



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 4

Attainment Planning for the Primary Annual PM_{2.5} National Ambient Air Quality Standards

**Stationary Source Committee
May 8, 2024**

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Presentation Outcome



Provide information and context about attainment planning for the recently revised Annual PM_{2.5} National Ambient Air Quality Standards (NAAQS).

Provide an overview of preparing a State Implementation Plan, and alternatively a Particulate Matter (PM) Reduction Plan.

Presentation Outline



- National Ambient Air Quality Standards (NAAQS)
- Progress and Updates
- SIP Planning Roadmap
- Alternate Scenario: PM Reduction Plan
- Feedback and Questions

Presentation for Information Only



No action required.

National Ambient Air Quality Standards (NAAQS)



- U.S. Environmental Protection Agency (EPA) sets limits for concentrations of six pollutants in ambient (outdoor) air according to the Federal Clean Air Act
 - Criteria Pollutants: Carbon monoxide, ozone, lead, oxides of nitrogen, particulate matter (PM), and oxides of sulfur
 - Primary NAAQS: Health-based, to an adequate margin of safety
 - Secondary NAAQS: Welfare-based, e.g. visibility, damage to crops, vegetation, buildings, and animals
- EPA is required to review NAAQS every five years

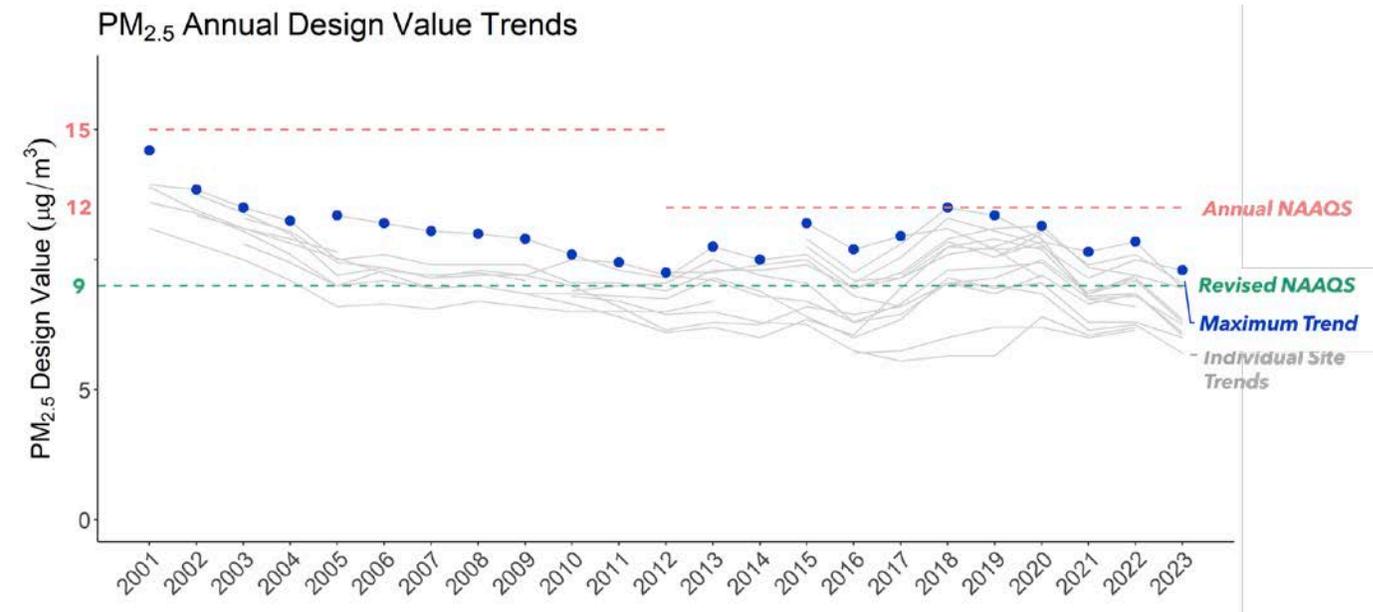
Progress and Updates



- Primary Annual PM_{2.5} NAAQS revised from 12 ug/m³ to 9.0 ug/m³ and promulgated on February 7, 2024 and effective May 6, 2024
- Will require new work should the region be designated nonattainment
- Air District team working on Initial Designations
- Updates to Air District Committees and Board of Directors through 2026

*State Implementation Plan (SIP)

PM_{2.5} Design Value Trends



- Preliminary 2023 PM_{2.5} data are close to the revised NAAQS
- Designations will rely on data from 2024 and possibly 2025
- Year-to-year variability makes predictions about future years difficult
- Additional reductions in PM_{2.5} will have public health benefits

Designations and Attainment Planning Roadmap (Nonattainment Scenario)



Phase	2024	2025	2026	2027	2028	2029	2030	2031	2032	ATTAINMENT & ATTAINMENT DETERMINATION
Initial Designations 2 Years			FEB							
SIP Development 18 months from Effective Date of Final Designations				AUGUST						
SIP Implementation No later than the end of the sixth calendar year after Final Designations										

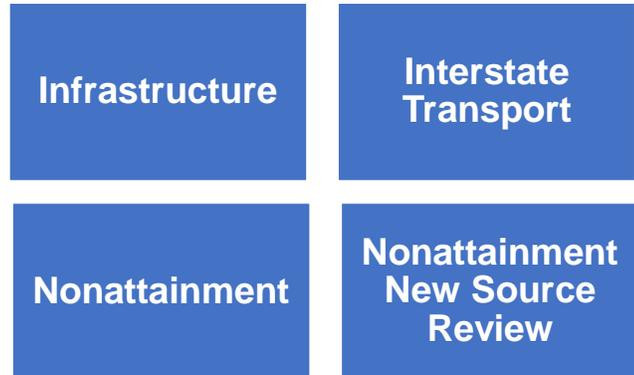
Designations and Attainment Planning Roadmap (Nonattainment Scenario) (cont.)



Phase	2024	2025	2026	2027	2028	2029	2030	2031	2032	ATTAINMENT & ATTAINMENT DETERMINATION
Initial Designations			FEB							
SIP Development				AUGUST						
SIP Implementation										

SIP DEVELOPMENT

> The SIP is a collection of regulations, programs, and analyses to implement, maintain, and enforce the NAAQS and to fulfill other requirements of the Clean Air Act.



Nonattainment SIP Elements



Emissions Inventories

- Base year & projected attainment year

Control Measures

- Reasonably available control measures (RACM)
- Reasonably available control technologies (RACT)
- To attain “as expeditiously as practicable”

Attainment Demonstration

- Modeling of control measures
- Air monitoring
- Weight of evidence

Reasonable Further Progress (RFP) and Quantitative Milestones (QM)

- Projected emissions reductions for milestone years based on control measure implementation schedule
- Milestones and reports at 4.5 years and 7.5 years from SIP due date

Contingency Measures

- Additional measures to be implemented with minimal further action by the state if the region does not attain by the attainment date
- Excess emission reductions

Nonattainment SIP Elements (cont.)



Emissions Inventories

- Base year & projected attainment year

Control Measures

- Reasonably available control measures (RACM)
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- To attain “as expeditiously as practicable”

Attainment Demonstration

- Modeling of control measures
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Reasonable Further Progress (RFP) and Quantitative Milestones (QM)

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Contingency Measures

- Additional measures to be implemented with minimal further action by the state if the region does not attain by the attainment date
- “Excess emission reductions”

Other Considerations for Nonattainment Designations



Federal Enforceability

- All limitations and conditions which are enforceable by the [EPA] Administrator¹
- Federally enforceable limits for sources established by Clean Air Act programs
 - Air District Permitting Program
 - Specific & Applicability
 - Public Comment Periods for Control Measures (Rules and Regulations)

Transportation Conformity

- Regional Transportation Plan (RTP) and federal Transportation Improvement Plan (TIP) Conformity Determination
- Within 1 year of the effective date of a nonattainment designation
- Metropolitan Planning Organization (MPO)
 - Metropolitan Transportation Commission in consultation with Air District
 - Plan Bay Area

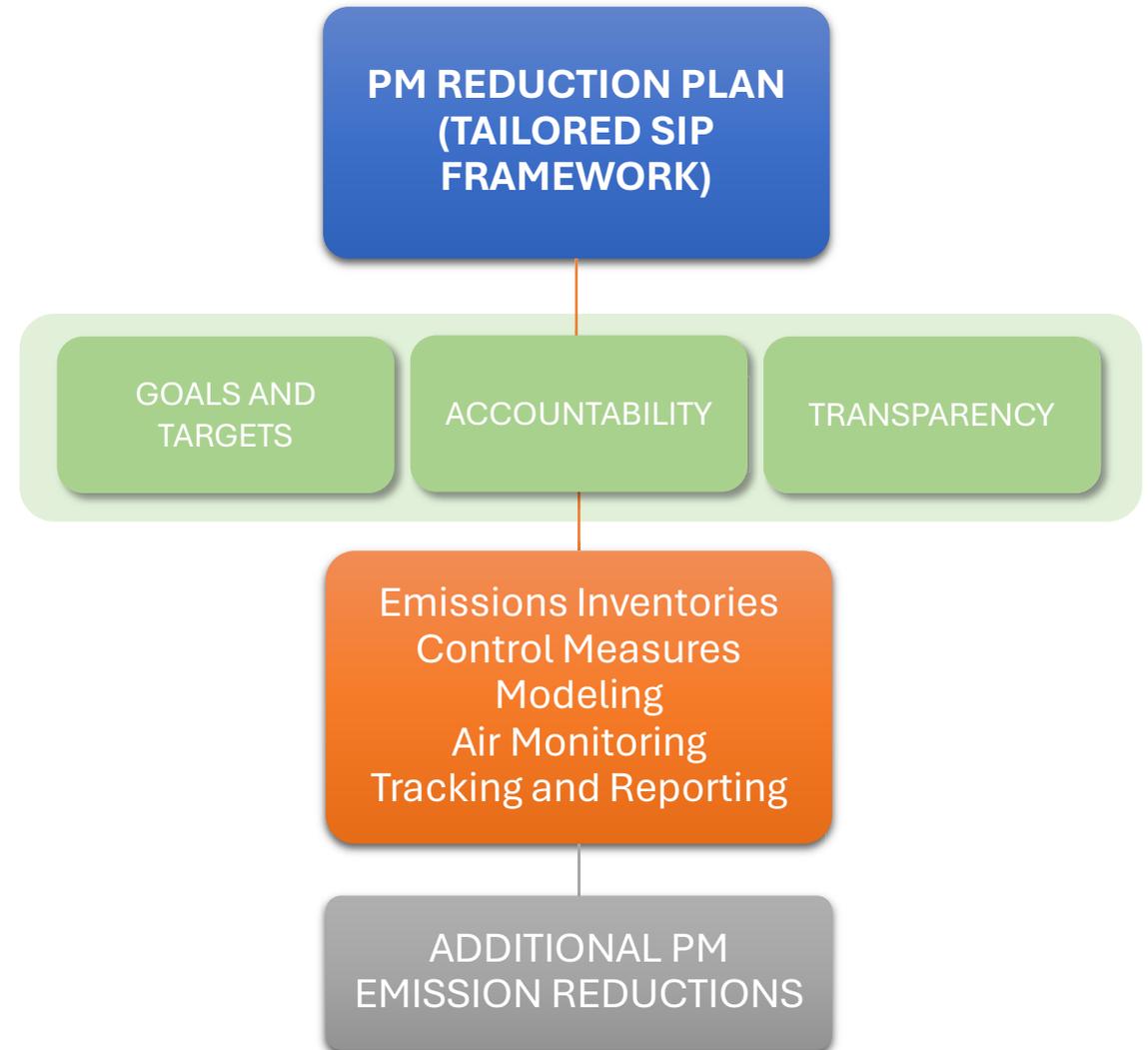
¹ United States Environmental Protection Agency, Federal Enforceability under PSD, April 1982, <https://www.epa.gov/sites/default/files/2015-07/documents/fednfrce.pdf>

Particulate Matter Reduction Plan (Attainment Scenario)



Attainment Scenario

- If designated ‘attainment’ for the Primary Annual $PM_{2.5}$ $9.0 \mu g/m^3$ NAAQS there is still an opportunity to reduce PM emissions further
- The Air District’s Advisory Council recognized “*there is no known threshold for harmful $PM_{2.5}$ health effects*” and recommended further actions to reduce PM exposure and achieve additional health benefits
- Tailor the SIP framework to regional needs
 - AB 617 and Community Emission Reduction Plans (CERP)
 - Incentives
 - Partnerships & Engagement



Next Steps



- Continue working on Initial Designations with planned updates to the Committee and Board
- Begin organizing and resourcing for development of a SIP or a Particulate Matter Reduction Plan

Questions



- Questions



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AGENDA: 5

Update on Mitigation Options for Woodsmoke Impacts

**Stationary Source Committee
May 8, 2024**

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Presentation Outcome



To inform the committee on the progress of the Woodsmoke White Paper and seek input on potential policy options and next steps.

Presentation Outline



- Background on Woodsmoke
- Current Air District Programs and Rules
- White Paper Development
- Policy Discussion
- Next Steps
- Feedback and Questions

Requested Action



None; This is an informational item.

Background on Woodsmoke



- Woodsmoke is a significant source of fine particulate matter (PM_{2.5}) and contains gaseous air toxics such as benzene and formaldehyde
- Woodsmoke is a unique source that presents challenges for understanding air quality impacts and for designing regulations
 - *Significant variation in emissions by time and location*
 - *Multiple types of devices and uses (e.g., aesthetics vs. home heating)*
- The Air District's Advisory Council recognized “there is no known threshold for harmful PM_{2.5} health effects” and recommended further actions to reduce PM exposure and achieve additional health benefits

Impetus For This Policy Initiative



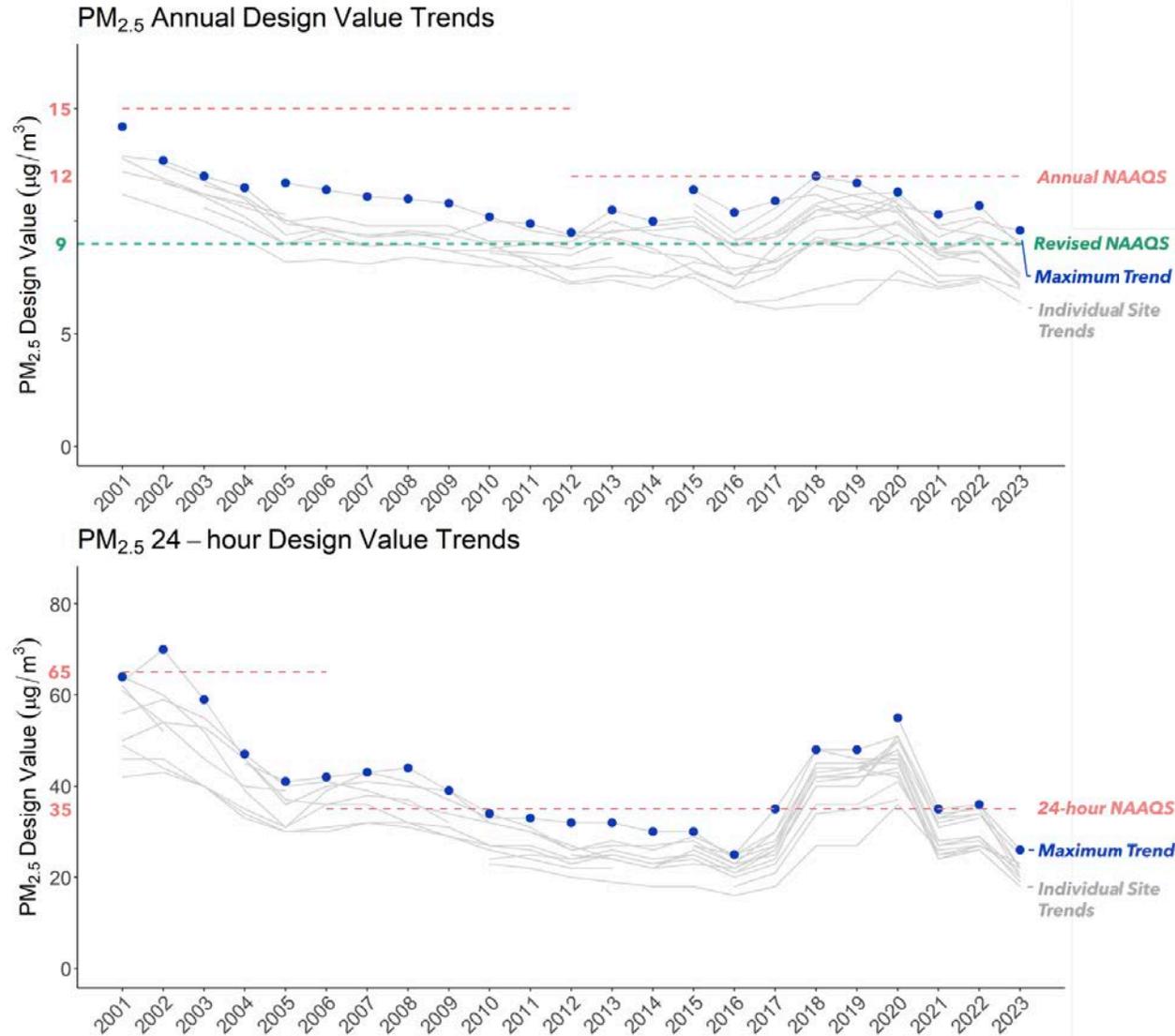
CERP Measures

- West Oakland Community Action Plan (WOCAP) – “Explore the possibility of amending Rule 6-3 to restrict recreational fires.”
- Richmond Path To Clean Air – “Reduce exposure to wood burning...through incentive programs and evaluation of possible regulatory initiatives.”

A Strengthened NAAQS for Particulate Matter

- Annual PM_{2.5} standard set at 9.0 ug/m³ to provide increased public health protection, consistent with the available health science
- While 24-hour PM_{2.5} standard was retained, majority of Clean Air Scientific Advisory Committee (CASAC) members recommended revising the level to 25-30 ug/m³
- CASAC noted that a strengthened annual standard alone may not be protective against short-term exposures

PM_{2.5} Design Value Trends



- Long-term annual and 24-hour PM_{2.5} trends show little improvement over the last 10 years and elevated daily concentrations continued to be measured at all monitoring sites in the Bay Area
- Additional reductions may be required to meet and maintain the revised NAAQS of 9.0 µg/m³
- Recent trends in the PM_{2.5} speciation data at San Jose-Jackson do not show a decrease in peak concentrations of major components associated with woodsmoke

Emissions Summary



- Staff is in the process of updating woodsmoke emissions estimates
- Woodsmoke is among the **top 4 largest PM_{2.5} emissions categories** next to mobile on-road, refineries, and road dust emissions
- During peak winter months (Dec-Jan), PM_{2.5} emissions from woodsmoke can account for approximately **one-third** of total Bay Area emissions

Wood-Burning Devices and Health Impacts



- In 2022, there were approximately **800,000 wood-burning fireplaces** and **90,000 woodstoves** installed in the Bay Area
- Fireplaces account for approximately two-thirds of the total PM_{2.5} emissions from wood burning
- Woodsmoke causes hundreds of new cases of asthma in children every year and is also likely responsible for hundreds of premature deaths every year

Woodburning Device Types and Alternatives



Fireplaces

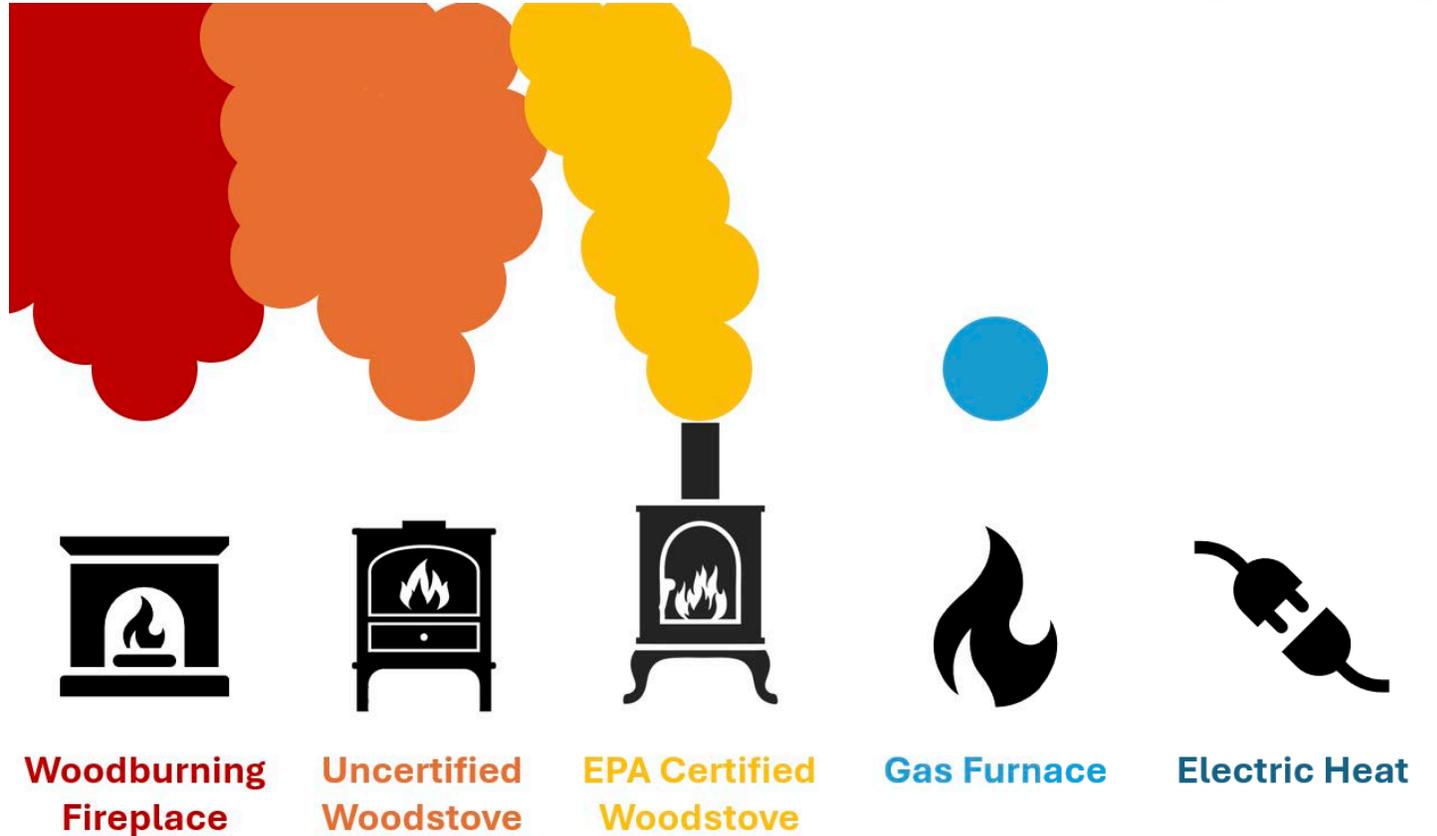


Fireplace Inserts and Wood Stoves



Certified by USEPA and
subject to emissions standards

Images sourced by [Clean HEET Program Guidance](#)



VERY DIRTY

VERY CLEAN

Image adapted from [EPA Burn Wise](#)

Current Rules



Rule 6-3: Wood-burning Devices

- Bans wood burning when 24-hour PM_{2.5} levels are forecast to be above the federal standard (Spare the Air Alert), with some exemptions
- Prohibits the installation of a wood-burning device in new building construction (effective Nov. 1, 2016)
- Fireplace and chimney remodels costing more than \$15,000 and requiring a local building permit can only install a gas-fueled, electric, or EPA-certified device
- Excessive smoke is prohibited year-round

Regulation 5: Open Burning

- Recreational burning is subject to Rule 6-3 Mandatory Burn Bans

Regulation 1: General Provisions

- Residential cooking exclusion

Our Woodsmoke Programs



Spare The Air

- Alert called when air quality is forecast to be unhealthy
- Spare The Air Alert notifies the public when wood burning is not allowed
- Outreach done on wood burning ban and how to protect health
- Air quality resources and tips



Woodsmoke Enforcement

- Woodsmoke patrols are used to maximize area surveillance – particularly in known woodsmoke complaint areas and highly impacted areas
- First time violators have an opportunity to take the Air District's Wood Smoke Awareness Written Test in lieu of paying a fine



Woodsmoke Reduction Incentives Programs

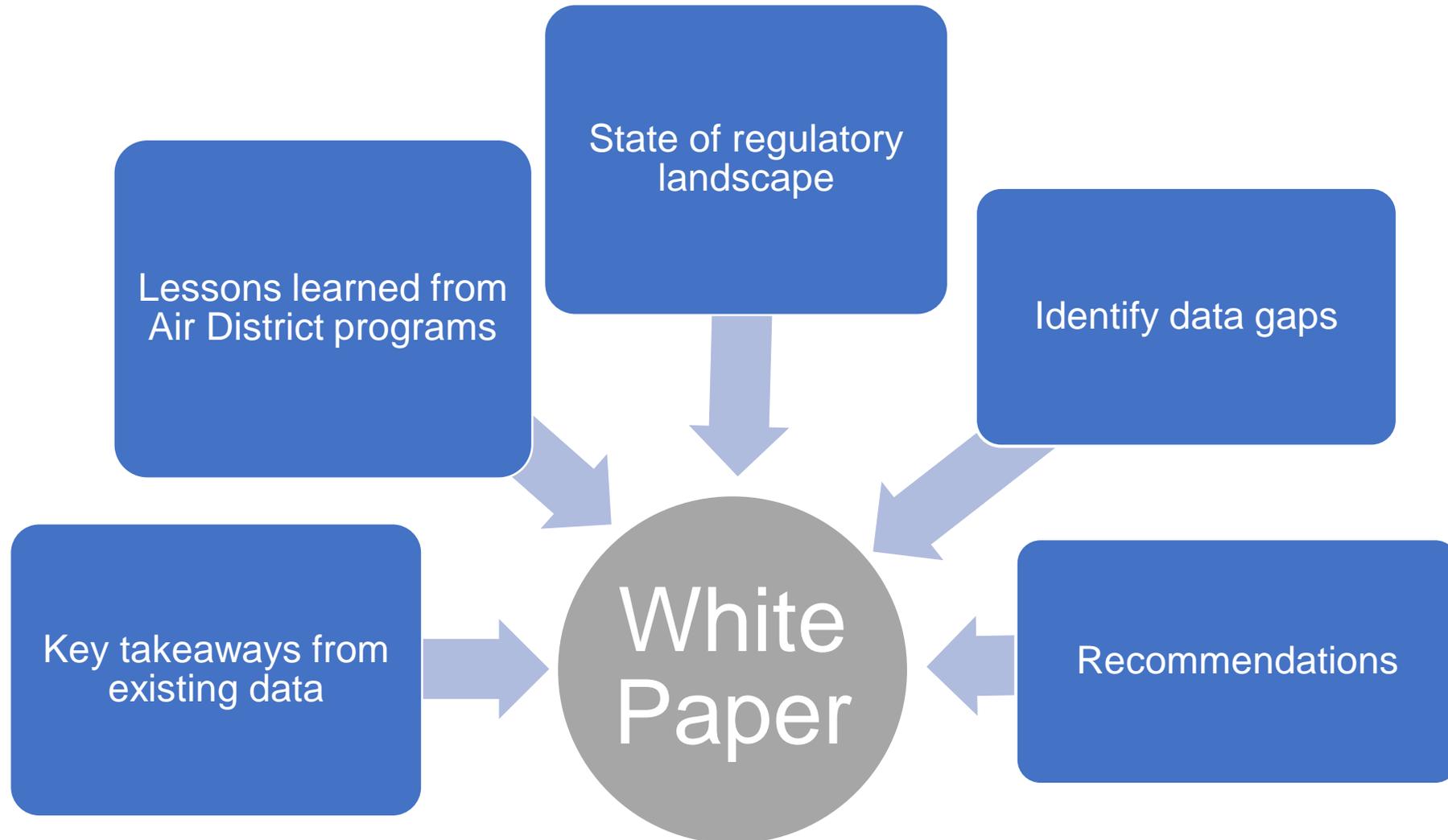
- Between 2016-2019, nearly \$3 million to approximately 1000 projects
- Launched Clean HEET program in March 2024 to help offset the cost of switching from a wood-burning stove or fireplace insert to an electric heat pump



Public Awareness

- Air District Rule 6-3: Wood-burning devices contains several awareness provisions:
 - Disclosure requirements for the sale/rental/leasing of real property
 - Device sale/installation public awareness labeling requirements
 - Labeling for solid fuel or wood sale

White Paper Development



Gap Analysis – Other Rules/Programs



Reviewed regulatory measures from the following jurisdictions:

- US Environmental Protection Agency – New Source Performance Standards for Wood Heaters
- South Coast Air Quality Management District – Rule 445: Wood Burning Devices
- San Joaquin Valley Air Pollution Control District – Rule 4901: Wood Burning Fireplaces and Wood Burning Heaters
- Sacramento Metropolitan Air Quality Management District – Rule 421: Mandatory Episodic Curtailment of Wood and Other Solid Fuel Burning
- Other states including Oregon, Washington, Colorado, Alaska, Utah, New York, Massachusetts
- Local ordinances – City of Berkeley, City of Oakland, City of Portland

Potential Policy Mechanisms



- Strategies for addressing woodsmoke emissions involve minimizing the act of wood burning (curtailment) or transitioning wood-burning devices to alternatives
- These objectives can be realized through mechanisms grouped into the following categories:

Policy
Mechanisms for
Burn
Curtailment

Policy
Mechanisms for
Wood-Burning
Devices

Policy
Mechanisms for
Outreach

Policy Mechanisms for Burn Curtailment



Tiered Burn Curtailment Program

- Multiple stages of curtailment for different devices
- Not recommended

Lower the Mandatory Burn Ban trigger threshold

- There are public health benefits to reducing PM_{2.5} concentrations below 35 ug/m³ for both short-term and long-term exposures

Ban all burning with some exemptions

- Exemptions could include heating, loss of or lack of utility service, financial hardship, etc.

Policy Mechanisms for Devices



Expand device types subject to rule requirements

- Such as outdoor cooking devices

Cleaner requirements for major fireplace/wood stove renovations

- Beyond current requirement of an EPA-certified wood-burning device

Robust incentives program

- Could target specific device types, activity type, or populations
- Scale and scope considerations

Decommission or replacement at point of property sale

- Could target specific device types

Policy Mechanisms for Outreach



Model ordinance to support local governments in resolving local woodsmoke disputes

- Consult with local governments on their existing woodsmoke ordinances (e.g. City of Berkeley)

Support increased compliance through education and public awareness

- Expanded outreach and public awareness efforts
- Additional educational opportunities (e.g., solid fuel point of sale)

Targeted outreach and incentives support to active wood burning populations

- Multi-faceted outreach on reducing both emissions and exposure

Potential Paths and Objectives



Path #1

**Minimize Ambiance
Burning**

Path #2

**Eliminate Ambiance
Burning**

Potential Paths May Employ a Suite of Policy Options



For example, a suite of policy options may involve:

Path #1

Minimize Ambiance Burning

- Lowering the burn ban threshold
- Increasing enforcement of burn restrictions
- Increasing voluntary reductions (incentives and/or outreach)

Path #2

Eliminate Ambiance Burning

- Banning burning year-round with exemptions
- Requiring decommissioning or replacement of wood-burning devices at point of property sale
- Accelerating voluntary device transition through incentives programs

Further Studies in the Next Phase of This Policy Initiative



- Equity lens on the potential policy path
- Emissions benefits analysis
- Economic considerations
- Implementation considerations
- Relevant data gaps
 - Device type and use populations (e.g., sole source of heat)
 - Outdoor woodburning sources

Next steps



- Release woodsmoke white paper in Q2/Q3 2024
- Public engagement on white paper findings and comments in Q3/Q4 2024

Feedback Requested



- Discussion on potential objectives and path forward