

Fireplace Change Outs and You + Teaser on our Wood Smoke Study

Residential Wood Smoke Workshop - Nashville

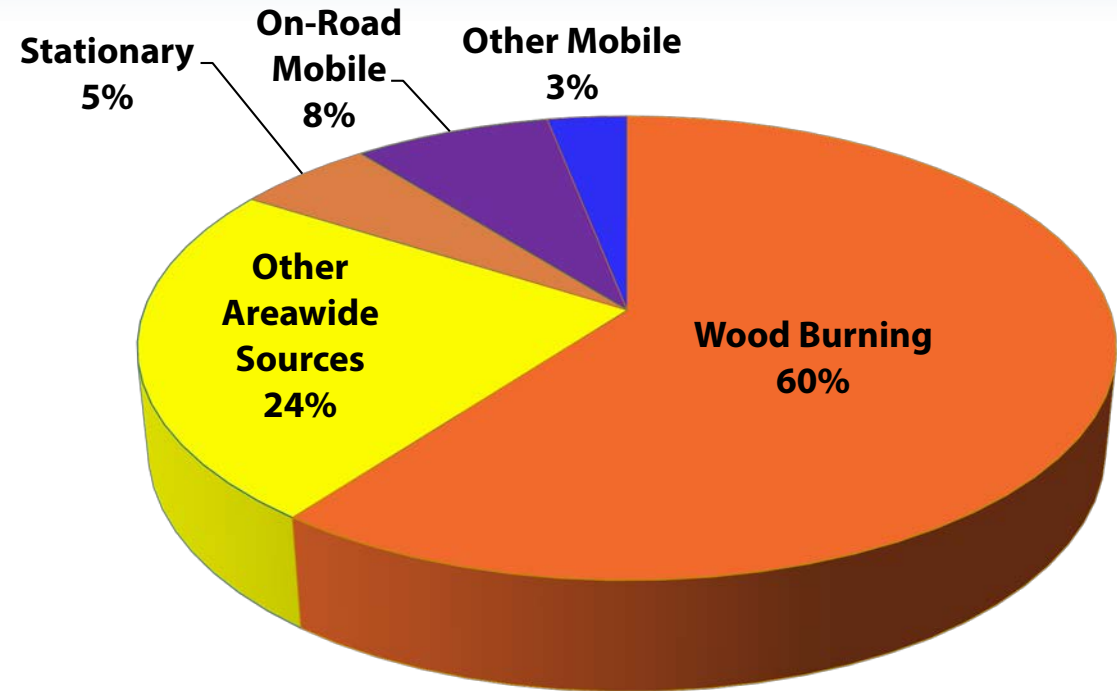
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Outline

- Trip Down Memory Lane
 - Our PM 2.5 challenges
 - Approach
 - Results
- Voucher Program (fireplace change out)
- Lessons Learned & Changes Over Time
- Next Steps
- Wood Smoke Study Teaser

Trip Down Memory Lane - Problem

Wood smoke makes up **60%** of the PM_{2.5} emission inventory in Sacramento County on an average **winter** day

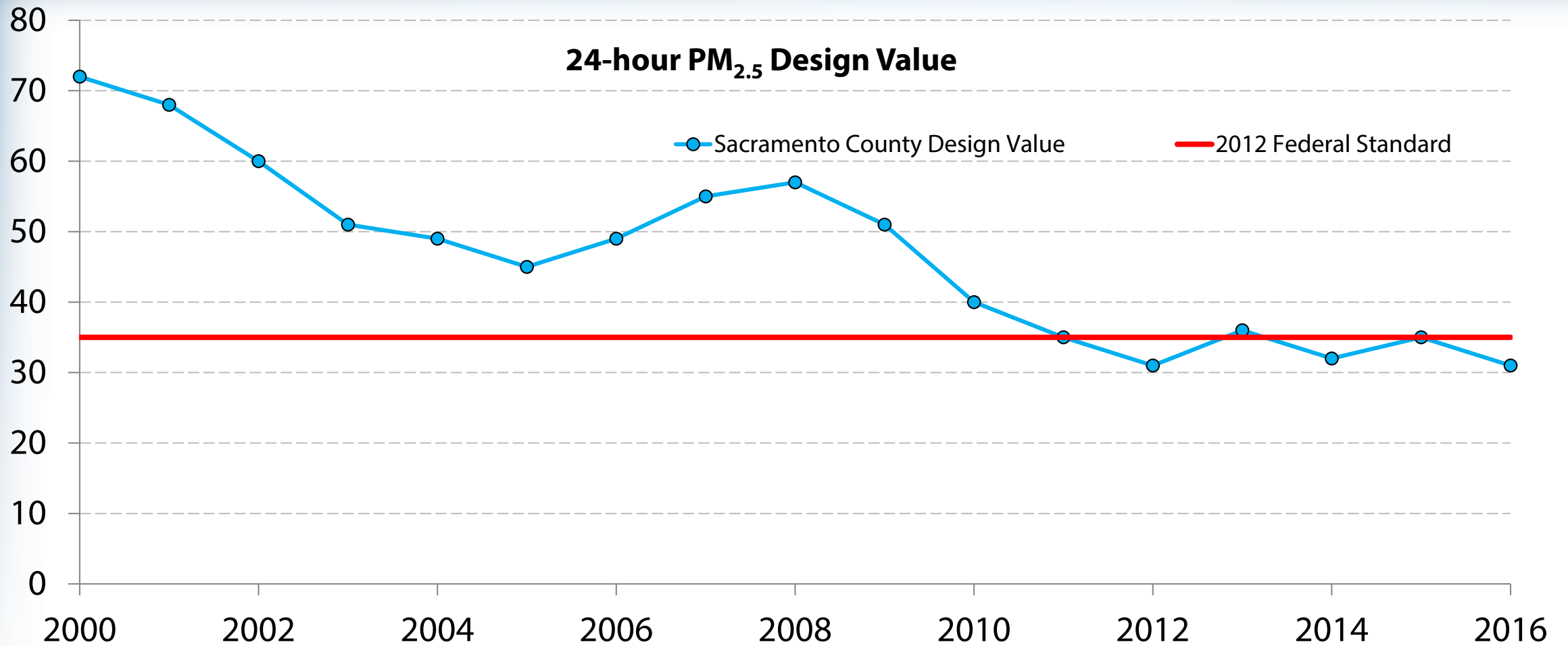


Source: 2016_SIP_V105_SAC_PM25. Accessed: 01/20/2017 13:36:38.

Trip Down Memory Lane - Approach

- What would it take to reach attainment?
- Considered a number of options
 - Started with voluntary no burn days
 - All new installations required to be EPA certified post Oct 2007
 - Mandatory wood burning curtailment (Check Before You Burn)
 - Fireplace change out program

Trip Down Memory Lane - Results



Voucher Program

- Began August 2008
- Total projects
 - Fireplace change outs 6,303
 - Total funding provided \$3,036,583
- Low Income projects
 - Fireplace change outs 423
 - Funding provided \$754,750
- Environmental Justice versus Non-EJ
 - EJ 30% of changes 43% of funding
 - Non EJ 70% 57%



Voucher Program



Voucher Options & Funding Levels

	Funding	Low Income Funding
Replace Uncertified Stove/Insert with:		Up to \$1500
Gas Stove	\$450	
Electric Stove	\$300	
Pellet Stove	\$250	
Wood Stove	\$150	
Replace Open Hearth with:		
Gas Stove	\$450	
Gas logs or electric stove	\$300	
Pellet Stove	\$250	

Typical Cost Range

Device Type	Cost (\$)	
	Low	High
Gas logs	\$1,400	\$2,000
Electric Inserts	\$1,200	\$2,600
Gas Inserts	\$1,600	\$5,900
Pellet Stoves/Inserts	\$3,700	\$5,200
Wood Stoves/Inserts	\$1,400	\$4,000

Lessons Learned & Changes Over Time

- Outreach Partners

- Community events
- Neighborhood newspapers
- Partnerships with other low income programs
- Retailers*



- Changes Over Time

- Extra funding for EJ areas in earlier years
- No longer fund open hearth to wood insert
 - Concern of increased burn rate (more emissions)



Next Steps

- In process of re-evaluating funding levels
 - Low income funding level
 - Potential change to categories of funding
- New statewide funding - \$5 million
 - 1st year directed toward rural districts
 - Future years may require alignment
 - Variations on emission benefit calculations
- Mitigation for land use projects

Wood Smoke Study Teaser and Community Based Monitoring



EPA Grant:

To gain a **better understanding of air toxics from wood smoke**, not just particles, along with wood burning behavior in Environmental Justice (EJ) and non-EJ **communities**

Wood Smoke Study Teaser

- What are the concentrations of air toxics?
- To what degree does wood smoke versus traffic contribute to air toxics?
- Are some communities disproportionately impacted by wood smoke than others?
- Are there outreach efforts that could assist in reducing this toxics exposure?



Wood Smoke Study Teaser

- Monitoring took place in six communities
 - Three pairs
 - EJ paired with non-EJ
- Three types of project monitors
 - Tier 1: Regulator sites
 - Tier 2: Temporary community sites
 - Tier 3: Temporary tripod sites
(low cost sensors – Air Beams)



Wood Smoke Study Teaser

Summary of Results for Sacramento

1. Smoke from wood burning does not significantly contribute to air toxic concentrations
2. Fossil fuel-related pollutants were highest in EJ communities
3. Wood burning indicators were highest in our non-EJ communities
4. Phone surveys were consistent with measurements – more wood burning in non-EJ
5. Sensor to sensor, the low cost sensors performed/tracked well with each other



Wood Smoke Study Teaser

Study also provides:

1. Recommendations for outreach
2. Ideas on how to make our residents more aware of our programs - incentive and regulatory.

The screenshot shows the Sacramento Metropolitan Air Quality Management District website. The header includes the organization's name and logo, navigation links (Employment, Forms, FAQ, Air Quality Complaints, Contact Us), a search bar, and social media icons. The main navigation bar highlights 'AIR QUALITY & HEALTH'. The page content features a section on 'Air Monitoring' with a paragraph explaining the district's history and monitoring stations. Below this is a section titled 'Sacramento Toxics from Wood Smoke Study' with a paragraph and a list of four research questions. A sidebar menu on the right lists various topics under 'Air Quality & Health', with 'Air Monitoring' selected.

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Air Monitoring

Since 1960, the Sac Metro Air District has been monitoring outdoor air pollution in Sacramento County and now operates eight air quality monitoring stations across the county. An additional station is operated by the California Air Resources Board (CARB). The monitoring stations provide data that are essential to protecting public health, determining compliance with federal and state air quality standards and supporting air quality research.

Sacramento Toxics from Wood Smoke Study

The Sac Metro Air District conducted a Toxics from Wood Smoke Study in Sacramento County communities from December 2016 – January 2017. The study was made possible with funding from a Community Scale Air Toxics Ambient Monitoring grant award provided by U.S. EPA.

The study focused on four research questions:

1. What are the concentrations of Hazardous Air Pollutants (HAPs) in various communities in Sacramento?
2. To what degree does wood smoke contribute to toxics in these communities?
3. Are disadvantaged communities disproportionately impacted by toxics from wood smoke?
4. Are there changes that can be made to the Sac Metro Air District's air quality outreach program to reduce toxics from wood smoke?

Results and conclusions from this study are presented in a [final report](#).

Air Quality & Health

- Air Monitoring**
- Air Quality Information
- Air Quality Plans
- Air Quality Pollutants and Standards
- Budget & Finance
- Climate Change
- Complaints
- Emission Inventory
- Environmental Justice
- Other Air Quality District Contacts
- Public Outreach

Thank You and Questions

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