



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 4

Update on Fugitive Dust Rule Amendment Effort

**Stationary Source Committee Meeting
October 9, 2024**

**Eric Lara
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Presentation Requested Action

- No action required
- Informational item

Presentation Outcome

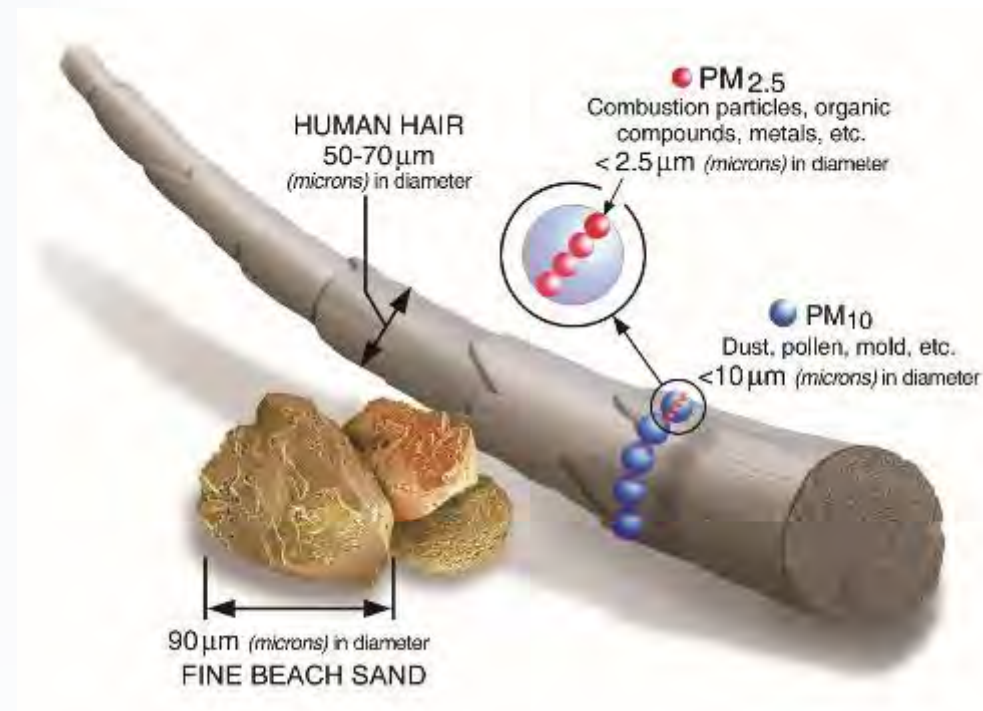
To provide a project update on the fugitive dust rule amendment effort and to gather feedback on potential near-term actions.

Presentation Outline

- Fugitive Dust Background
- Recap of White Paper
- Project Status Overview
- Proposed Strategies
- Next Steps & Discussion

Fugitive Dust Background

- Particulate Matter (PM₁₀) describes inhalable particles 10 micrometers in diameter or smaller
 - PM₁₀ can pass through the throat and travel into the lungs and may cause adverse health effects
- Fugitive dust is PM₁₀ generated from open air operations and not released from a stack or point source
 - Fugitive dust is often episodic and caused by mechanical or wind driven events
 - Chemical composition of fugitive dust may vary depending on the source or activity type
 - Fugitive dust accounted for 62% of total PM₁₀ emissions in the Bay Area in 2023
 - A significant concern from impacted communities



Source: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>

Sources of Fugitive Dust



Recap of White Paper

Impetus:

- [West Oakland Community Action Plan](#) (WOCAP) and [Path To Clean Air](#) (PTCA) measures identified fugitive dust for further study
- Advisory Council prioritization in [PM Reduction Strategy Report](#)

Goals:

- Identify and explore opportunities to reduce localized PM emissions, increase compliance, and improve practical enforceability of requirements

Methods:

- Holistic review and gap analysis of rules in other districts and states
- Knowledge assessment of current best strategies to address fugitive dust

[Link](#) to White Paper

Fugitive Dust Rules Background

- **Rule 6-1: *General Requirements***

- Emission rates and concentration limits
- General visible emissions and opacity requirements
- Requirements for large permitted bulk material handling sites

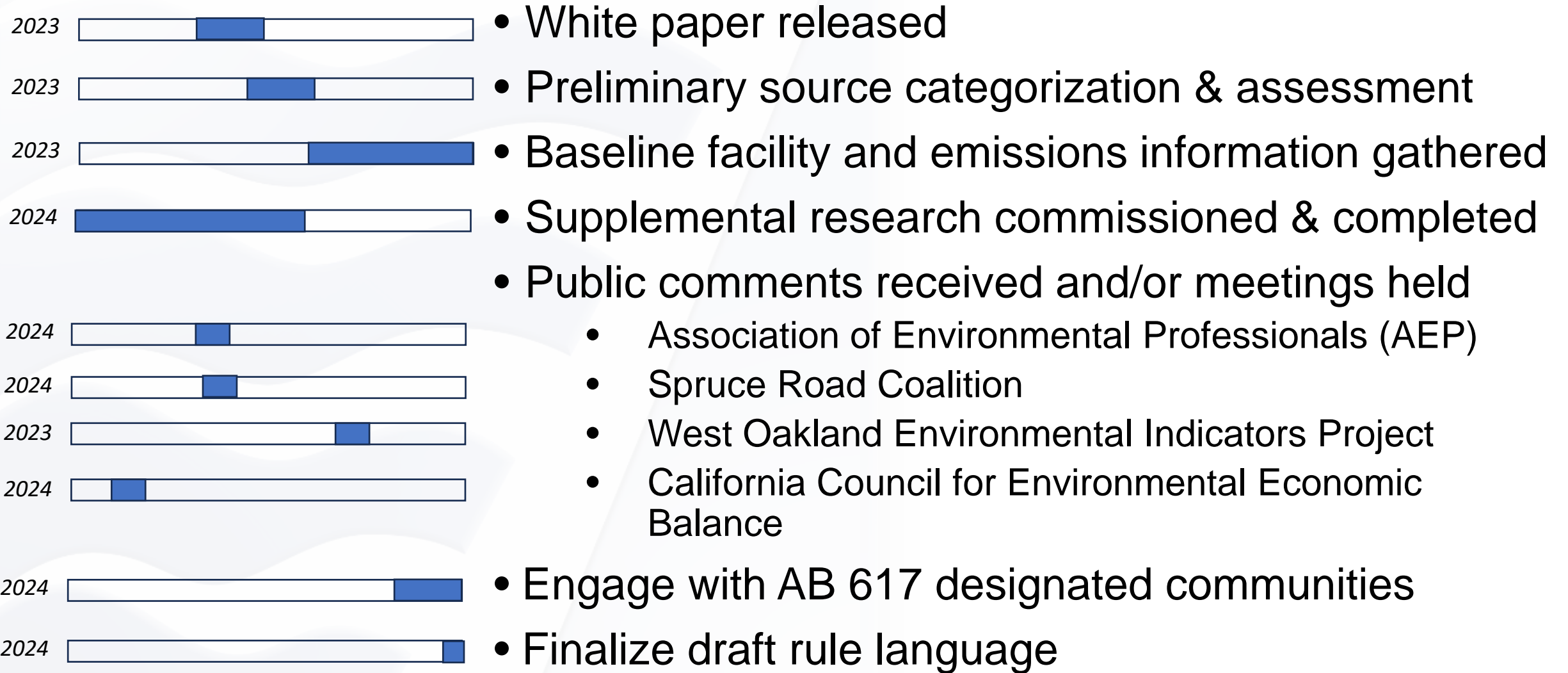
- **Rule 6-6 : *Prohibition of Trackout***

- Requirements for the prohibition of trackout
- Trackout refers to materials inadvertently carried out of a site by vehicles onto the public roadways
- Includes minimization measures to control trackout

Recap of White Paper Findings

- Requirements identified in other jurisdictions:
 - Best Management Practices (BMPs)
 - Site-specific controls
 - Dust control plans and registration requirements
- Potential opportunities to explore:
 - Moisture content and stabilization testing methodologies
 - Refinement of property line visible opacity limits
 - Additional trackout reduction measures
 - Controls and guidance for high winds
 - Permitting requirement enhancements

Project Status Overview



Scope and Focus of Rule Amendment Concepts

Add requirements to implement specific best management practices (BMPs) for various operations and activities

Develop a Registration Program for projects with dust-generating potential

Clarify and update Property Line requirements for fugitive dust

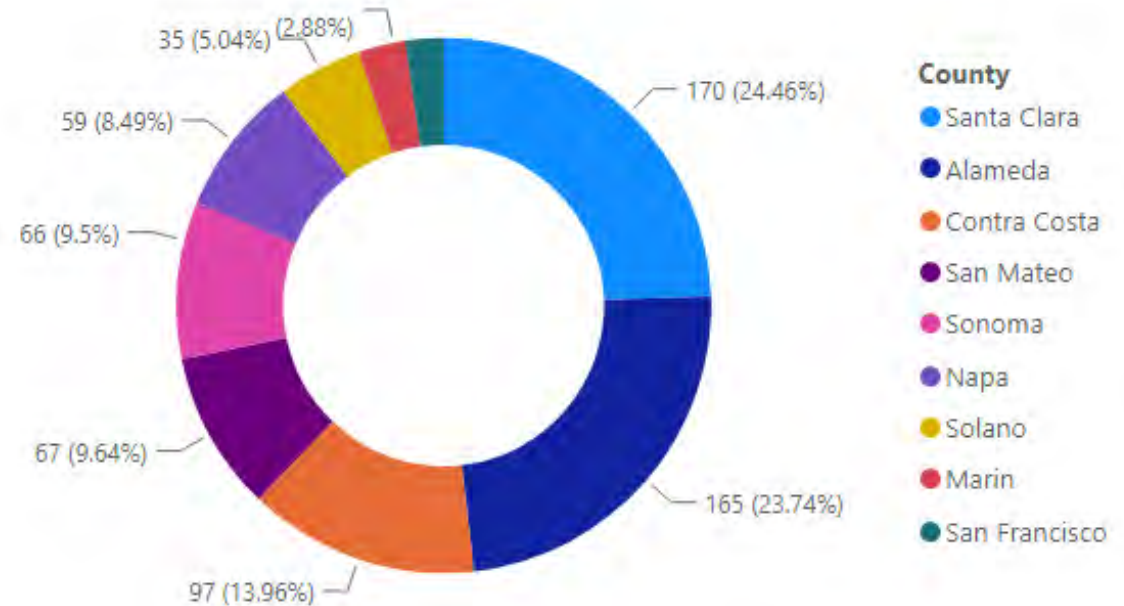
Update Test Methods for adequately wetted and properly stabilized materials

Develop fenceline monitoring requirements

Scale and Types of Sites in Bay Area

- Construction Projects
 - Approximately 600 active projects greater than 1 acre
 - Additional smaller sites
- Disturbed Surface Sites
 - Approximately 20 permitted sites
- Bulk Material Handling Sites
 - Approximately 120 permitted sites

Number of Sites by County



Operations and Activities of Concern

- Unpaved Roads
- Material Handling & Storage
- Material Transfer Processes



- Demolition Activities
- Property Exit Controls
- Street Sweeping & Watering

Next Steps and Milestones



Finalize Concepts



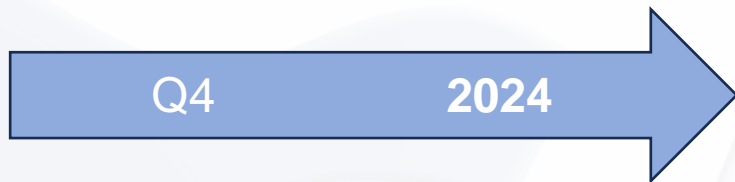
Continue to Engage Stakeholders



Release Preliminary Staff Report and Draft Rule Language



Conduct Public Workshops





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AGENDA: 5

Update on Publicly Owned Treatment Works White Paper Analysis

**Stationary Source Committee Meeting
October 9, 2024**

**Chris Easter
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Outline

- Driver for White paper Efforts
- White paper Process
- Existing Regulatory Landscape
- Emissions Inventory
- Data Gaps
- Next Steps
- Feedback and Questions

Source Description

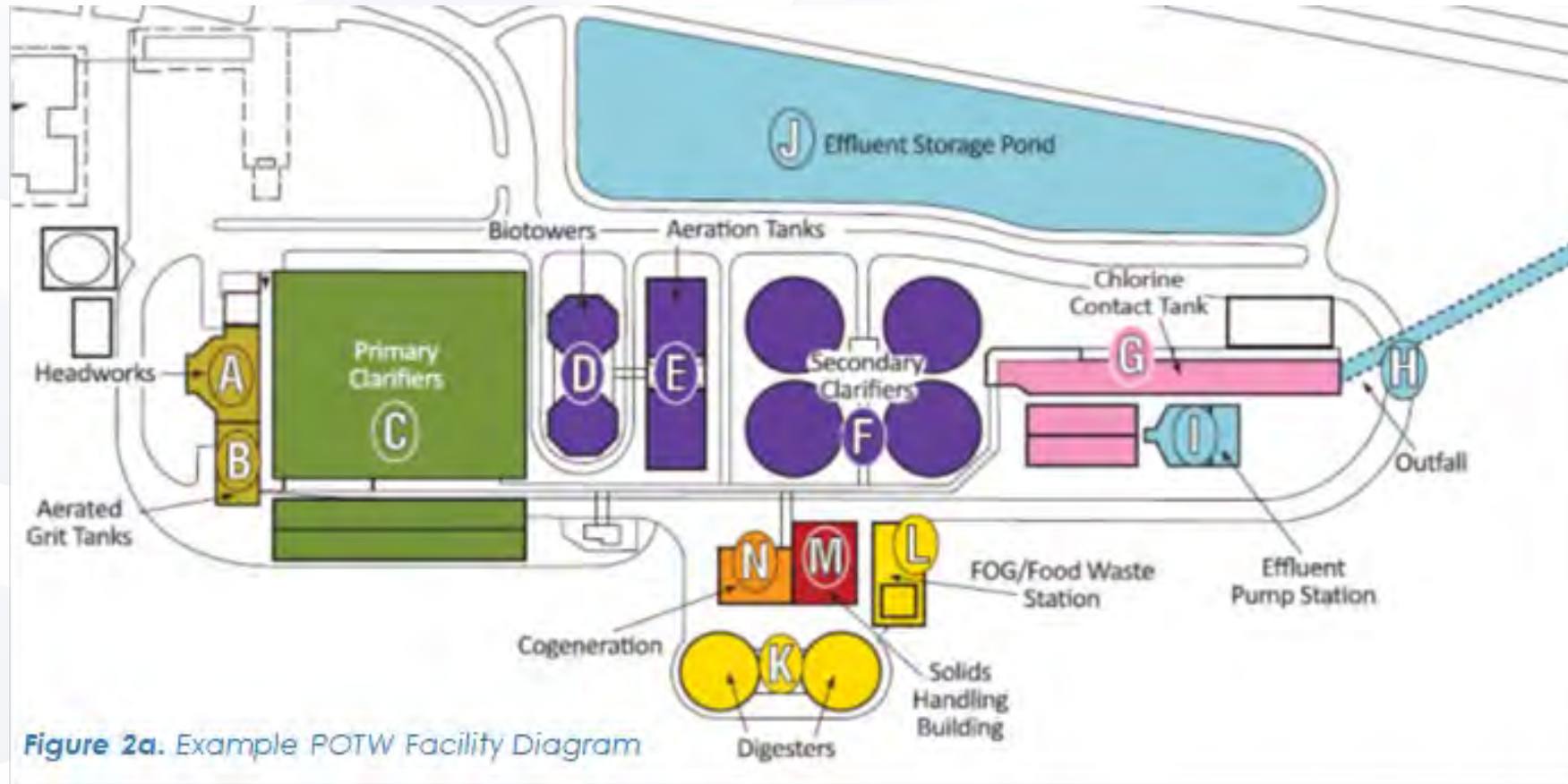
- **Public Owned Treatment Works (POTW)**

- Wastewater treatment systems run by municipalities (or states) to treat non-industrial sanitary sewage (and storm water)
- Emissions of concern: volatile organic compounds (VOCs), methane, hydrogen sulfide, odors
- POTWs typically have anaerobic digestion systems facilities

- **Anaerobic Digesters**

- Co-located at POTWs and also can operate as stand-alone systems
- Similar emissions profile as POTWs
- Dry systems typically operate at a higher percent of solids (20-40%) and wet systems normally operate with a lower levels of solids (10-20%)

Example POTW



Central Marin Sanitation Agency conceptual diagram:
<https://www.cmsa.us/public-ed/virtualtour>

Dry Anaerobic Digester Facility

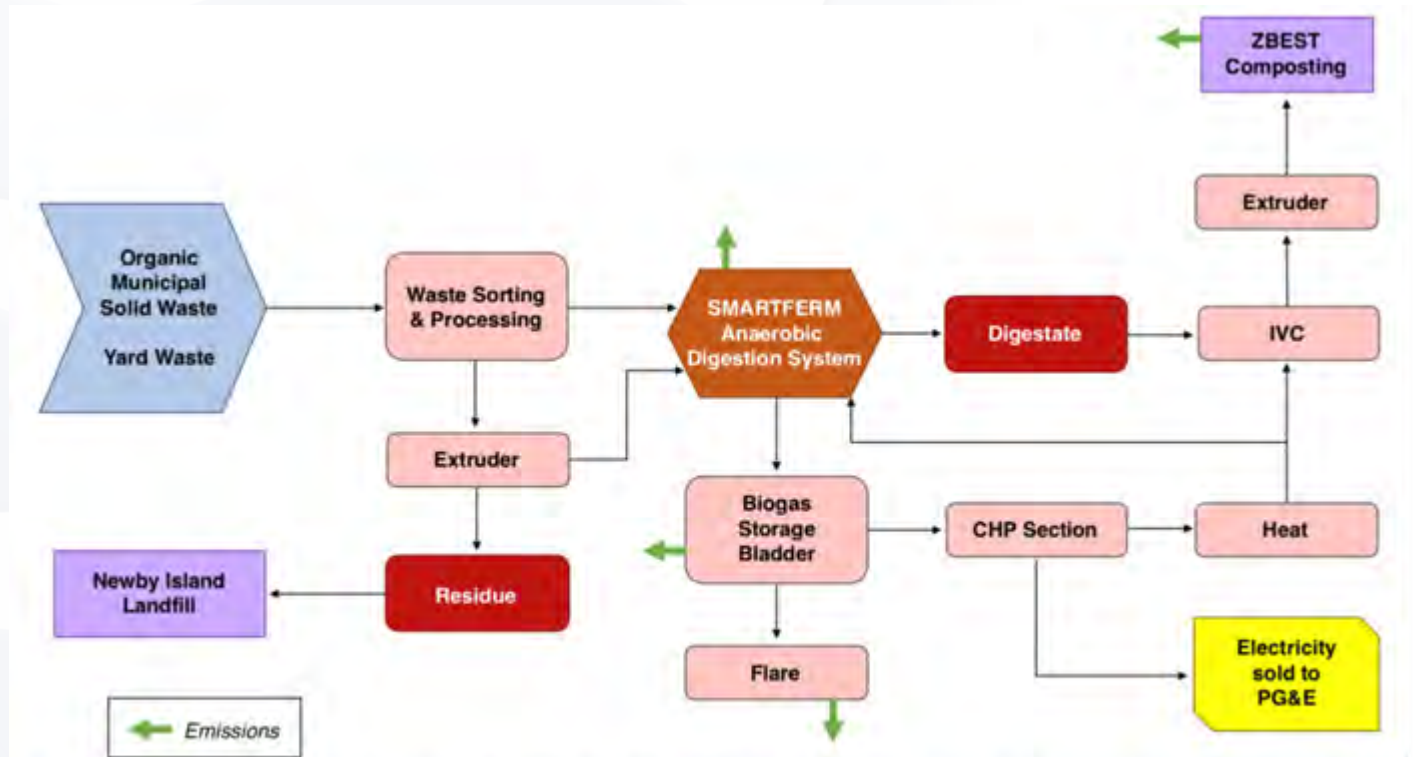


Figure 2b. Example dry anaerobic digester facility (ZWEDC, San Jose, CA), CHP = combined heat and power unit; IVC = in-vessel composting funnel; SMARTFERM = AD technology from German company Eggersmann.

Kirchstetter et al (2019) Based on ZWDEC San Jose

Drivers for White Paper Efforts

- **Senate Bill (SB)1383**

- Mandates a statewide diversion of organic material by 50 percent of 2014 baseline levels by 2020, and 75 percent by 2025
- Anticipated increase in organic waste diverted to waste handling facilities including POTWs

- **2017 Clean Air Plan**

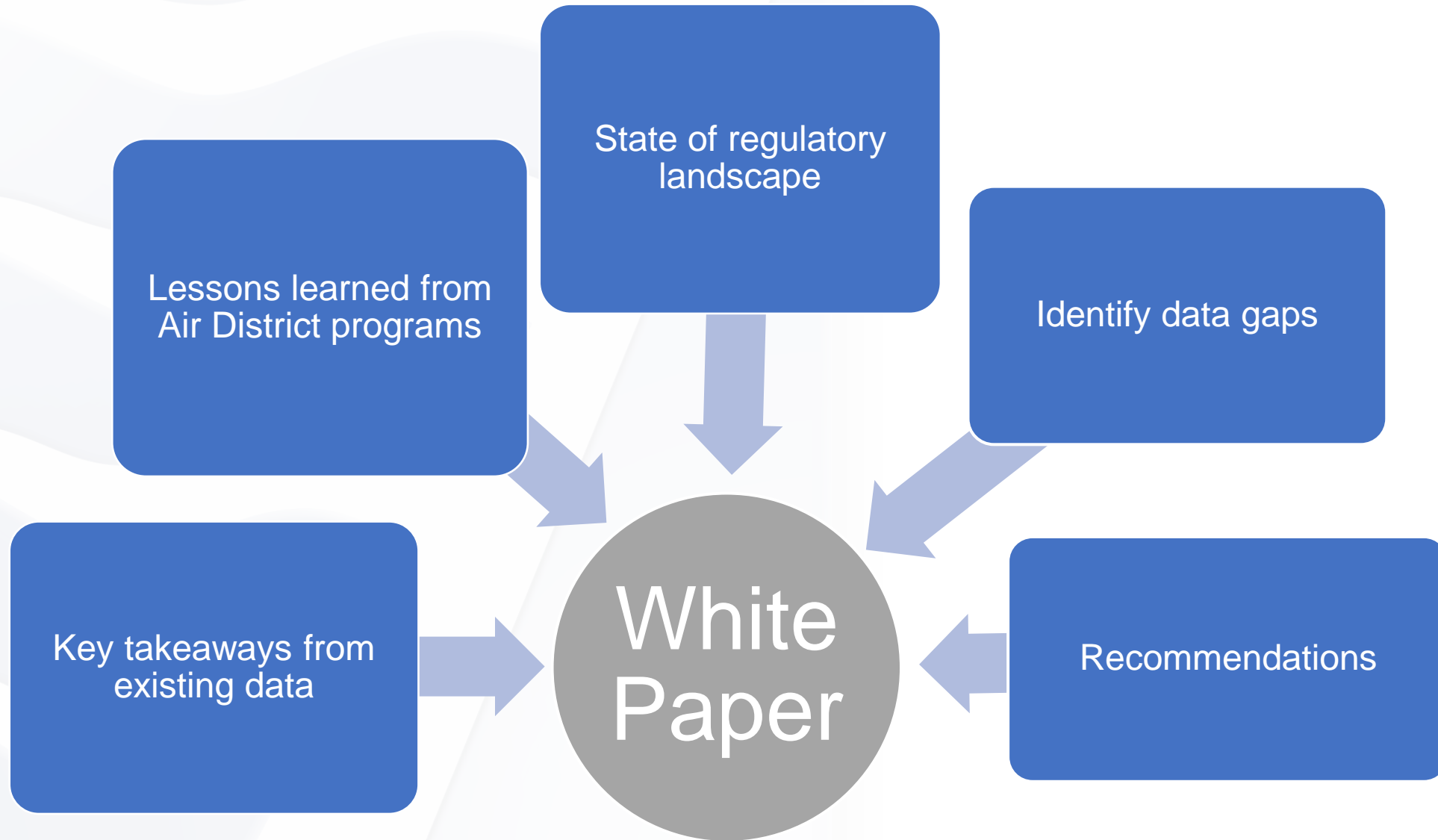
- 2019 concept paper for Regulation 13-4

- **Assembly Bill (AB) 617 – West Oakland Community Action Plan**

- Further Study Measure #4

“FSM 4 directs the District to work with California Air Resources Board (CARB) and East Bay Municipal Utility District (EBMUD) to support the identification of strategies and incentives to address community concerns about odors, health-related emissions, and disclosing to the community information about complaints and complaint resolutions from the EBMUD facility.”

White Paper Development



Air District Rules Applicable to POTWs

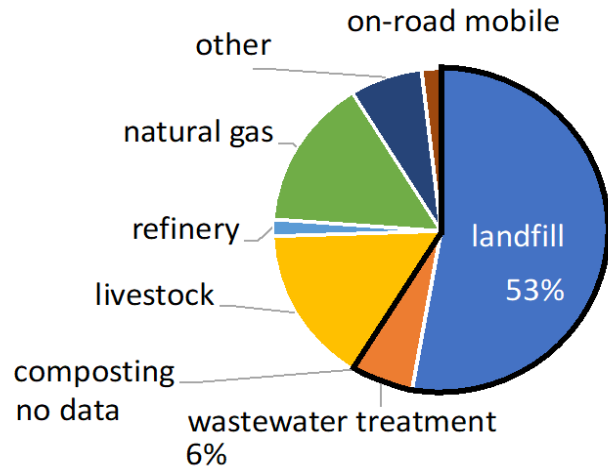
- **Permitting Rules** - Including Rules 2-2, 2-5 and 2-6
- **Regulation 7- Odorous Substances**
- **Rule 8-2** - Organic Compounds from Miscellaneous Operations
- **Rules 9-1 and 9-2** - Sulfur Dioxide, and Hydrogen Sulfide
- **Rule 11-18-** Reduction of Risk from Air Toxic Emissions at Existing Facilities

Regulatory Landscape – Other Jurisdictions

- **South Coast Air Quality Management District**
 - Adopted Rule 1179.1 in 2020 to address emissions of nitrogen oxide (Nox), Carbon Monoxide (CO), and VOC from combustion sources at POTWs
- **Antelope Valley Air Quality Management District**
 - Rule 1179 requires POTWs to prepare an Emissions Inventory Plan to account for emissions of VOCs and odorous compounds
- **State**
 - AB 2588 Air Toxics “Hot Spots” Program requirements
 - AB32 Global Warming Solutions Act
- **Federal**
 - Title V permitting requirements
 - Water quality regulations

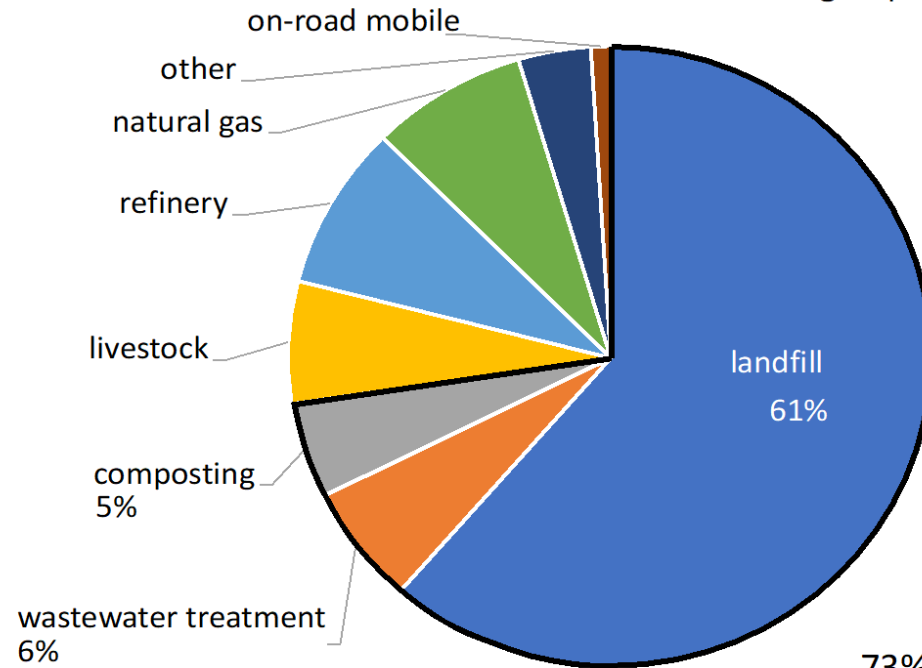
Methane Emissions Variance (Bottom-up vs Top-down)

Current Inventory - total = 10 MMTCO₂e
116.5 Gg CH₄



59% of sectors with CH₄ emissions

Revised Inventory - total = 19 MMTCO₂e
222.6 Gg CH₄

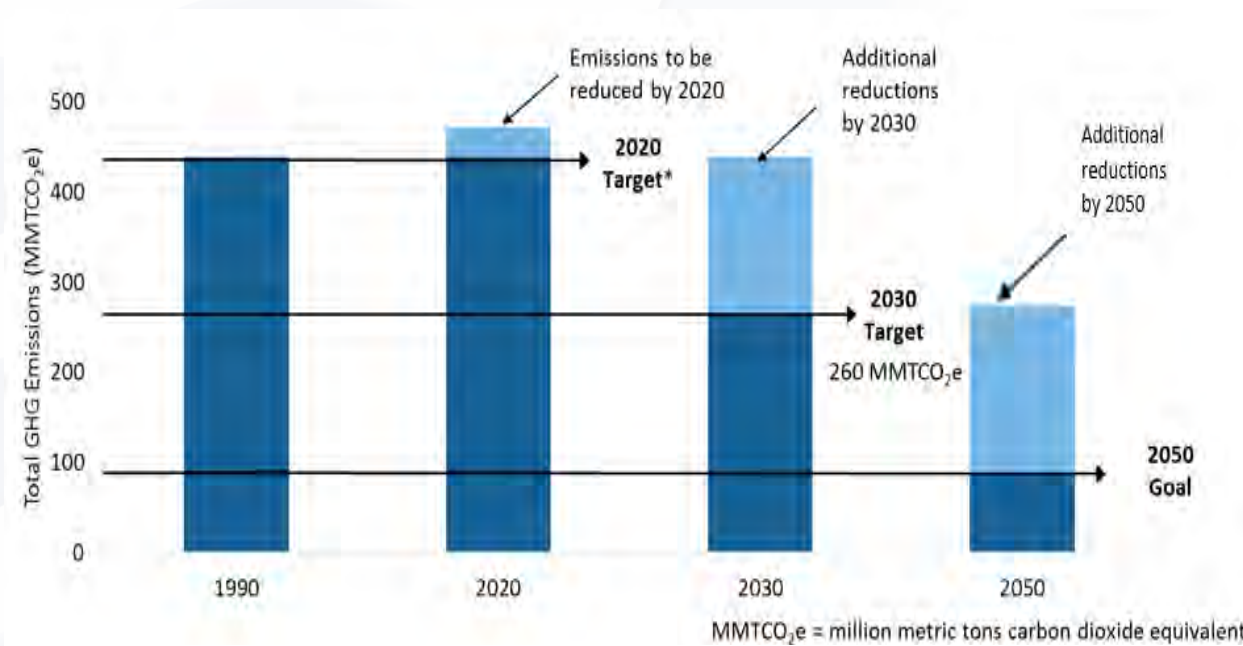


73% of sectors with CH₄ emissions

Comparison of current and revised Bay Area CH₄ inventories (from Guha et al., 2020). Total emissions shown were estimated using a 20-year GWP horizon.

SB 1383 – GHG Emissions Reduction Challenges

- Additional food waste diverted from landfills to wastewater treatment plants
- Anticipated increase in methane generation at POTWs and potential effect on emissions (reduction in waste/transfer of greenhouse gas (GHG) emissions to POTWs from Landfills)



CARB 2022: Overall State of California goals for GHG emissions reductions, from "Analysis of Progress Toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target"

Data Gaps

- Variance in methane emissions between top down (Aerial Measurements) and bottom up (Current Emissions Inventory Methods)
- Improved source testing and monitoring data collection/methods
- Emissions from sewage treatment facilities and anaerobic digesters
- Control options and cost

POTW White Paper Process

Knowledge
Assessment, Gaps
Analysis and Internal
Review
Quarter (Q) 4 2024

Public engagement on
White Paper findings
Q2 2025

Release of White Paper
Q1 2025

Feedback and Discussion

Thank you!