

Draft *2008 PM_{2.5} Plan*

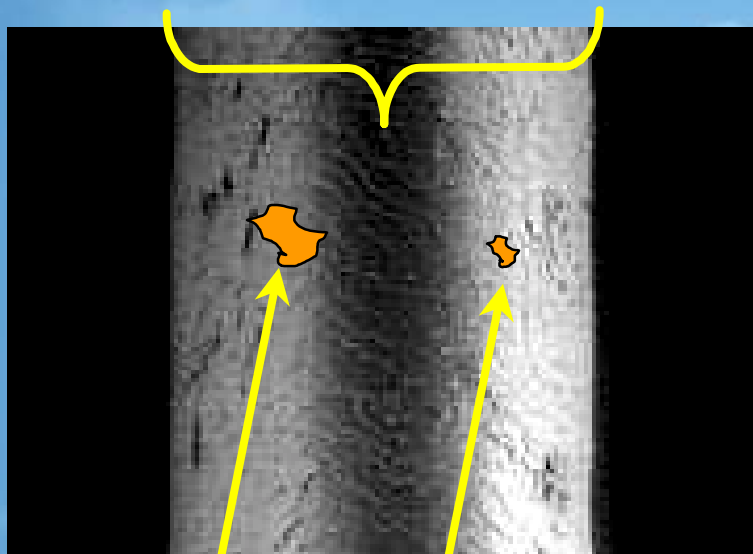
December 18-19, 2007
San Joaquin Valley
Air Pollution Control District

What Does this Plan Do?

- Brings the entire Valley into attainment of the PM_{2.5} standard before 2015
- Makes significant progress towards the new PM_{2.5} standard
- Lays the groundwork for future technology development
- Targets NO_x, PM_{2.5}, and SO₂ emissions with a comprehensive list of regulatory and incentive-based measures

The San Joaquin Valley's First PM_{2.5} Plan

Human Hair
(60 μm diameter)



PM₁₀
(10 μm)

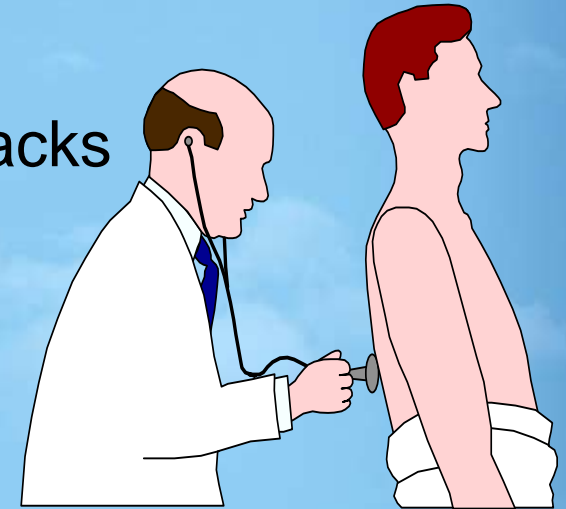
PM_{2.5}
(2.5 μm)

**Annual PM_{2.5}
Standard = 15 $\mu\text{g}/\text{m}^3$**

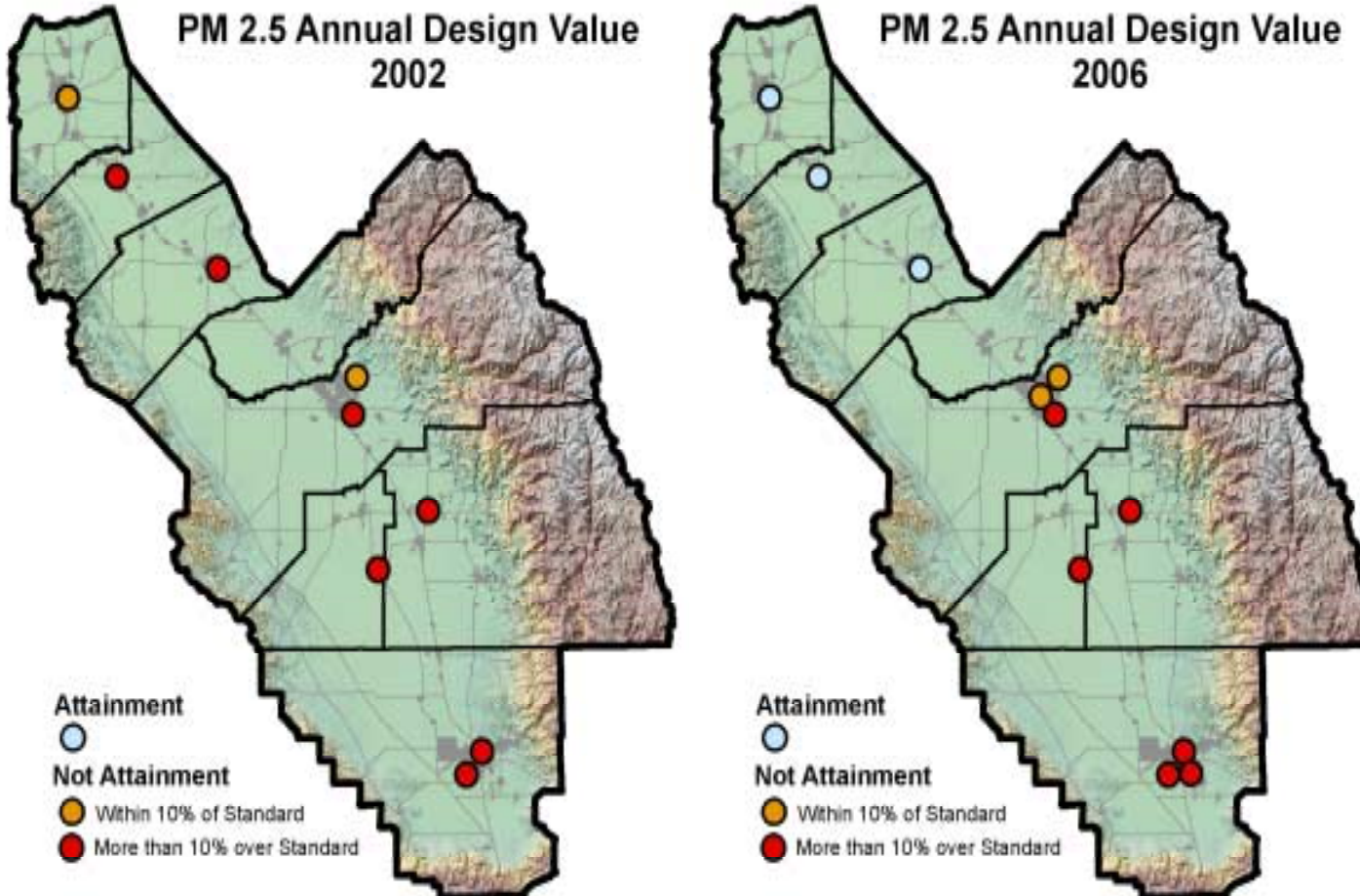
- Builds on the progress and strategies of the District's PM₁₀ and ozone plans, including the *2007 Ozone Plan*
- PM_{2.5} = particles 2.5 microns and smaller
- The *2008 PM_{2.5} Plan* is the plan required by EPA's first PM_{2.5} standard, set in 1997

Health Effects of PM_{2.5}

- 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:

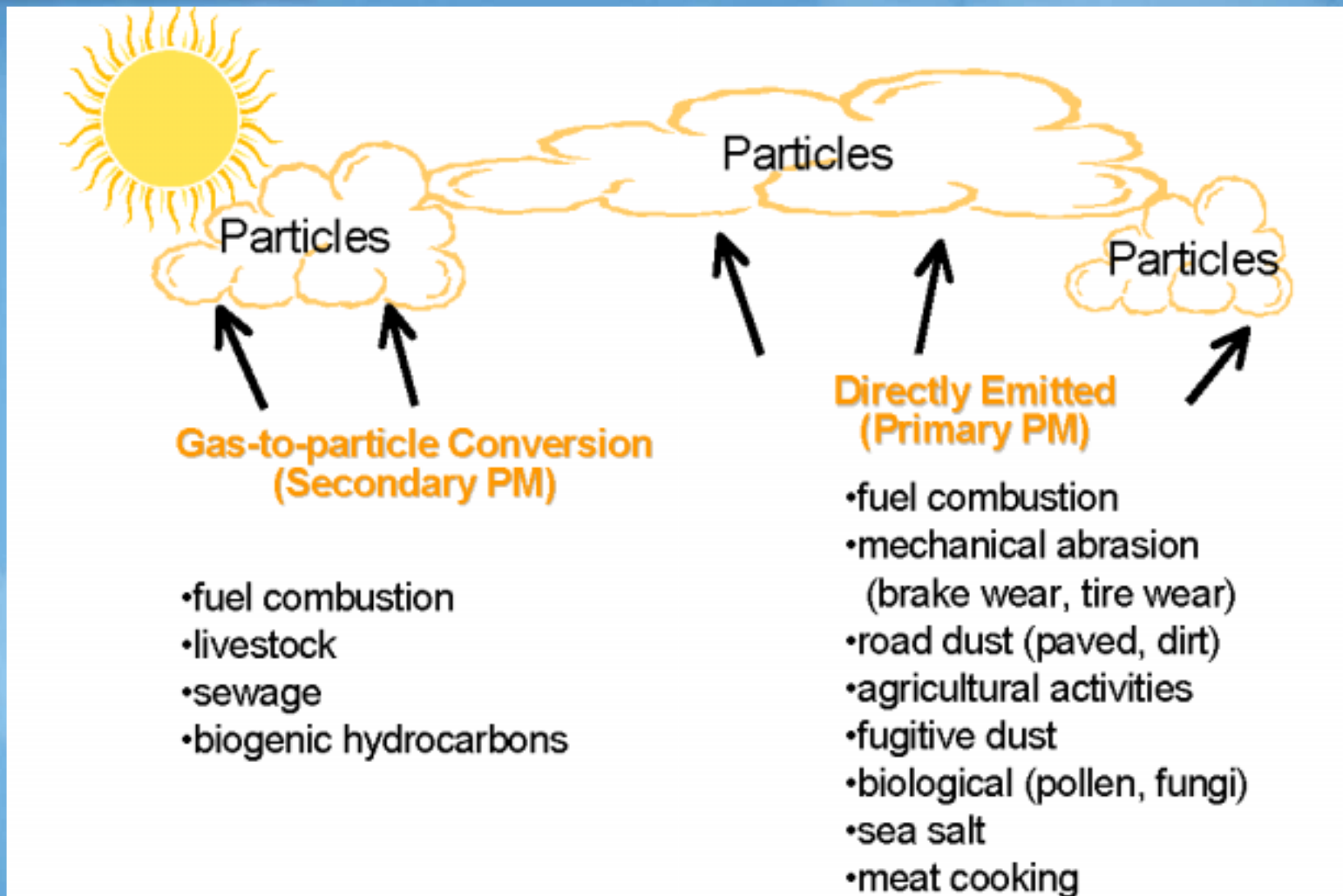
22.6 $\mu\text{g}/\text{m}^3$

2006:

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

**17%
improvement**

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

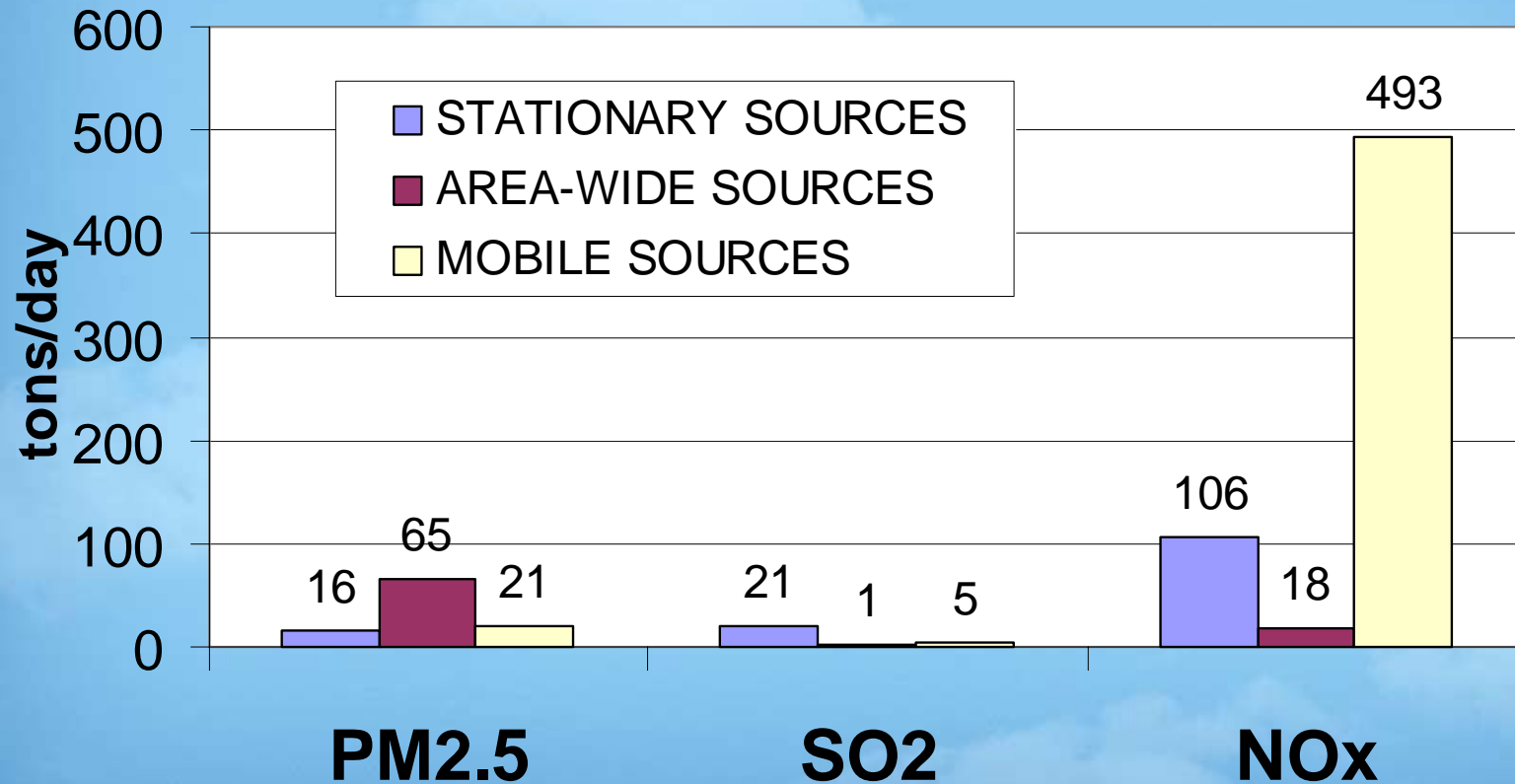


Industrial Sources



PM2.5 and Precursors

San Joaquin Valley Source Contributions

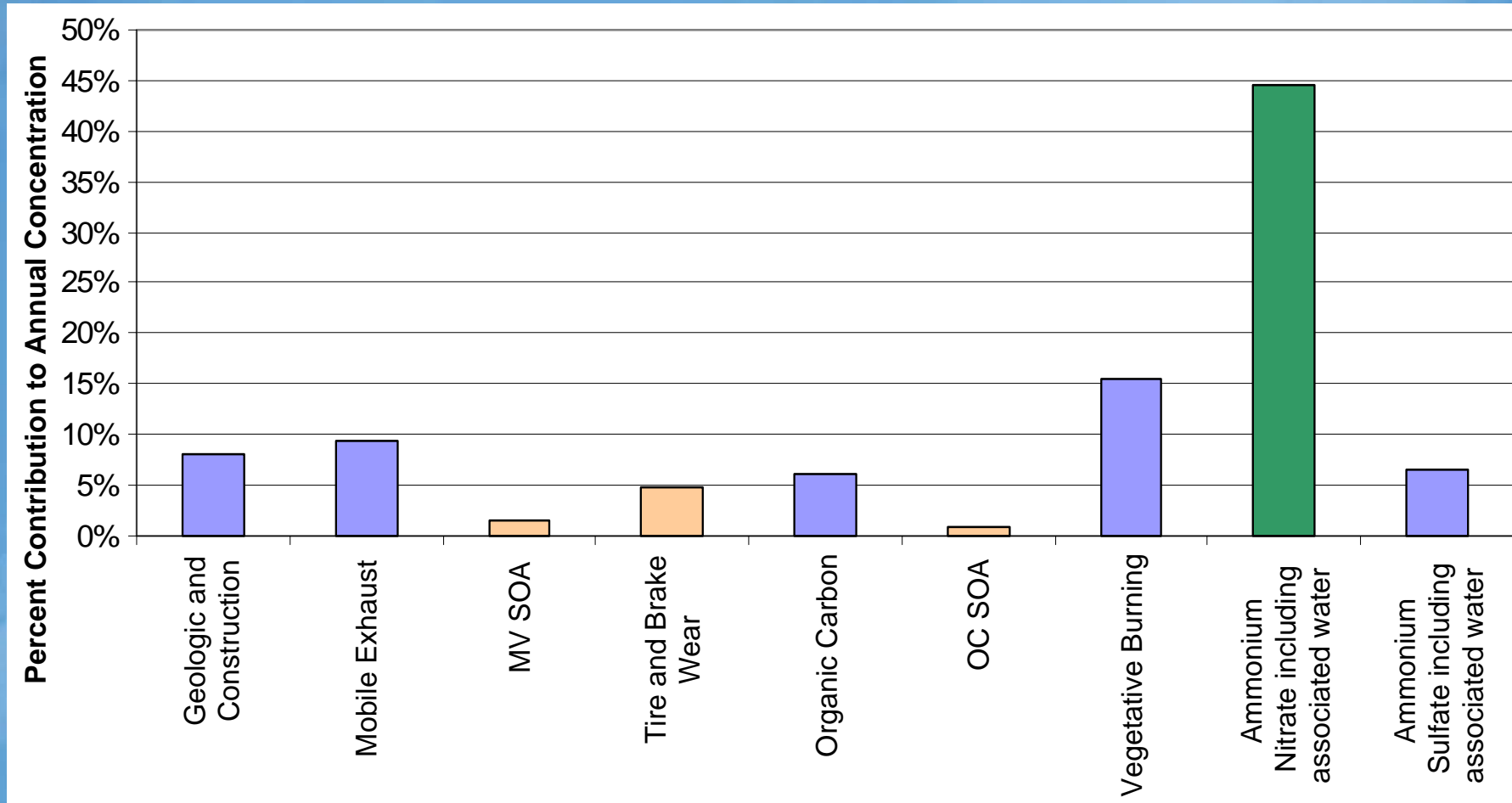


Using Modeling to Determine the Reductions Needed

- This Draft Plan utilizes receptor modeling to project the Valley's attainment outlook
- This sophisticated technique, approved by EPA in the PM10 Plans, provides a conservative evaluation
- Forthcoming modeling from ARB, which is expected to be available in late January 2008, will help refine the final reduction target

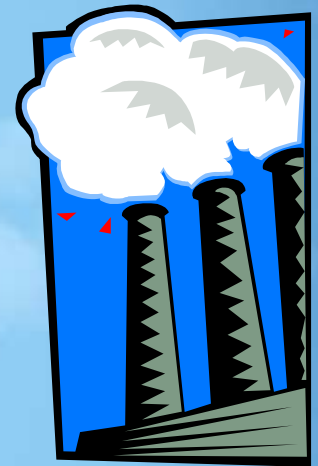


Receptor modeling shows NOx reductions are most effective



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_{2.5} and SO₂
- 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)

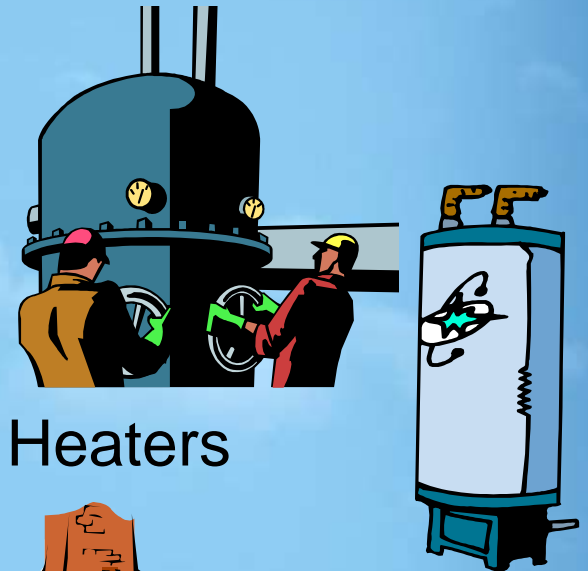
Residential Furnaces (Rule 4905)

Wood Burning Fireplaces & Wood Burning Heaters
(Rule 4901)

Flares (Rule 4311)

Commercial Charbroiling (Rule 4692)

Employer-based Trip Reduction



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

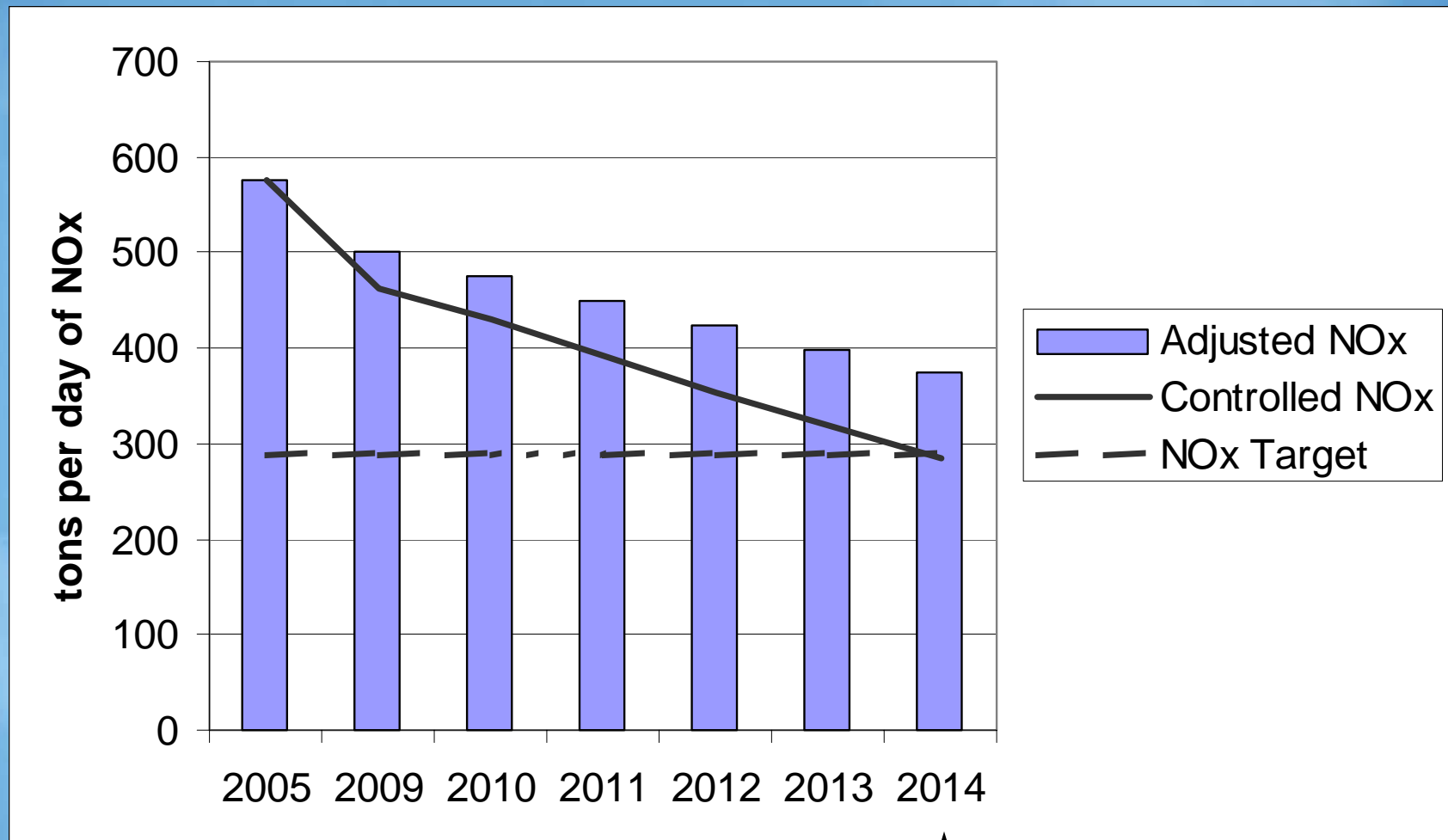
Voluntary Programs

Healthy Air Living

Incentive Programs

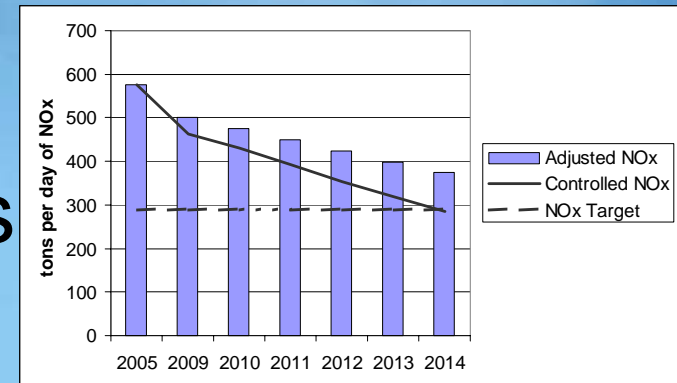
Fast Track Measures

Plan Strategy Should Bring Valley into PM2.5 Attainment



ARB Emission Reductions are Substantial

- ARB has only provided commitments for reductions in 2014
- The District assumed some pre-2014 reductions from ARB, which helps bring the Valley closer to early attainment
- The District will continue to work with ARB on this topic



Expeditious Attainment

The District has several reasons to expect attainment before 2014:

- Receptor modeling has been shown to underestimate control measure benefits
- Rules reducing PM_{2.5} and other precursors (SO₂, VOC) will provide additional benefits
- Rule development process can sometimes reveal additional reduction potential
- The District incentive program achieves additional reductions that are not quantified for attainment projections



Next Steps

- Comment period on Draft *2008 PM_{2.5} Plan* closes January 9, 2008
- A revised Draft Plan, including ARB modeling, is expected to be available in late January 2008
- Workshop tentatively scheduled in early February 2008
- 30-day comment period in March 2008
- Opportunity for comment at public hearing April 17, 2008

Comments and Questions

Send comments to:

Jessica Hafer

Jessica.Hafer@valleyair.org

(559) 230-5800

Comments due January 9, 2008 at 5:00 pm

More information (including email lists)

is available at

www.valleyair.org