



REPORT TO COUNCIL

City of Sacramento

915 I Street, Sacramento, CA 95814-2604
www.CityofSacramento.org

Staff Report
September 11, 2007

**Honorable Mayor and
Members of the City Council**

Title: Presentation on Proposed Rule 421: Mandatory No Burn Restrictions in Sacramento County

Location/Council District: Citywide

Recommendation: This report is informational; no action is recommended.

Contact: Yvette Rincon, Legislative Analyst, (916) 808-5827

Presenters: Larry Greene, Executive Director, Sacramento Metropolitan AQMD

Department: CMO

Division: Governmental Affairs

Organization No: 0310

Description/Analysis

Issue: The largest single source of Sacramento's wintertime fine particulate matter (PM2.5) air quality problems is residential wood burning. Sacramento Air Quality Management District is considering adoption of a rule (Rule 421) to prohibit burning in Sacramento County on poor air quality days. Natural gas and propane burning would be allowed, as well as wood burning for cooking or as a sole heat source. The rule will apply to residents and businesses. If successful, this rule could make marked improvements in air quality. Public education is critical to the successful implementation.

Policy Considerations: Monitors in the City of Sacramento show air quality violates health standards for fine particulate matter set by California and the United States Environmental Protection Agency. Fine particulate matter is linked to serious adverse health effects, including aggravated asthma, heart attacks, and premature death in people with heart or lung disease. People with heart or lung diseases, children and older adults are most affected, but even healthy adults are at risk. If the federal standards are met, requirements on other particulate matter sources, including standards to reduce dust from paved and unpaved roads and street sweeping equipment, may be avoided.

Environmental Considerations: Implementing Rule 421 is a very important step towards meeting the federal government's health standard for particulate

matter 2.5 (PM 2.5) air quality. Similar programs in other areas of California have reduced pollution levels by 30%. If Sacramento achieves the same level of success, we would meet the federal health standards. The total economic impacts of poor particulate matter air quality in the Sacramento Metropolitan Area are \$700 million per year from premature deaths, lost work days, and hospitalizations.

Rationale for Recommendation: This is an informational report and presentation only.

Financial Considerations: None.

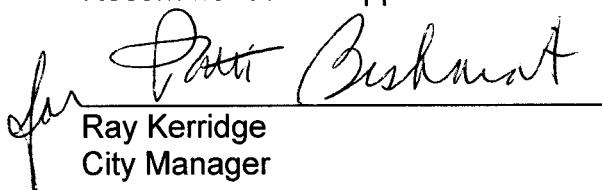
Emerging Small Business Development (ESBD): None.

Respectfully Submitted by:



Larry Greene
Executive Director
Sacramento Metropolitan Air Quality
Management District

Recommendation Approved:



for Patti Bushnell
Ray Kerridge
City Manager

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Background

The largest single source of Sacramento's wintertime fine particulate matter (PM2.5) air quality problems is residential wood burning. Fine particulate matter is linked to serious adverse health effects, including aggravated asthma, heart attacks, and premature death in people with heart or lung disease.

California Health and Safety Code, Section 39614 (SB656) required air districts to establish an implementation schedule for the most cost effective control measures to reduce particulate matter emissions. In July 2005, the Sacramento Metropolitan Air Quality Management District Board approved a SB656 implementation schedule that included consideration of a rule to prohibit non-essential residential wood burning on days with poor particulate matter air quality.

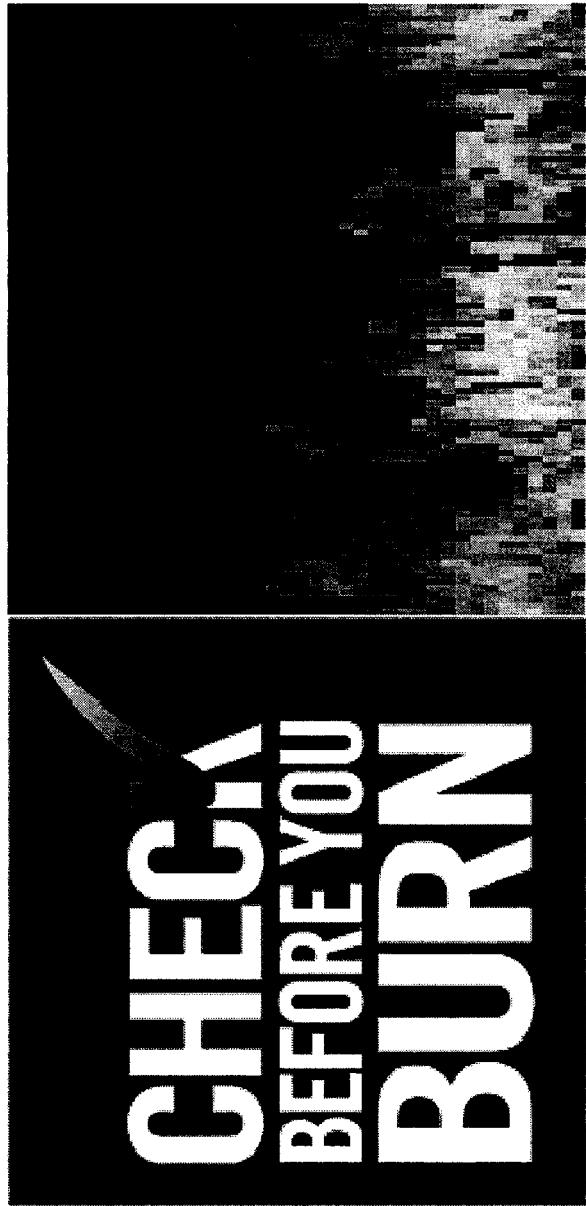
Current data suggests the Sacramento area will likely be designated non-attainment for the new Federal 24-hour PM2.5 National Ambient Air Quality Standard. A designation of non-attainment will require an attainment plan, including transportation conformity budgets and all measures necessary for the area to achieve attainment. If a mandatory no-burn measure is successfully implemented prior to the federal designations in 2010, it may help avoid the non-attainment designation.

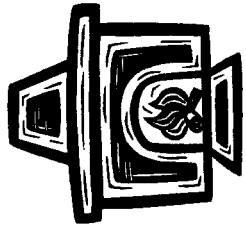
Air District staff completed further analysis of residential wood burning restrictions and is beginning the public part of the process to establish a prohibition of non-essential residential wood burning during poor air quality events, called a "mandatory curtailment" rule. The analysis so far has produced the following key findings:

- Similar rules have been successfully implemented in other areas, and have shown improvements in particulate matter air quality.
- The most effective local control measure for wood burning emissions is a mandatory curtailment program. The targeted reductions from this measure are greater than the combined reductions from all other wood burning measures that are under consideration.
- A public opinion survey of Sacramento County residents (including a sub-sample of low-income residents) revealed that:
 - 71% of all respondents would support the adoption of mandatory curtailment restrictions.
 - 78% of respondents who burn wood indicated that they would be likely to comply with a mandatory curtailment request.
 - 91% of respondents who burn wood indicated that they would be likely to comply with a voluntary curtailment request. However, of those wood-burning respondents who heard this past winter's Spare the Air message, only 46% actually curtailed their wood burning.
 - 59% of all respondents heard the wintertime Spare the Air requests not to burn this past winter.

Based on these findings, Air District staff solicited input on a proposed rule and staff analysis at public workshops during the week of July 23, 2007. Air District staff plan to return to the SMAQMD Board of Directors on September 27, 2007 for adoption of Rule 421.

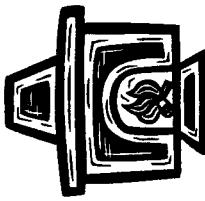
Further Study of Wood Burning Measures – Mandatory No-Burn Restrictions





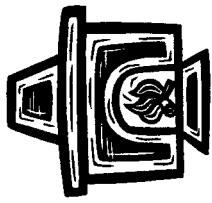
Overview

- Health Effects/Inventory
- Other District Wood Burning Efforts
- Federal Nonattainment & Consequences
- Proposal & Expected Results
- Survey results
- Conclusions



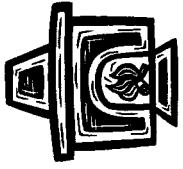
Studies link particle pollution to health problems

- National Morbidity, Mortality, and Air Pollution Study
- University of Southern California, Children's Health Study
- Harvard's Six Cities Study
- American Cancer Society Study of Particulate Air Pollution and Mortality
- Fine Particulate and Mortality in 20 US cities (New England Journal of Medicine)



Health Effects

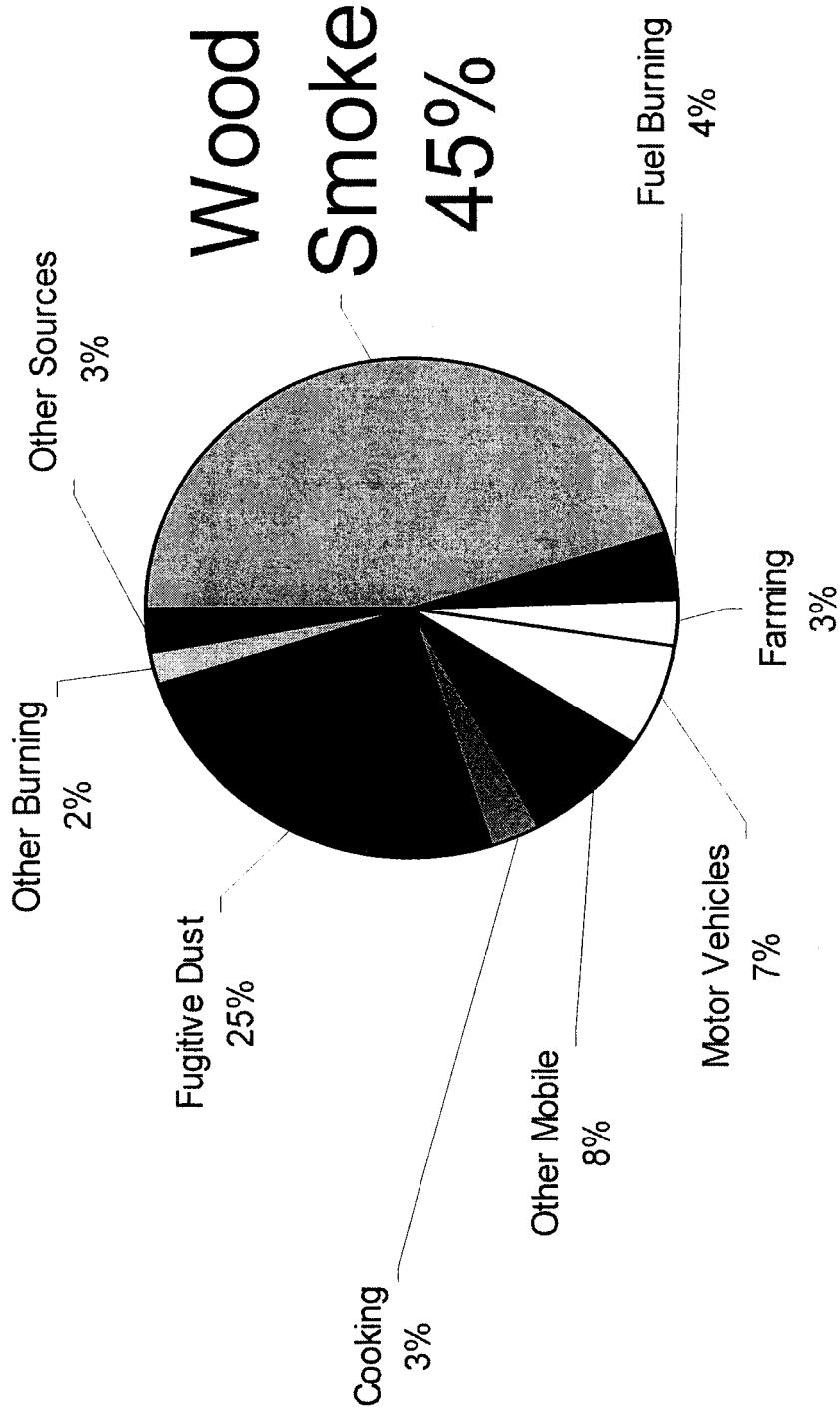
- Aggravates lung conditions - asthma, chronic bronchitis
- Atherosclerosis
- Cystic Fibrosis
- Heart disease – irregular heartbeat, nonfatal heart attacks
- Premature death in people with heart or lung disease
- Affects healthy children and adults - Coughing, wheezing, and permanent decreased lung function
- Causes asthma in small children



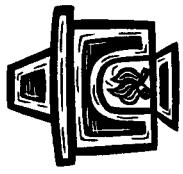
Health Costs Per Year

- In Sacramento Metropolitan Area
 - 90 people die prematurely
 - 20 hospital admissions
 - 1200 asthma & lower respiratory symptom cases
 - 110 acute bronchitis cases
 - 7,900 lost work days
 - 42,000 minor restricted activity days
- **Total Annual Economic Impact over \$700,000,000**

Pollution Sources



2005 PM2.5 Emission Inventory for Sacramento County,
<http://www.arb.ca.gov/app/emsinv/fcemssumcat2006.php>



Other District Wood Burning Efforts

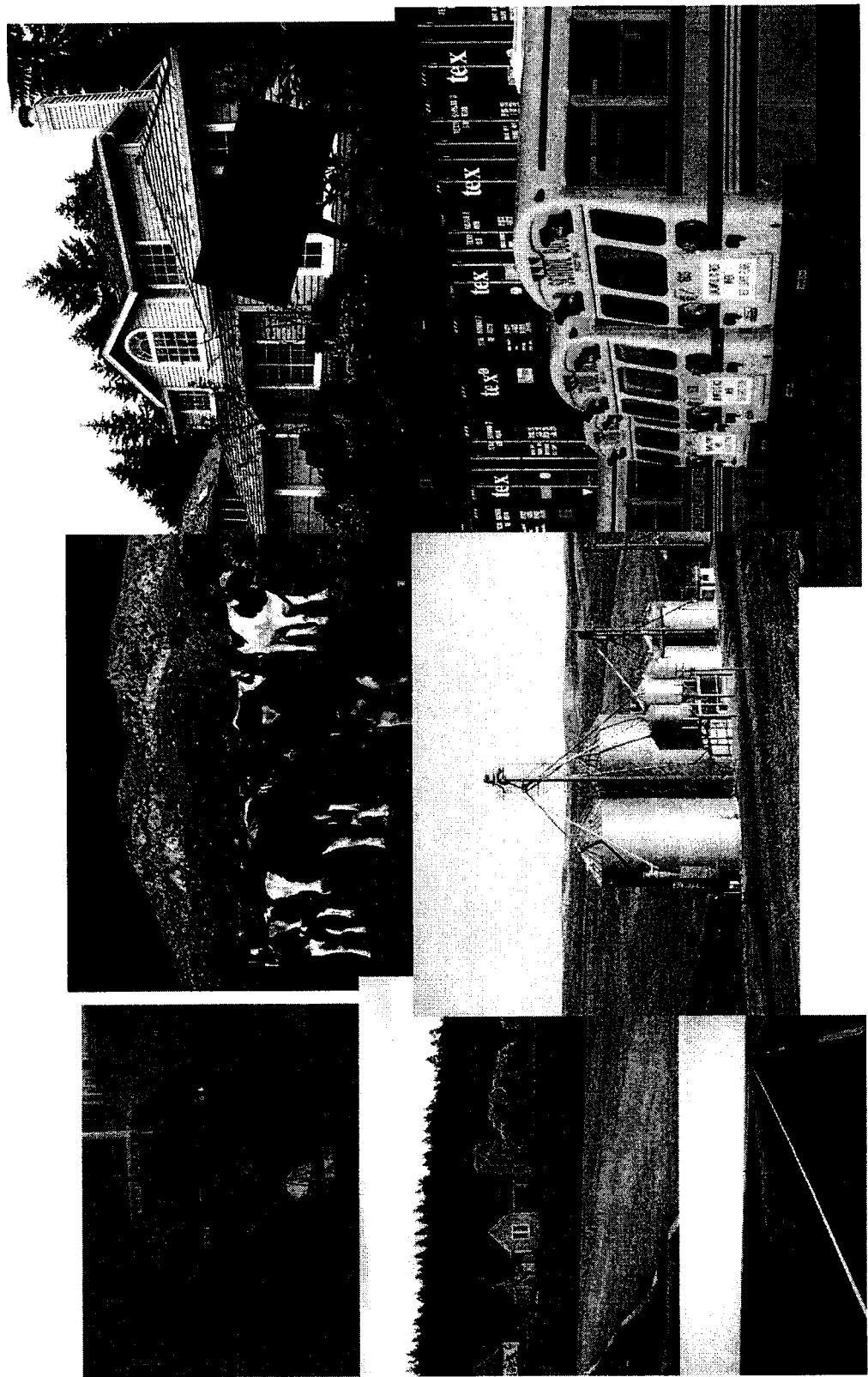
- July 2005 – Particulate problem analyzed (SB656)
- August 2006 - incentive program to clean up dirty fireplaces and wood stoves
- Fall 2006
 - Expanded existing AQ forecasting to Placer and Yolo/Solano
 - Requested 8 voluntary no burn days
- October 2006 – Board adopts Rule 417 all new installations must be clean

Will we meet federal standards?

| PM2.5 Concentration Years 2004-2006 | |
|-------------------------------------|-------------------|
| Monitoring Station | µg/m ³ |
| 13 th and T Street | 41.3 |
| UCD Med. Center - Stockton Blvd. | 38.7 |
| Del Paso Manor | 48.7 |
| 1997 Federal PM2.5 Standard | 65 |
| 2006 Federal PM2.5 Standard | 35 |

30 %
Reduction
Needed

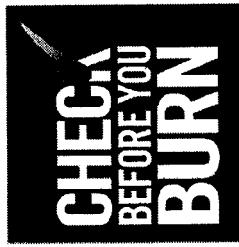
Probable Nonattainment Measures



Proposal

Mandatory Burning Restrictions

- No burning on days w/ poor air quality ($>35\mu\text{g}/\text{m}^3$)
 - 30 days per year on average 2003-2006
- Applies to any solid fuel burning including wood, pellets, and manufactured logs
- Applies to both residents and businesses (e.g. hotels)
- Applies winter months of November through February
- Exempt
 - burning used as the sole source of heat
 - natural gas, propane and electric fireplaces
 - Cooking (wood or charcoal)



Mandatory Burning Restrictions

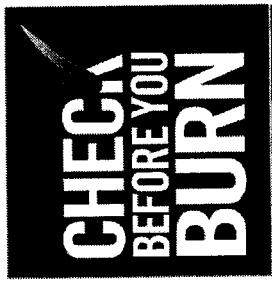
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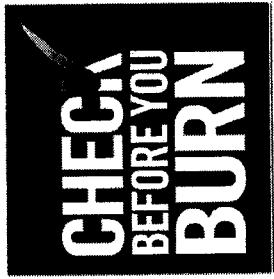


- **How people will know not to burn**
 - Call a recorded phone message
 - Check online
 - Sign up to receive an Air Alert
 - Look in the newspaper
 - Listen to radio and TV weather broadcasts

Enforcement

- Violation when wood smoke is visible
 - Notice of violation mailed to resident
 - Inspectors not on private property
 - Photos if possible
 - Penalty – first time violations
 - \$50 penalty fee or
 - attend compliance school (no cost)

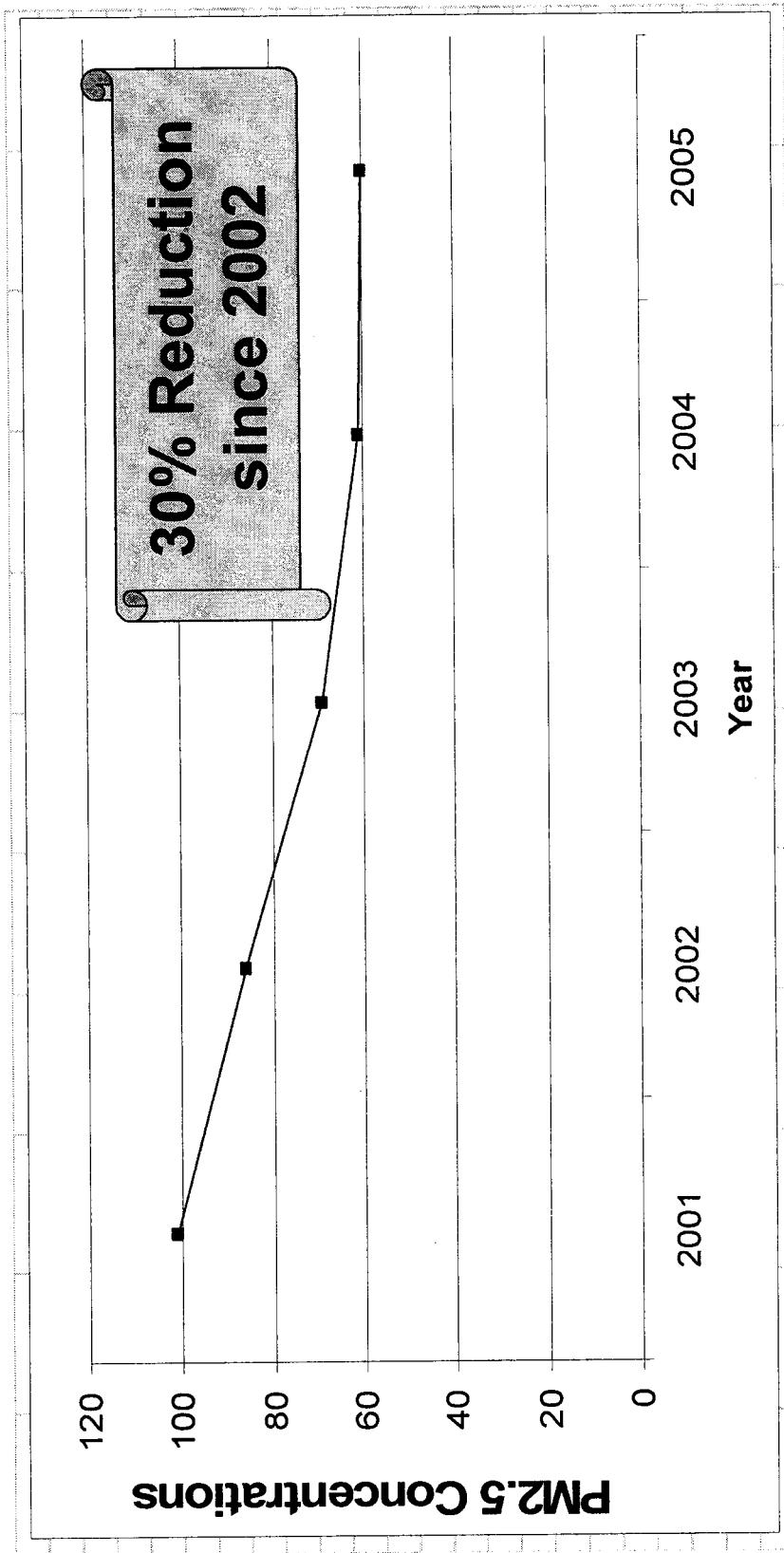




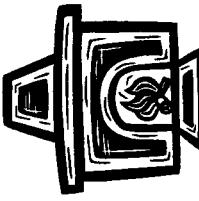
Who else has mandatory curtailment?

| Location | Since |
|---|-------------------|
| San Joaquin Valley APCD | 2003 |
| Denver, Colorado | 1987 |
| Puget Sound, Washington | 1995 |
| Bernalillo County (Albuquerque), New Mexico | 1995 |
| Mammoth Lakes, California | 1990 |
| San Francisco - BAAQMD | Under development |

Air Quality Benefits - Fresno

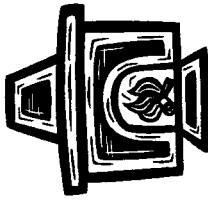


- 3 Year Average of 98th Percentile
- Concentrations in ug/m³
- Fresno-1st street monitoring station



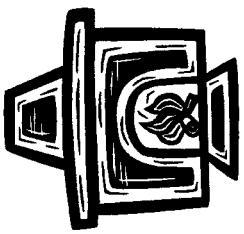
2007 Residential Wood Burn Phone Survey

- Conducted by Aurora Research Group
- General population based study
 - 499 completed interviews with Sacramento County residents
 - Designed to access wood burning ownership, usage, support for rule, likely compliance



Conclusions of Survey

- About half owned an indoor wood-burning device and one third were classified as “burners”
- About 60% of “burners” used wood fires more for pleasure than supplemental heating
- 71% of respondents support mandatory No Burn Regulation
- Mandatory rule supporters were concerned about air quality and health; those who opposed disliked being told what to do and did not perceive wood-burning as a problem



Conclusions

- **Wood smoke is 45% of the PM2.5 problem**
- **Health Effects and Economic Impacts are significant**
 - 90 deaths, 7900 lost work days per year
 - \$700,000,000 annual economic impact
- **Mandatory curtailment is most effective PM strategy**
- **If we act now could avoid nonattainment and business impacts**
- **Survey results show 71% support proposal**
- **Propose no burn on about 30 days of poor air quality**
- **Exempt**
 - sole source of heat, cooking, natural gas, propane and electric devices
- **Next steps - Staff intends to**
 - Seek Board approval September 2007
 - Begin implementation November 2007