3$**

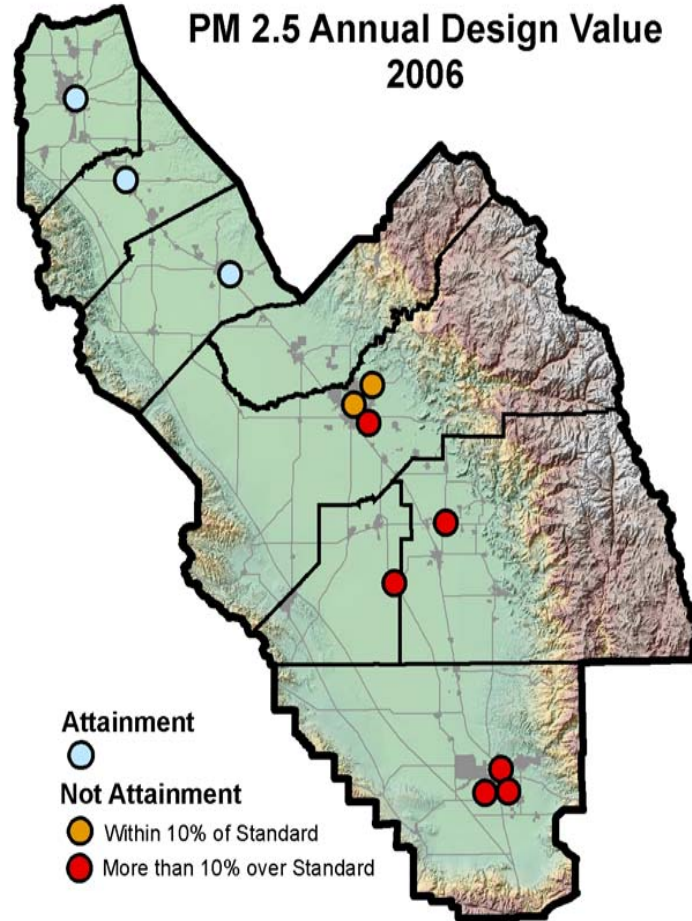
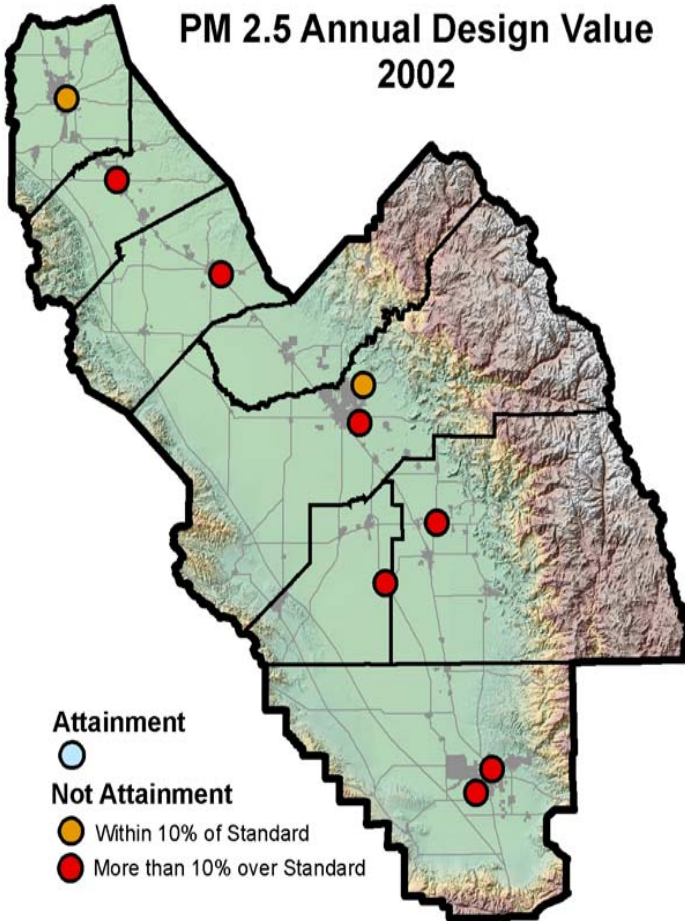
- Builds on the progress and strategies of the District's PM10 and ozone plans, including the *2007 Ozone Plan*
- PM2.5 = particles 2.5 microns and smaller
- The *2008 PM2.5 Plan* is the plan required by EPA's first PM2.5 standard, set in 1997

# Health Effects of PM2.5

- Aggravated asthma
- Increased respiratory symptoms – irritation of the airways, coughing, difficulty breathing
- Decreased lung function in children
- Irregular heartbeat and nonfatal heart attacks
- Increased respiratory and cardiovascular hospitalizations
- Chronic bronchitis
- Lung cancer
- Premature death in people with heart or lung disease
- Total cost to the Valley: \$3.2 billion/year



# PM2.5 Progress



Highest Annual  
Design Values  
in the Valley:

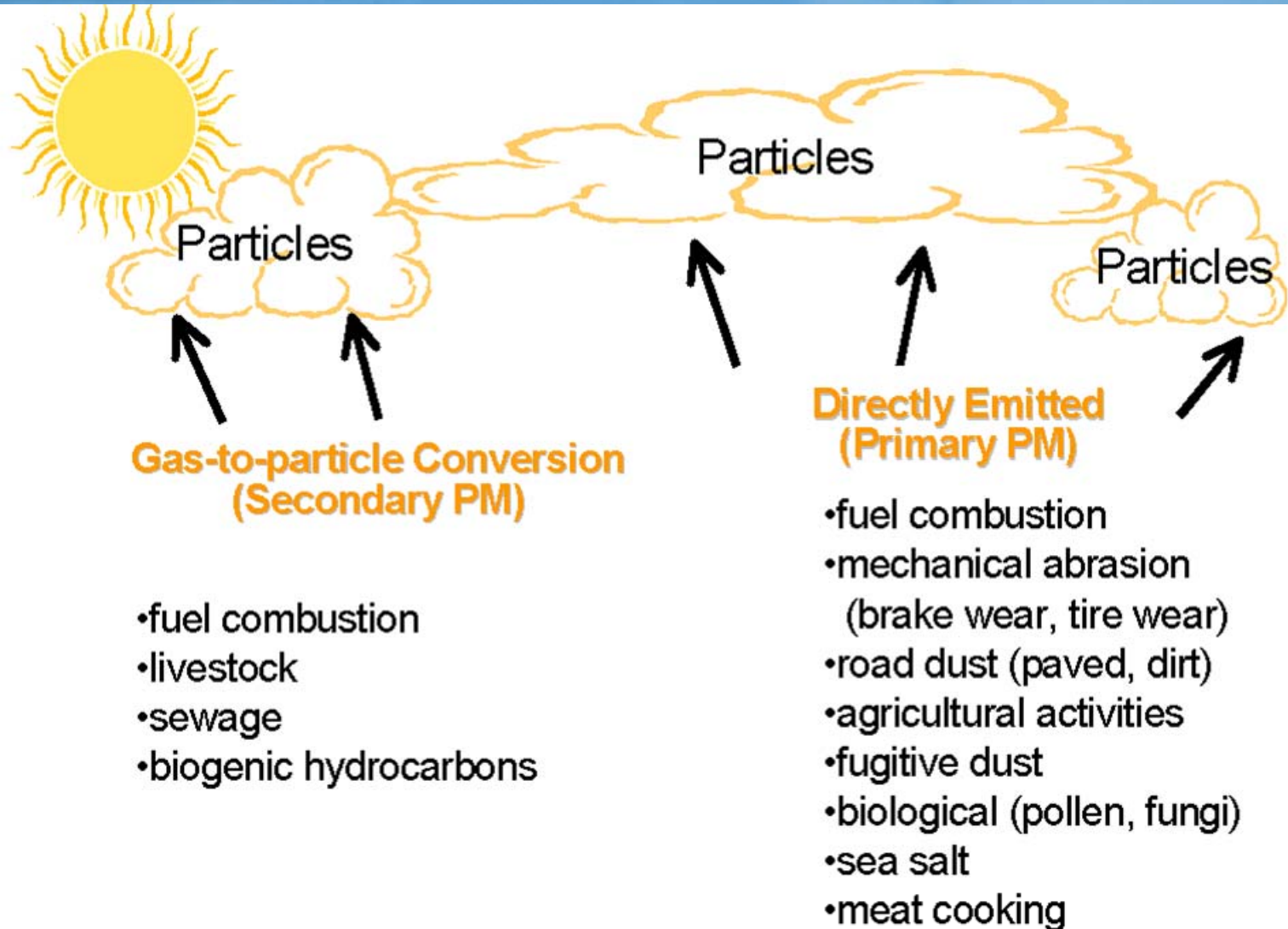
**2002:**

**22.6  $\mu\text{g}/\text{m}^3$**

**2006:**

**18.9  $\mu\text{g}/\text{m}^3$**

# Particulate Sources



Wood-Burning Stoves



Power Plants



Heavy Duty Diesel Engines



Natural Sources



**Fine Particles Can Be Emitted Directly or Formed in the Air from Gases**

Cars and Trucks



Non-Road Vehicles



Forest Fires

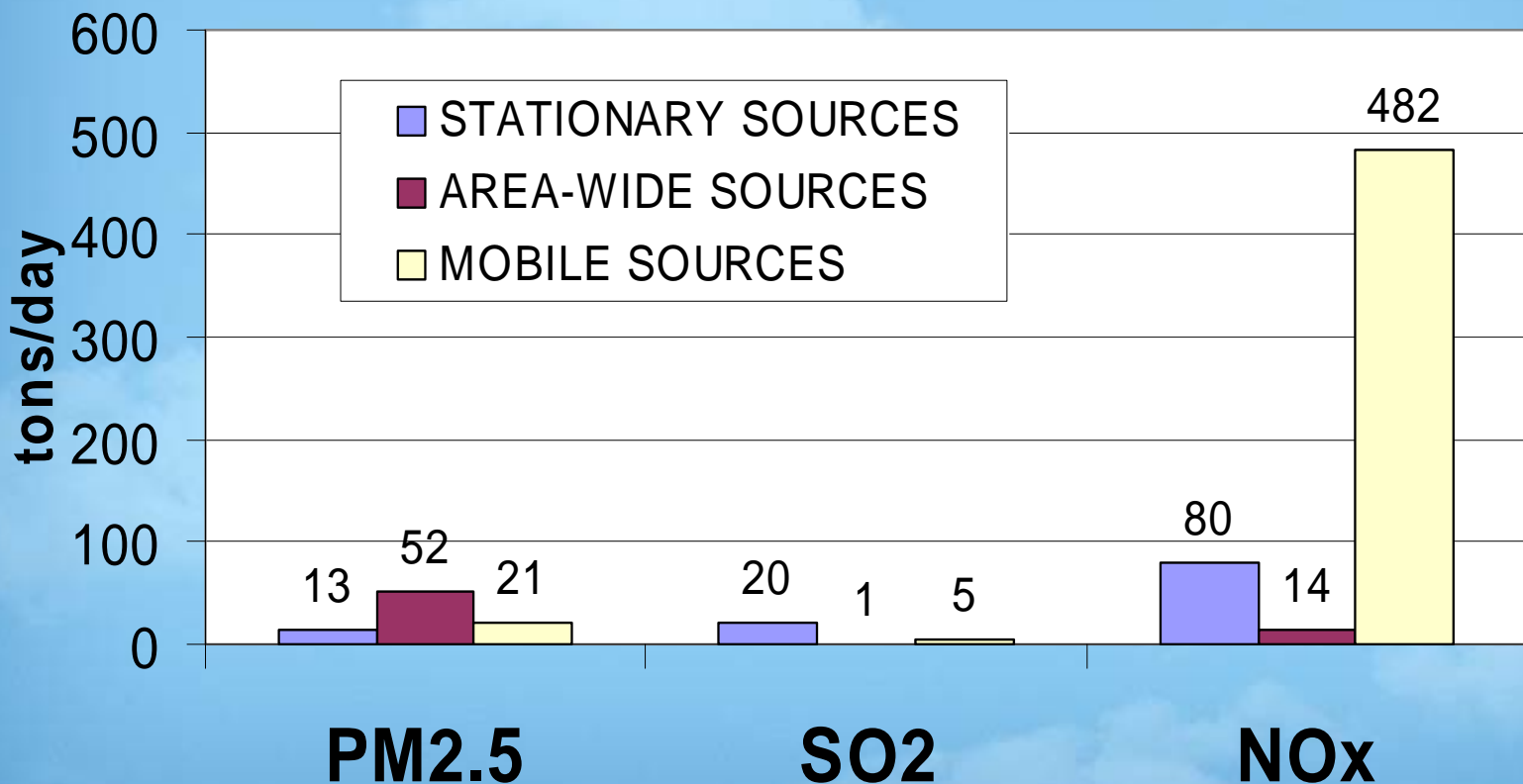


Industrial Sources



# PM2.5 and Precursors

## San Joaquin Valley Source Contributions

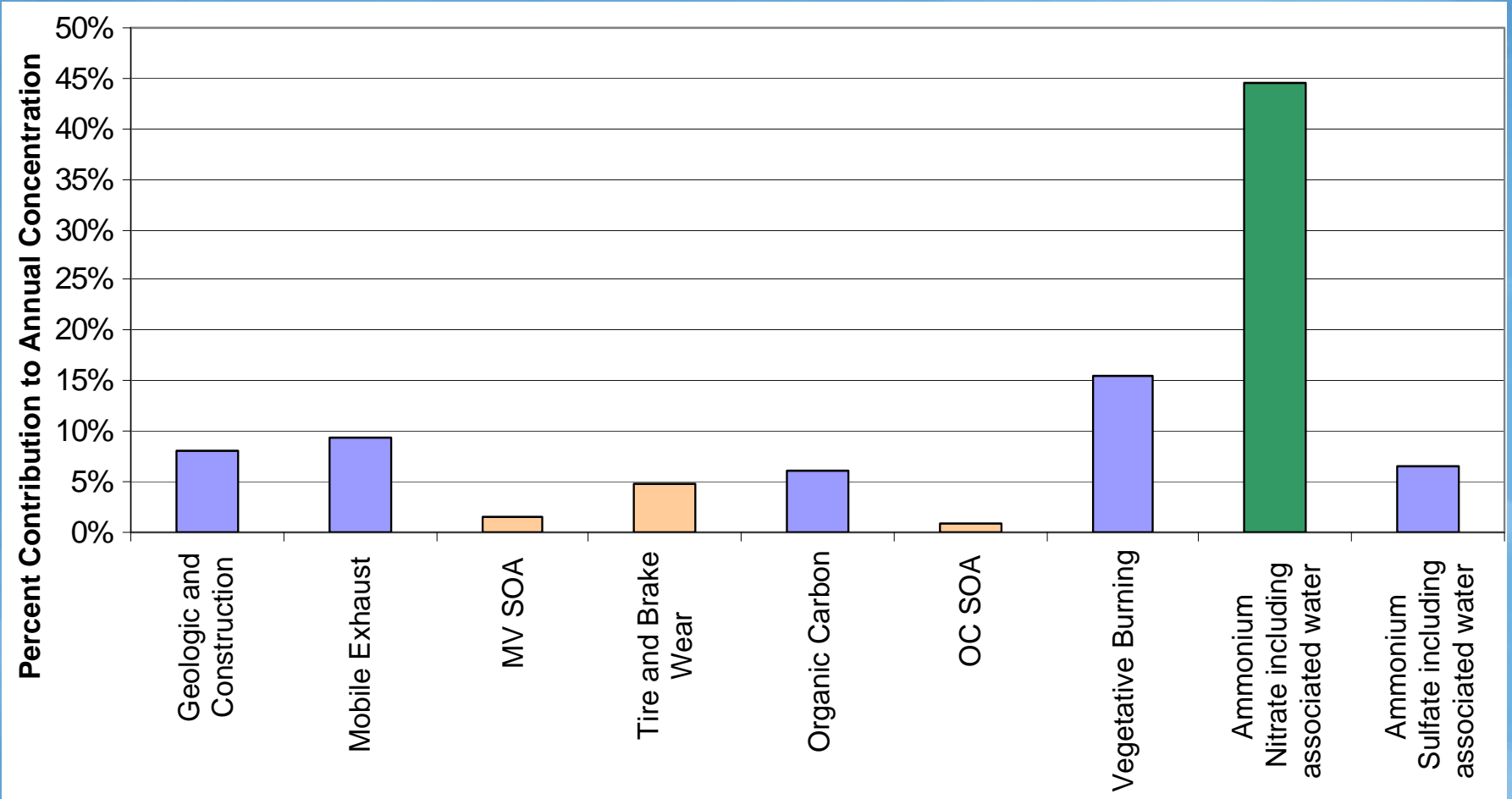


# Using Modeling to Determine the Reductions Needed

- This Draft Plan utilizes receptor modeling to evaluate the years 2009-2014 and project the Valley's attainment outlook
- EPA approved use of the District's sophisticated receptor modeling technique to provide a conservative evaluation for the PM10 Plan
- ARB's regional modeling evaluates 2014 and confirms the Valley's attainment outlook
- ARB's regional modeling also evaluates additional sites and checks for unmonitored areas with poor air quality

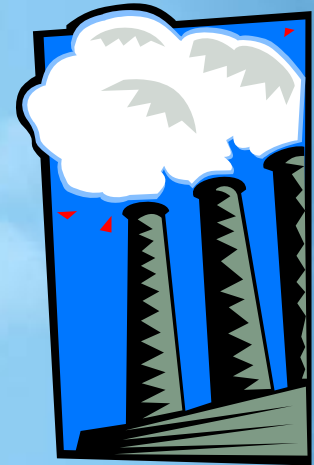


# Receptor modeling shows NOx reductions are most effective



# Plan Control Measures

- ARB strategy approved in *Revised State Strategy for California's 2007 SIP*
- The District evaluated control measures from the *2007 Ozone Plan* for opportunities for additional reductions
- The District also evaluated measures to reduce directly emitted PM<sub>2.5</sub> and SO<sub>2</sub>
- Appendix I shows evaluation of source categories for potential controls
- Chapter 6 shows draft control measure commitments, adoption schedule, and projected reductions



# Plan Control Measures

## Rule Commitments:

Open Burning (Rule 4103)

Boilers, Steam Generators, and Process Heaters  
(Rules 4306, 4307, & 4308)

Internal Combustion Engines (Rule 4702)

Glass Melting Furnaces (Rule 4354)

Residential Water Heaters (Rule 4902)

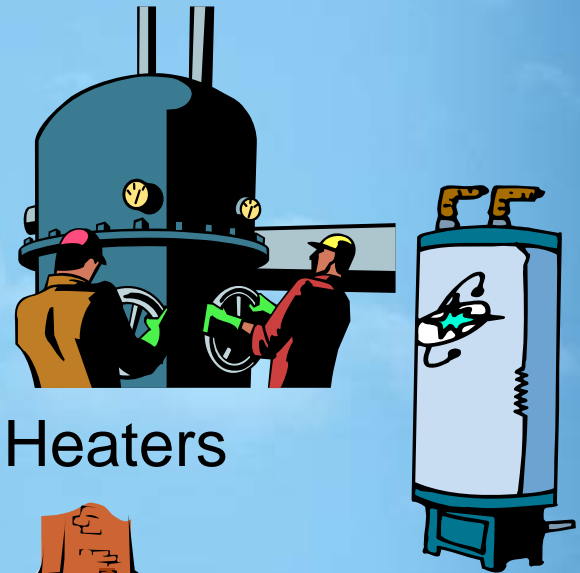
Residential Furnaces (Rule 4905)

Wood Burning Fireplaces & Wood Burning Heaters  
(Rule 4901)

Flares (Rule 4311)

Commercial Charbroiling (Rule 4692)

Employer-based Trip Reduction



# Rule 4901: Wood Burning Fireplaces & Wood Burning Heaters

- The current Rule 4901 has raised public awareness and achieved significant emissions reductions
- The District is considering lowering the no burn threshold to  $35 \mu\text{g}/\text{m}^3$ , which is equivalent to about 36 no burn nights in Fresno County over a 120-day period
- The District is also considering inclusion of chimineas, fire pits, and outdoor fireplaces in no-burn calls
- Rule development will begin this fall, and the rule should be adopted mid- to late-2009
- Rule could achieve an average of 1.4 tpd of PM<sub>2.5</sub> reductions in the winter, or about 14.8 tons on any Valley-wide no burn night



# Other Plan Commitments

## Feasibility Studies:

Conservation Management Practices (Rule 4550)

Solid Fuel-Fired Boilers, Steam Generators and Process Heaters (Rule 4452)

Small Spark-Ignited Engines and Agricultural Spark-Ignited Engines (Rule 4702)

Prescribed Burning (Rule 4106)

Cotton Gins (Rule 4204)

Fugitive PM10 Prohibitions (Reg VIII)

Fireworks

Feasibility Studies help determine the best control strategy for future plans

Healthy Air Living

Incentive Programs

Fast Track Measures

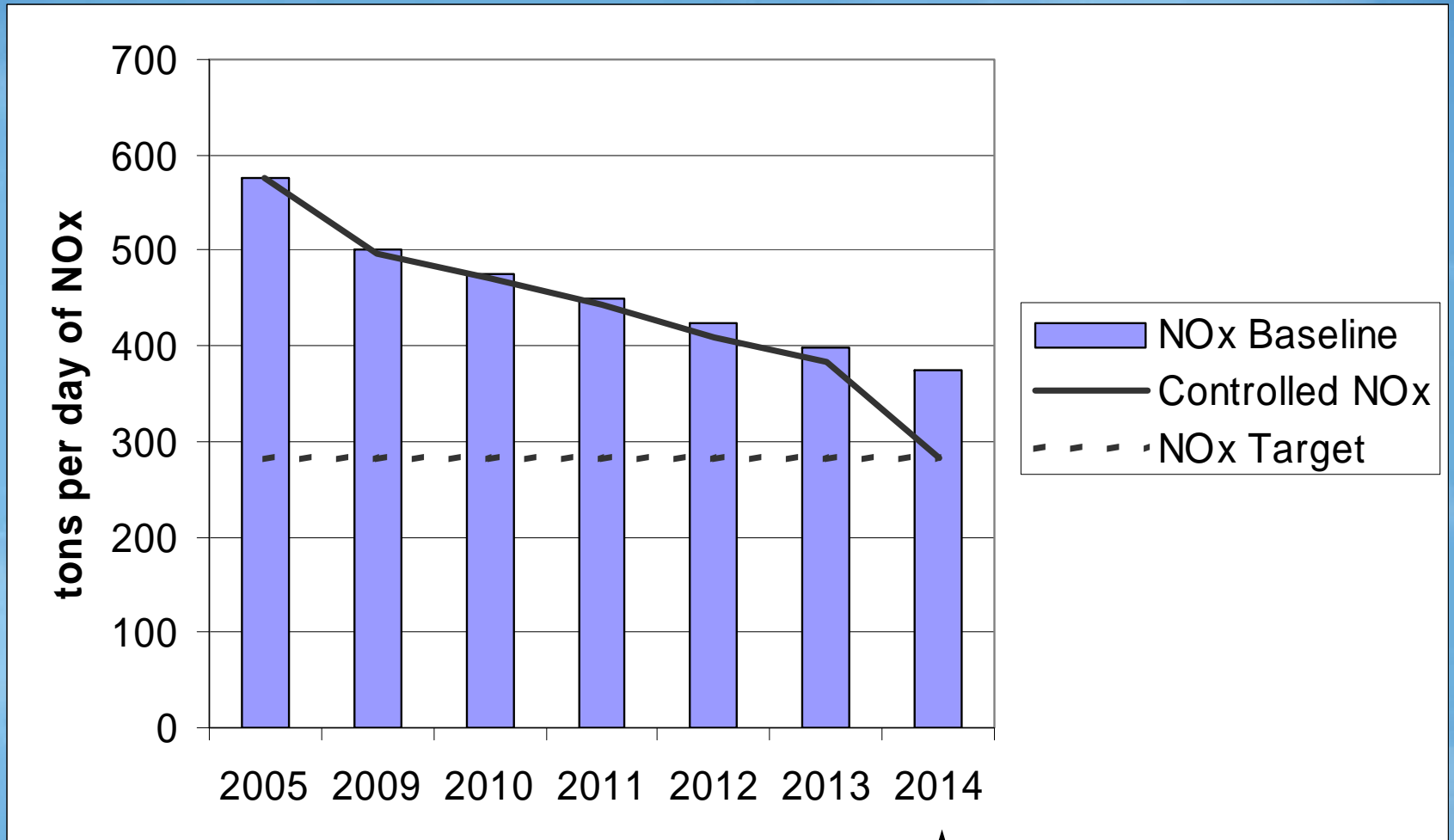


# Healthy Air Living

- Picks up where “Spare the Air” left off to create a tool and strategy-focused initiative to accelerate the path to cleaner air
- Partnerships with municipalities, businesses, and various community organizations
- Includes a focus week in mid-July as well as a year-round strategy
- Healthy Air Living Summit will be held March 25-27, 2008 (one day each in Bakersfield, Fresno, and Modesto)
- [www.healthyairliving.com](http://www.healthyairliving.com) will be launching soon



# Plan Strategy Should Bring Valley into PM2.5 Attainment



# ARB Emission Reductions are Substantial

- Due to the innovative nature of ARB's new measures and the technical complexities of implementation, the full reductions from the ARB strategy will not occur until 2014
- Because ARB has jurisdiction over the majority of PM<sub>2.5</sub> precursor emissions, the ARB mobile source strategy is critical for attainment and is the rate-limiting factor for attainment

# Expeditious Attainment

The District has several reasons to expect attainment before 2014:

- Rule development process can sometimes reveal additional reduction potential
- The District incentive program achieves additional reductions that are not quantified for attainment projections
- ARB measures could achieve some pre-2014 reductions that could contribute to expeditious attainment



# ARB Presentation

# Next Steps

- Comment period on 2<sup>nd</sup> Draft *2008 PM2.5 Plan* closes March 5, 2008
- 30-day comment period on the Proposed Plan is expected to be held from March 13-April 14, 2008
- Opportunity for comment at public hearing on April 30, 2008

# Comments and Questions

# Send comments to:

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(559) 230-5800

**Comments due March 5, 2008 at 5:00 pm**

More information (including email lists)

is available at

[www.valleyair.org](http://www.valleyair.org)