Council Report:
We Agree That…

- Particulate matter (PM) is dominant health risk driver for both air toxics and criteria pollutants in Bay Area.
- Major improvements since 2005, but air toxics cancer risk still averaged nearly 700 in million throughout Bay Area in 2014, and may be as high as three to four times that in most-impacted communities.
- Diesel PM is dominant contributor to air toxics cancer risk, both in most-impacted communities and regionally.
- Diesel PM, and particularly black carbon, is major contributor to PM non-cancer risk (premature death and illness).
  - Black carbon is also short-lived climate pollutant, and thus is contributor to climate change health risk.
- Mobile sources, including on-road trucks and other vehicles, are major contributors to Diesel PM.

Council Report:
Focus on Diesel PM

While we have more to do to identify and more fully evaluate scientific issues associated with specific District options:

- We concur that District's focus on Diesel PM directionally correct and warranted, and we strongly support that focus.
- We encourage ambitious approaches, including voluntary and aspirational "stretch" goals, in multi-faceted effort.
- We look forward to working with Board and Staff to identify and evaluate effective Diesel PM-directed, and other means, to improve air-related public health, both in most-impacted communities and regionally.
- We plan to focus on this issue moving forward, and will provide updates to Board on progress.

AGENDA: 10D

Stationary Incentive Program: Connecting Technologies and Customers

TIO Value: TECHNOLOGY EVALUATION, MATCHMAKING, and FINANCING

Key Financing Terms of Proposed Revolving Loan Program

$4M initial TIO revolving loan fund

- Deployed at $1-2M per year over next 3 years
- # projects/year: 5-10
- Targeting $3M in loans and $1M in loan guarantees

IBank Current programs

Loans for municipalities, universities, schools, hospitals

- $500K to $30M
- 2% to 3% interest

Loan guarantees for small businesses

- up to $2.5M
- up to 80% guarantee

Proposed Air District program

- Offer Air District funds at 0% to reduce interest
- 10% to 25% of total loan plus up to $185,000 in fees for first projects

- Increase IBank's standard loan guarantee amounts to encourage more banks to provide loans
- Up to additional 10% loan guarantee

Proposed Financing Process

Applicant Outreach (TIO)

- Steering Committee provides guidance on facility and technology priorities
- TIO conducts outreach to facilities through partners (investors, trade orgs, govts, etc.) and refers them to IBank

Criteria Screening (IBank)

- Projects must meet minimum criteria defined in Program Guidelines and IBank investment criteria

Engineering Evaluation (TIO)

- TIO engages with facilities interested in adopting new technology
- TIO performs technical analysis of potential project for facility to adopt new technology

Loan Review and Approval (IBank)

- Report on loans to Air District Board before IBank action
- IBank staff underwrites repayment ability and finalizes financing terms; IBank board reviews/approves

Loan Repayment and Reinvestment (TIO)

- Loans are repaid to Air District within 5 years; proceeds are reinvested in new projects

AGENDA: 12C

New Grant Program Revenues and Request to Increase Staffing in the Strategic Incentives Division

August 1, 2018
Board of Directors Meeting
Jack P. Broadbent
Executive Officer/APCO

Staffing Evaluation Process

- Proposal to increase staffing from 396 to 404
- Recruiting and Staffing Audit
- Evaluation of positions – as openings occur
- Evaluating Automation to increase efficiency and to reduce or repurpose head count
- Salary Survey
- Staff to review comprehensive plan with Personnel Committee

Improving Neighborhood Air Quality

AGENDA: 15

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

AB 617: Community Health Protection Program

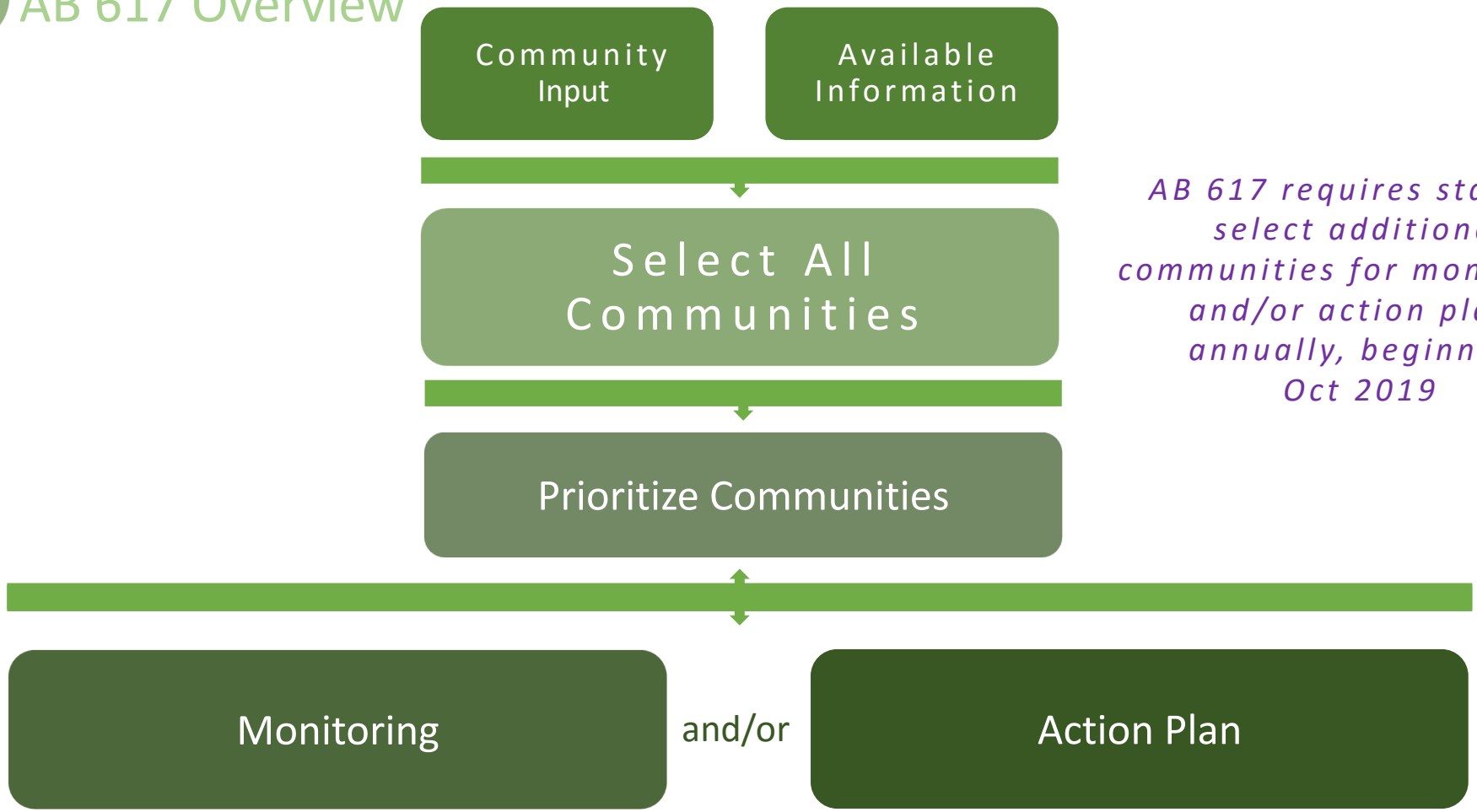
Elizabeth Yura
Community Health Protection Officer
Board of Directors
August 1, 2018

1. AB 617 Overview
2. Spring Workshops
3. Community Recommendations
4. What's Next

1 AB 617 Overview

Under AB 617, the state requires districts to work with communities to select all areas in the region that have a ***"high cumulative exposure burden"*** *and then* ***prioritize*** *areas for community monitoring and/or actions plans over the next 6 years.*

1 AB 617 Overview



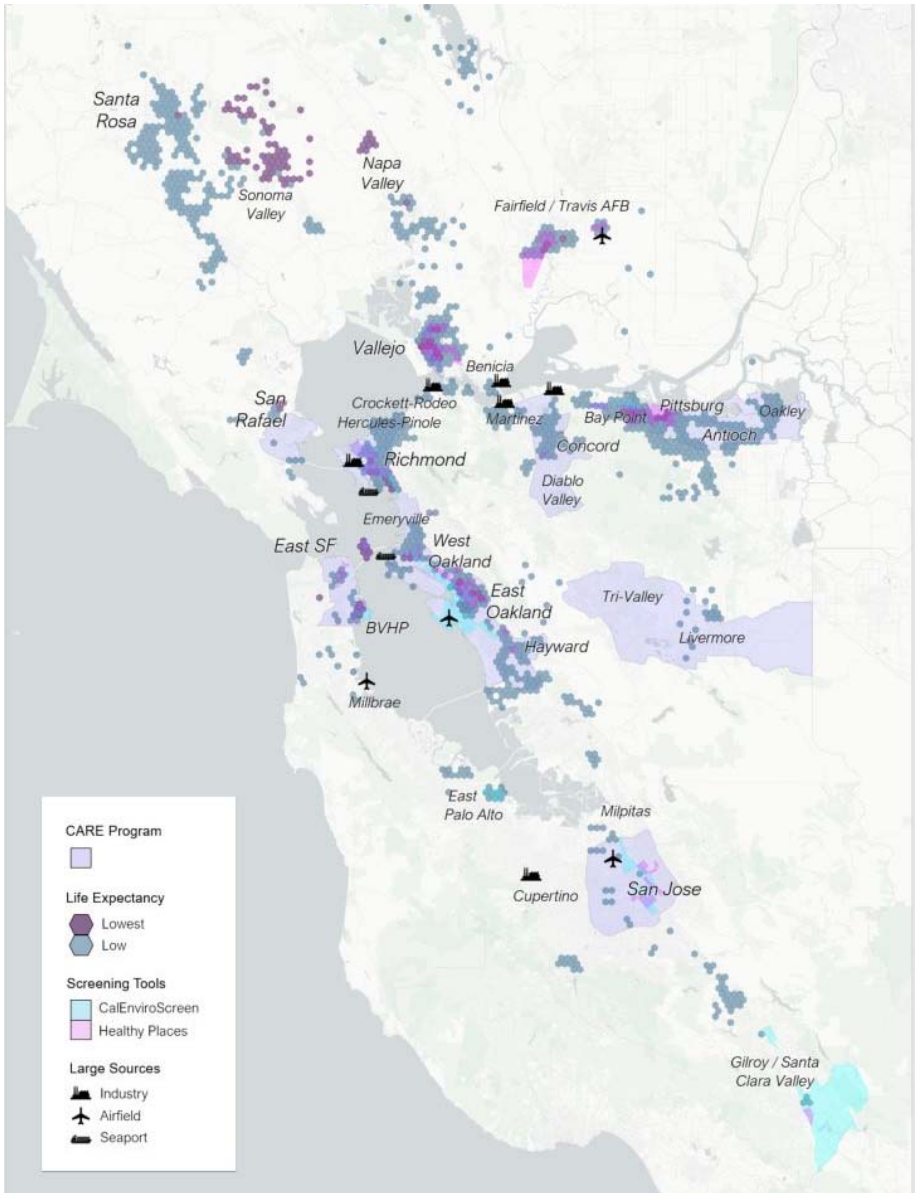
AB 617 requires state to select additional communities for monitoring and/or action plans annually, beginning Oct 2019

1

AB 617 Overview

All Communities

- Community Air Risk Evaluation (CARE)
- Areas with large sources
- Areas with health and pollution impacts
- Areas with low life expectancy



2 Spring Workshops

What we heard

Workshops held from Jan 31st through June 20th
Feedback – Air District should consider communities with:

- Refineries and other large facilities
- Woodsmoke
- Odors
- Multiple transportation sources
- History of contamination, violations, or environmental injustice

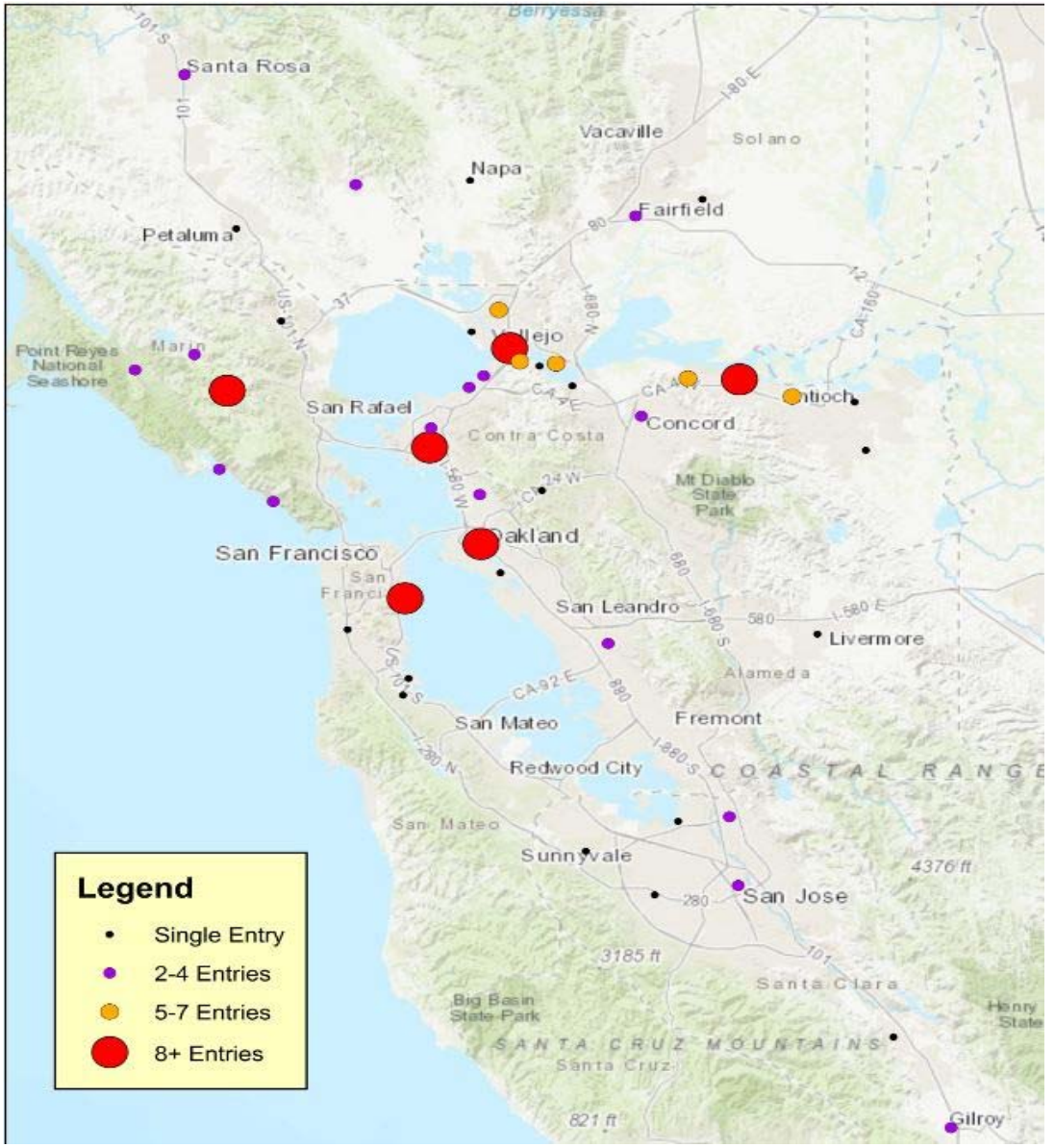
2

Spring Workshops

What we heard

Community Priorities:

- Marin, due to concerns over woodsmoke
- West Oakland
- Richmond
- Pittsburg-Bay Point area
- Vallejo
- East San Francisco



3 Community Recommendations

Criteria Used to Prioritize Communities

Air Quality

- Fine particles
- Toxics

Health

- Life expectancy
- Lung disease
- Heart disease

Other

- Known sources
- Air quality data
- Previous planning
- Collaboration
- Capacity

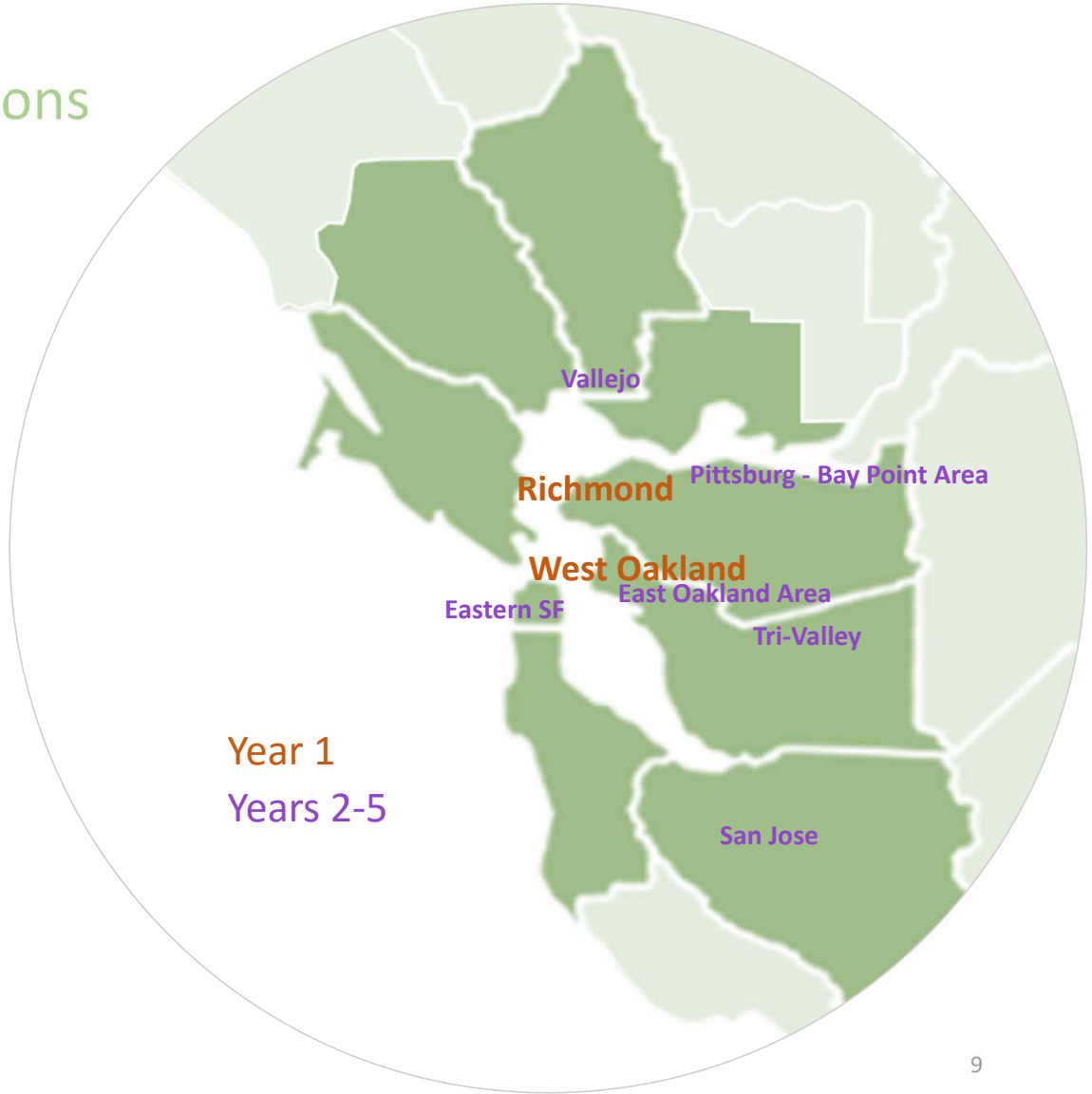
3 Community Recommendations

Year 1

West Oakland – action plan

Richmond – monitoring plan

Public comment period July 5 through July 16; some comments received



West Oakland

Action Plan

- Very high mobile source emissions
  - Port of Oakland largest single source of DPM
  - Roadways contribute significantly to $PM_{2.5}$
- High health burden
- High socio-economic vulnerability

- Concerns about new development at Port of Oakland and Oakland Army Base
- Goal of zero emissions environment
- Leverage previous and ongoing collaboration and research

Richmond

Monitoring Plan

- High emissions from stationary and mobile sources
  - Refinery, chemical plant, landfills, water treatment facility, metal scrapping, marine terminals, freeways, port
- High health burden
- High socio-economic vulnerability

- Regional monitoring data are not consistent with observed health issues
- More monitoring to evaluate which sources may be contributing to issues
- Leverage ongoing data analysis and monitoring work

Other Large Source Communities

Actions

- New refinery rules to require fence line monitoring and emissions tracking, Rule 12-15
- Reduce health risks from facilities that have the highest health impacts, Rule 11-18
- Further emissions reductions through improved control technology – BARCT
- Review new permitting practices to further reduce local emissions and exposure
- Mitigate health risks from new and modified sources, Rule 2-5

Woodsmoke Communities

Actions

- Provide additional incentives toward replacement of older wood-burning devices for cleaner heating alternatives
- Consider additional strategies to strengthen wood burning regulation (Rule 6-3) and enforcement

Landfill/Organics Communities

Actions

- Amend odor regulation (Reg 7) to strengthen odor standards and enhance enforceability of the rule
- Develop new regulations that limit organic emissions, methane and climate pollutants; Ensure best management practices at landfills/organics recovery facilities
  - Significant Methane Release (Rule 13-1)
  - Organics Material Handling (Rule 13-2)
  - Compost Operations (Rule 13-3)
- Research and test new odor detection technologies
- Update District Complaint Policy
- Joint partnership and commitment with South Bay Odor Stakeholder Group to develop a regional odor study to address Milpitas odor concerns
- Mitigate health risks from new and modified sources, Rule 2-5

4 What's Next

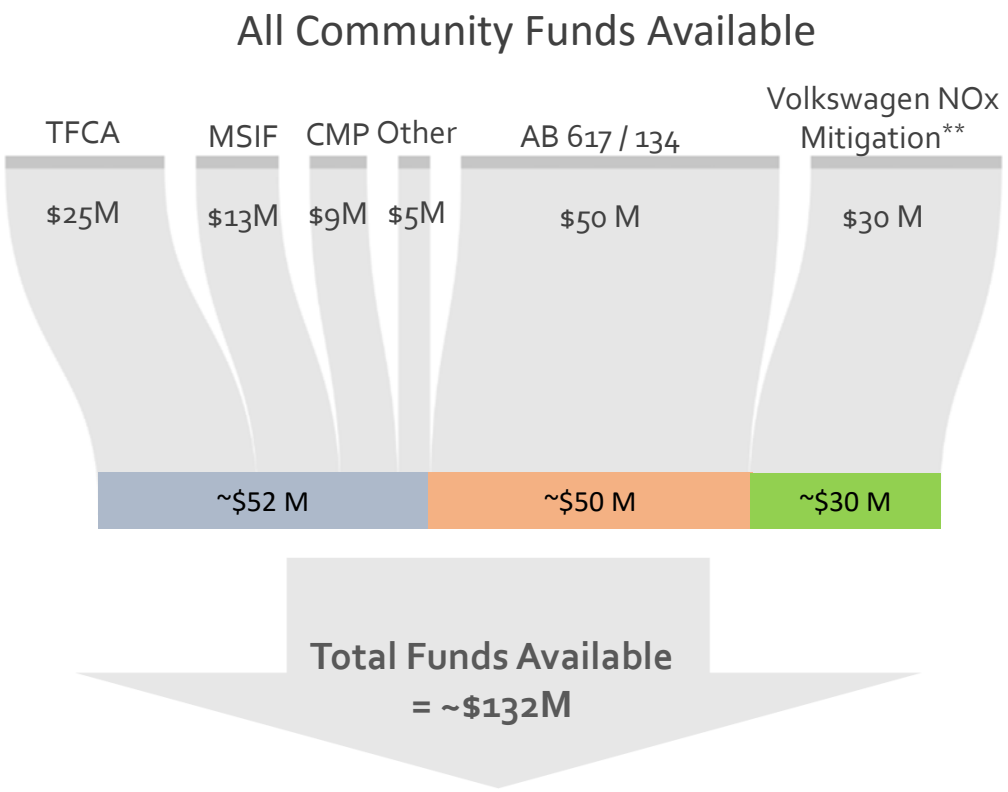
Build Capacity

- Work with communities to prepare for action and/or monitoring plans
- Establish community partnerships and relationships
- Develop a shared understanding of local air quality and other related concerns
- Community-led sensor program

4

What's Next

Community Resources



**Total Volkswagen funding is $423M statewide, which will be dispersed over a 4- to 6-year period. Staff projects that as much as 33% of this funding could go to projects located in the Bay Area.

Key:

TFCA – Transportation Fund for Clean Air
MSIF – Mobile Source Incentive Fund
CMP – Carl Moyer Program
Other – Other federal, state, and settlement funds
VW – Volkswagen NOx Mitigation Funds
AB 617/134 – Community Air Protection Program

Note: Funding amounts include project and administrative costs.

***As of July 2018**

4

What's Next

Community Resources

AB 617 Funds - Last Year (FY2017/18)

- $50 million to Bay Area for local emission reduction projects: clean trucks, buses, locomotives, construction and agriculture equipment
- Over $1 million to Bay Area communities for technical assistance

This Year (FY2018/19)

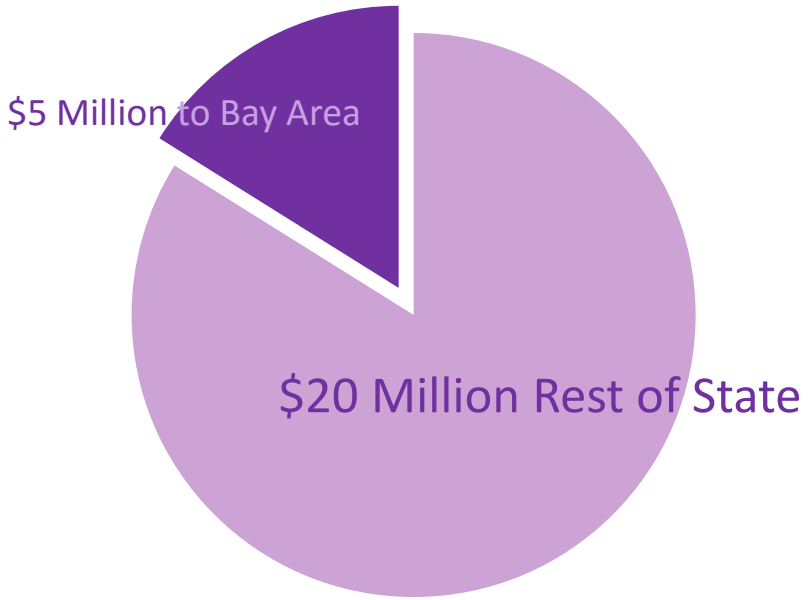
- Approximately $50 million to Bay Area for mobile and stationary source emission reduction projects as well exposure reduction measures
- Up to $10 million statewide for technical assistance

4

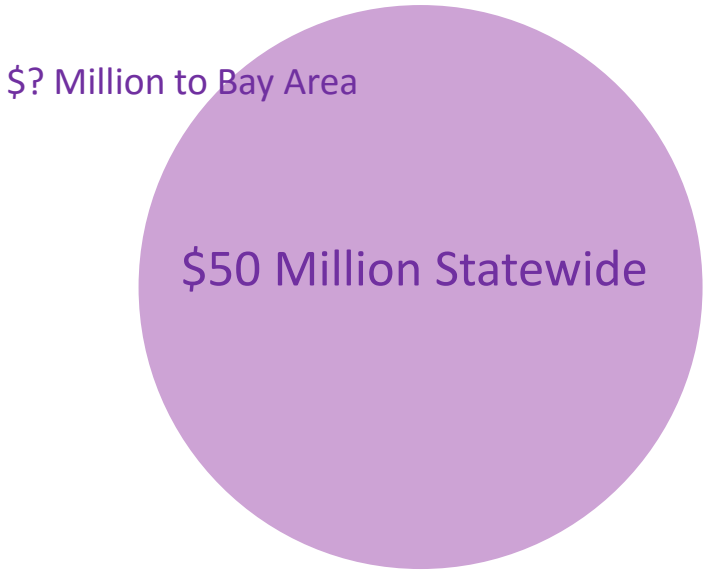
What's Next

Air District Resources

FY 2017/18



FY 2018/19



Recommended Action: Staff recommends that the Board of Directors approve the Year 1 -5 communities for the state's Community Air Protection Program.

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 16

Particulate Matter Rules Public Hearing

Guy Gimlen
Principal Air Quality Engineer
Board of Directors
August 1, 2018

Outline

- Particulate Matter (PM) basics
- PM Health Impacts
- Air Quality Trends
- PM Sources
- Rule Proposals
- California Environmental Quality Act (CEQA) Review
- Socioeconomic Reviews
- Recommendation for Adoption

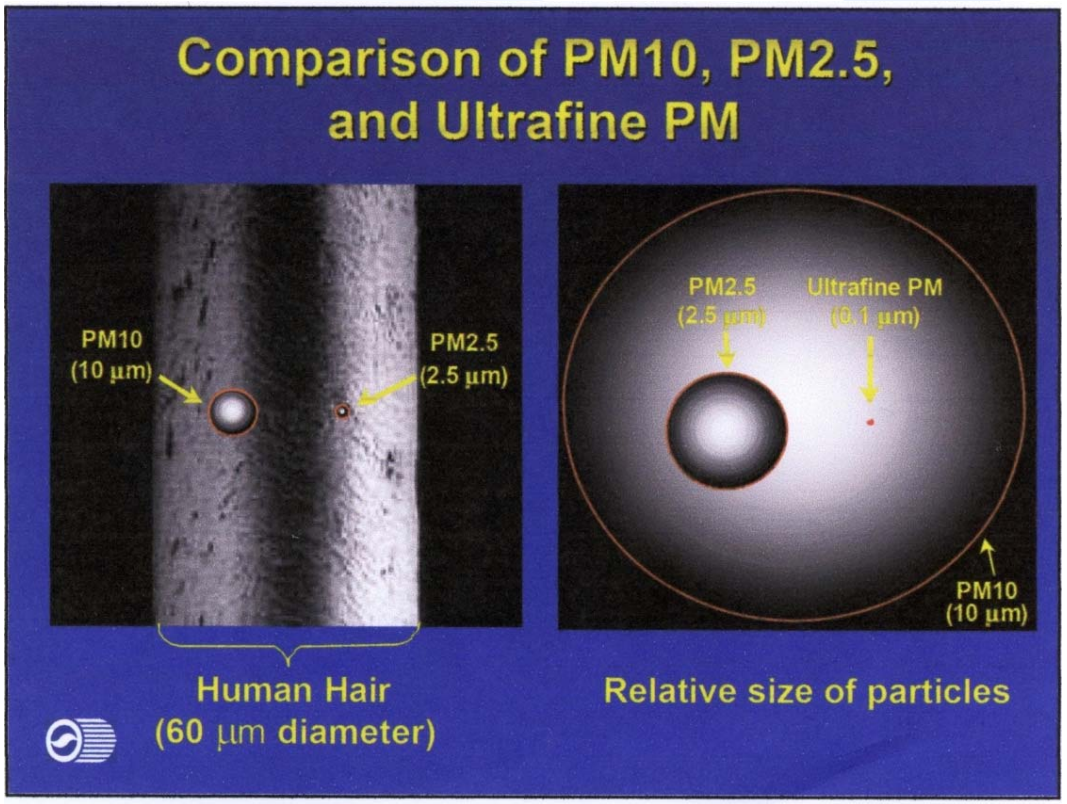
PM Basics

Particulate Matter is a diverse mix of airborne solid particles and liquid droplets that differ in size, mass, toxicity, chemical properties and how they behave in the atmosphere

- **Total Suspended Solids (TSP)**: ~50 microns or less
- **PM_{10}**: 10 microns or less
- **$PM_{2.5}$**: "Fine" PM 2.5 microns or less
- **Ultrafine PM**: 0.1 microns or less*

Smallest particles have the greatest health impacts!

* One *million microns = one meter*

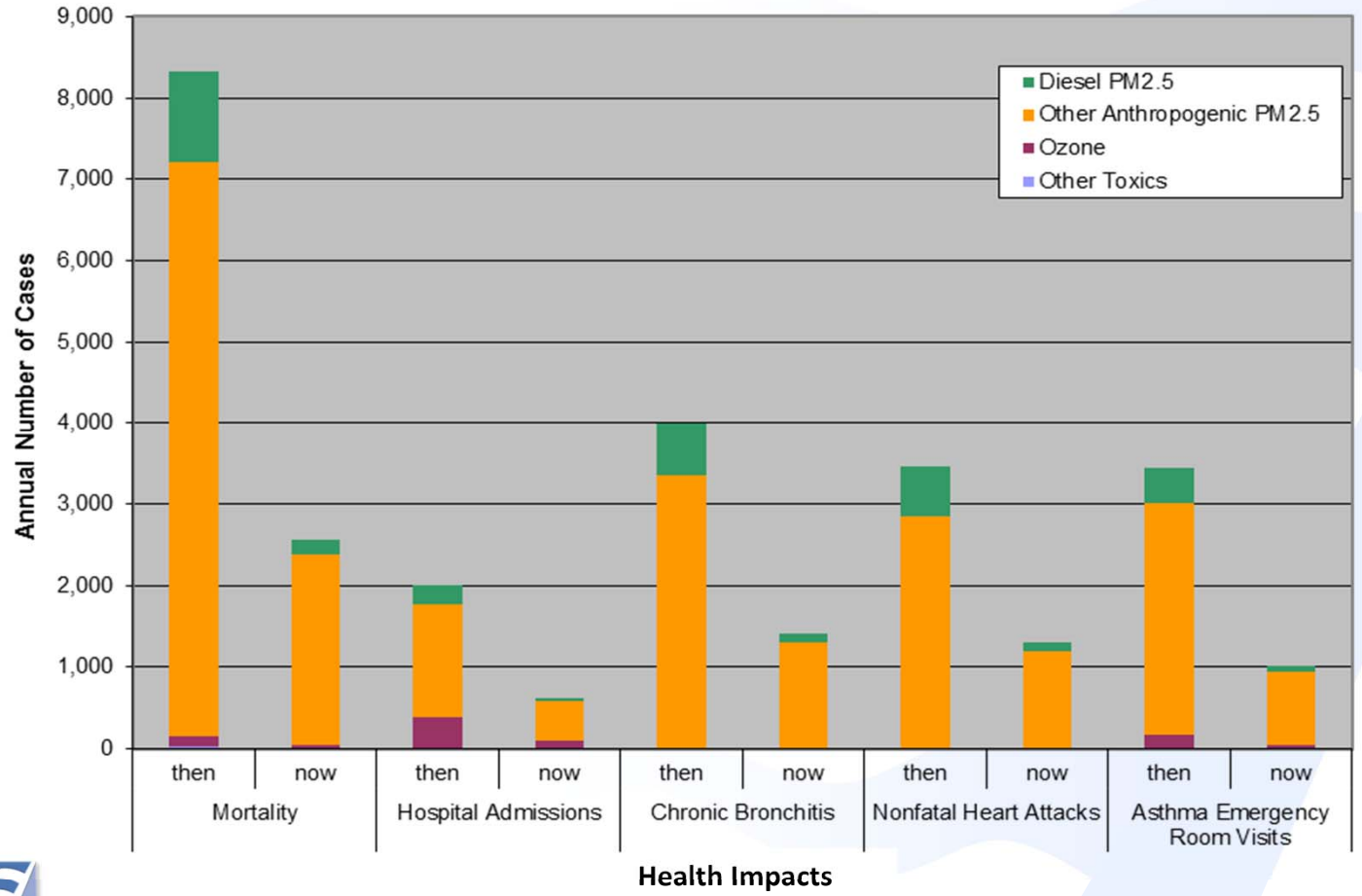


PM Health Impacts

- **Premature mortality**
  - Higher $PM_{2.5}$ levels → higher death rates
    $PM_{2.5}$ accounts for 2,000-3,000 premature deaths each year in the Bay Area
- **Respiratory problems**
  - asthma, bronchitis, impaired lung development
- **Cardiovascular problems**
  - Atherosclerosis, heart attacks, strokes
- **Cancer**
  - Diesel PM contains carcinogens
- **Adverse health impacts even at moderate levels**
  - From both short-term & long-term exposure
  - Children & elderly are most at risk
  - Small particles penetrate deep into lungs, bloodstream, organs, and cells

PM Health Burden in Bay Area

Health Burden: Past and Present



Then = 1970's for ozone, 1980's for toxics and PM

Now = 2015

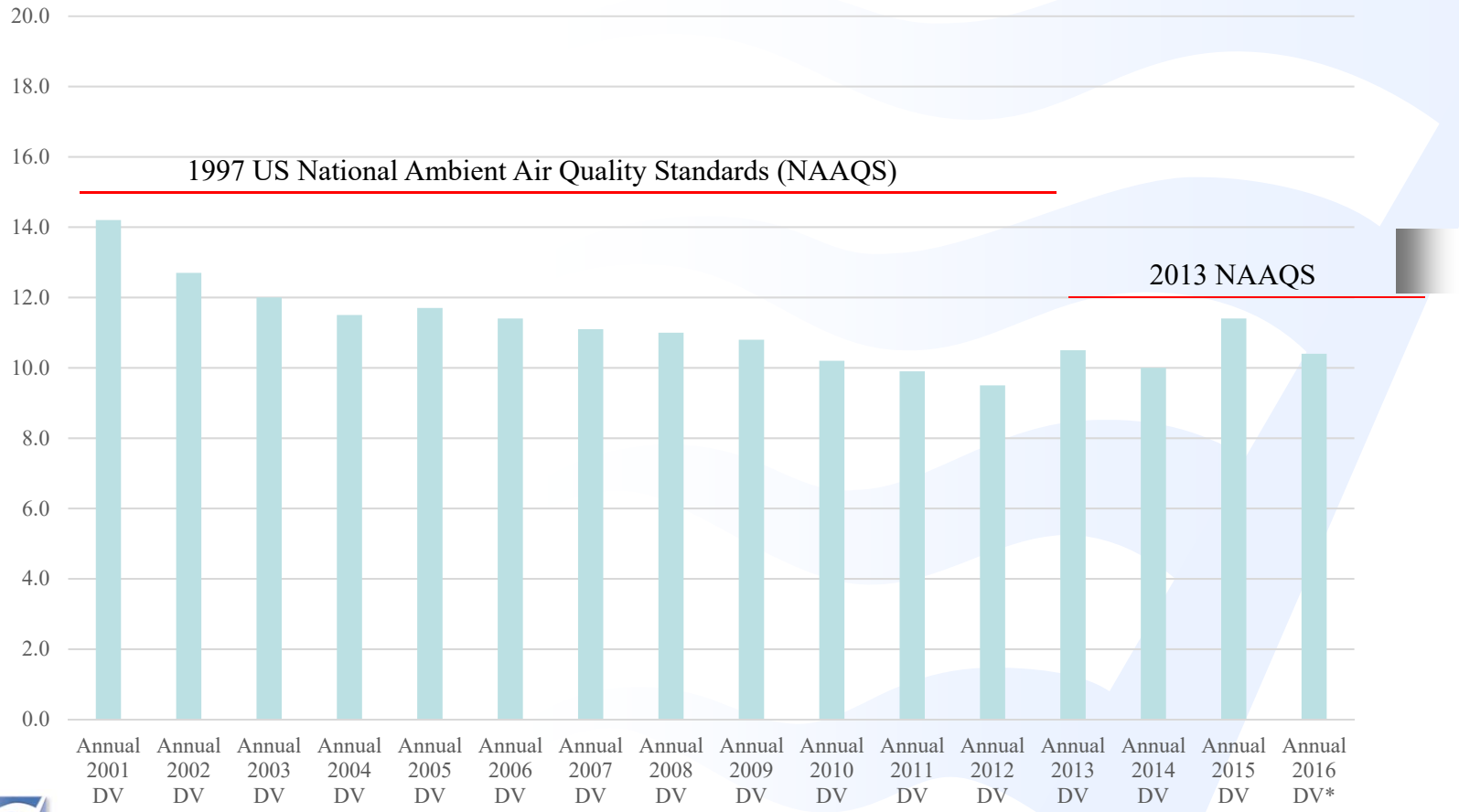
Source: Figure C-1, 2017 Plan Appendix C – Air Pollution Health Burden: Past & Present

PM Control Measures in 2010 CAP

- SSM 1: **Metal-Melting Facilities –** New Rules 12-13 & 6-4 to reduce PM from foundries & scrap recyclers – Complete
- SSM 6: **General PM –** Amend Rule 6-1 to reduce allowable PM emissions rate from a variety of sources – This project
- SSM 7: **Open Burning –** Amend Regulation 5 to limit amount that can be burned on permitted burn days – Complete
- SSM 9: **Cement Kilns –** Rule 9-13 to reduce PM, NOx, toxics – Complete
- SSM 16: **New Source Review –** Amend Rule 2-2 for $PM_{2.5}$ – Complete
- FSM 12: **Wood Smoke –** Rule 6-3 further study resulted in amendments to – Complete
- SSM 8: **Coke Calcining –** Rule 9-14 will reduce SOx – Complete

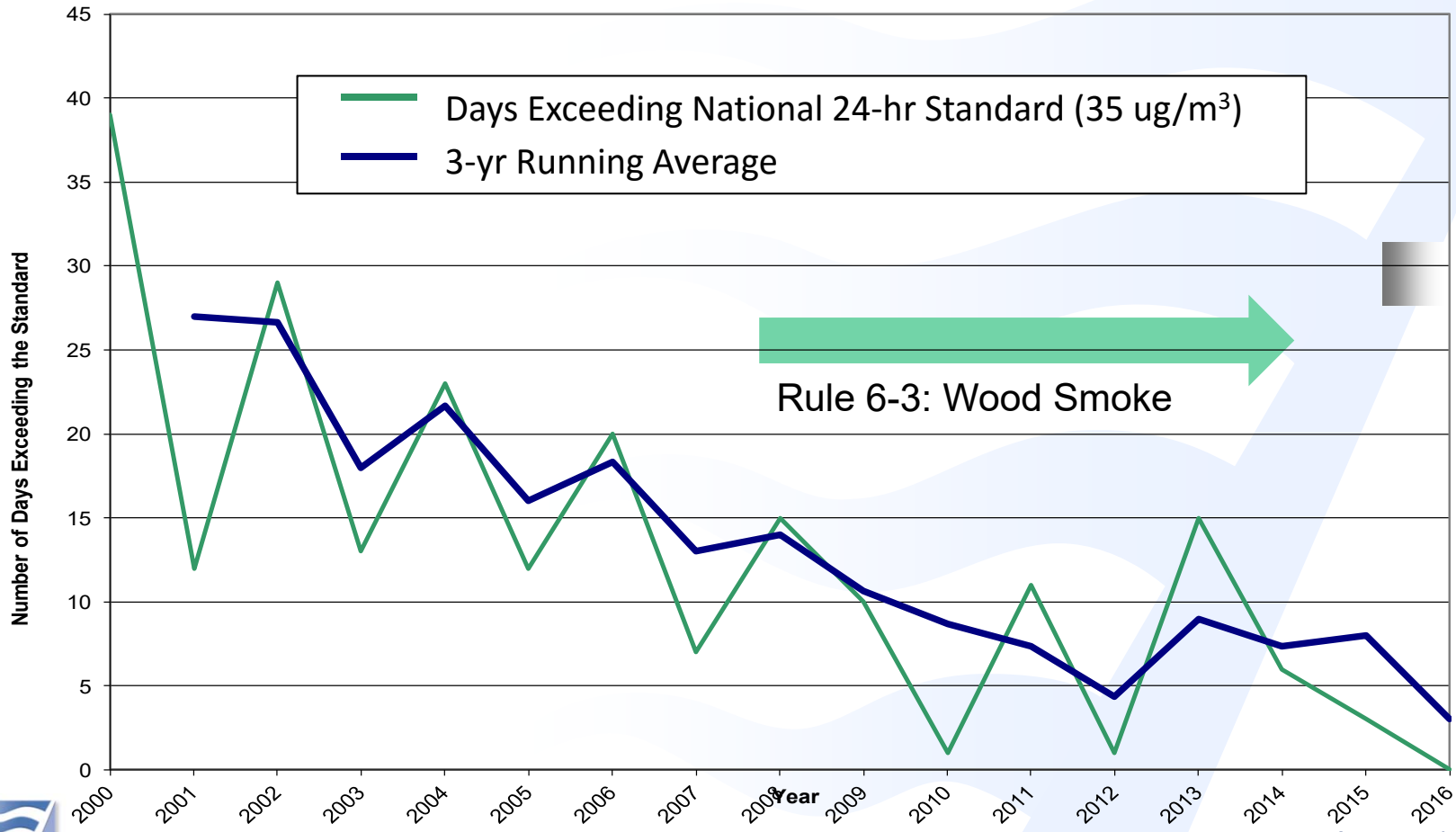
Air Quality Trends

Annual $PM_{2.5}$ Average (Design Value)

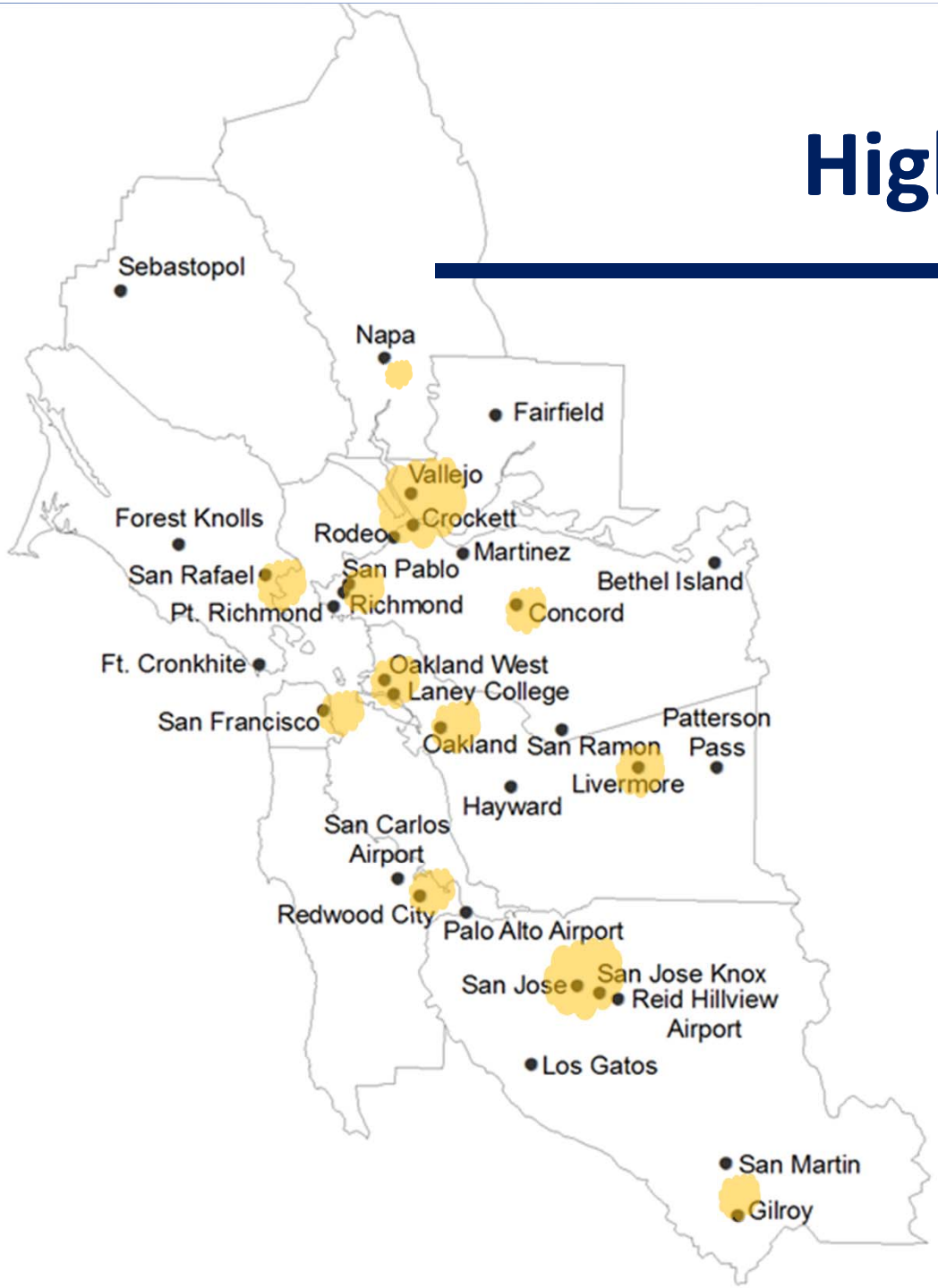


Air Quality Trends

24-hr $PM_{2.5}$ Exceedances each Winter



High $PM_{2.5}$ Locations



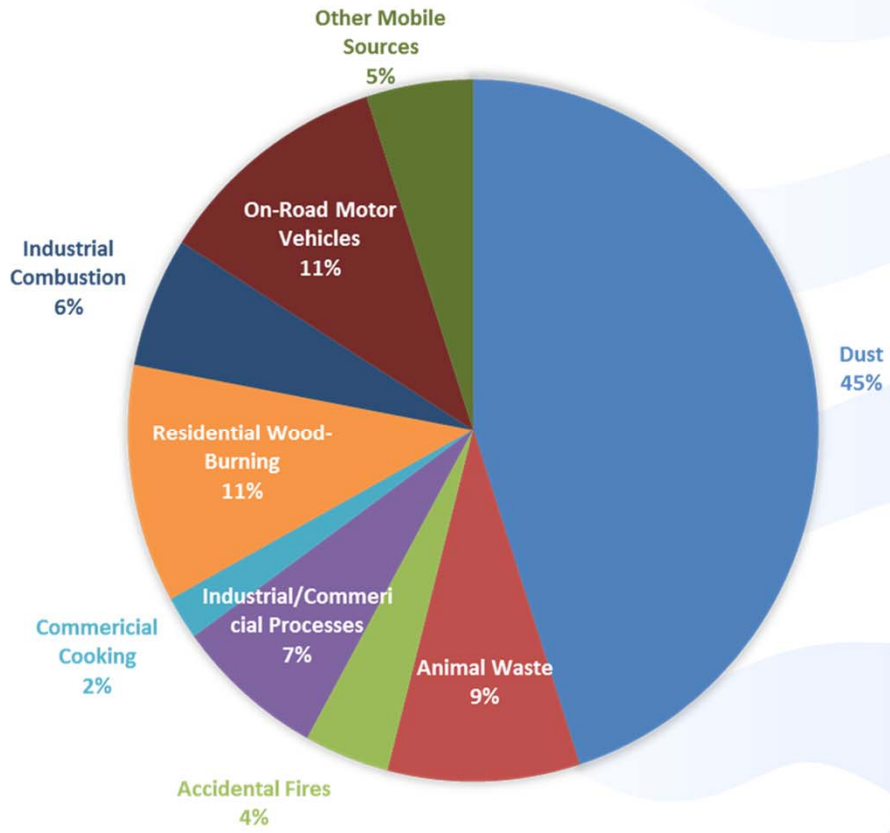
2011 - 2016

$PM_{2.5}$ Exceedances

Vallejo	17
San Jose	15
Livermore	7
Oakland East	7
Oakland West	6
San Rafael 6	
San Francisco	5
Redwood City	4
Concord	3
San Pablo 3	
Gilroy	3
Napa	2
Total	**80**
Winter	73
Wildfires	7

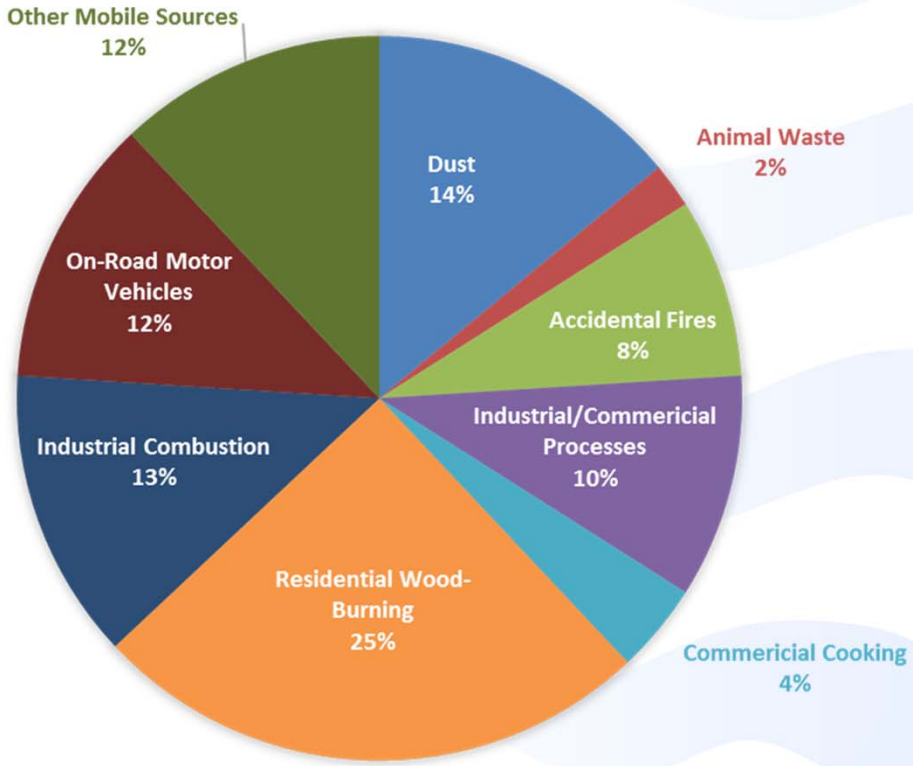
Sources of PM_{10}

2017 Clean Air Plan Figure 2-7: Direct PM_{10} Emissions by Source, Annual Average, 2015 (109 tons/day)



Sources of $PM_{2.5}$

2017 Clean Air Plan Figure 2-6: Direct $PM_{2.5}$ Emissions by Source, Annual Average, 2015 (47 tons/day)



Targeted Sources

Source Categories	PM_{10}	$PM_{2.5}$
• Road Dust – 6 subcategories	28.1 tpd	4.0 tpd
• Construction Dust – 5 subcategories	11.5	1.1
Industrial Combustion	5.2	5.1
• Petroleum Refinery Combustion	2.5	2.5
Industrial/Commercial Processes		
• Petroleum Refinery Processing	0.3	0.2
• Chemical Manufacturing	0.4	0.4
• Food & Agricultural Processes	0.4	0.3
• Wood Products	0.1	0.1
• Asphalt	0.2	0.2
• Concrete	1.1	0.8
• Glass	0.7	0.7
• Stone, Sand & Gravel	0.4	0.1
• Landfills & Waste Management	1.9	0.5
• Other	0.8	0.5

Control Methods

Combustion:

- Natural Gas
  - Burner design
  - Good Combustion Practices
- Refinery Gas, Landfill Gas, Digester Gas – more variable
  - Burner design focused on NOx
  - Good Combustion Practices
  - Flue gas oxidation?
- Burner design and Good Combustion Practices currently in place
- Reduce combustion through efficiency
  - Combustion Strategy in 2017 Clean Air Plan

Control Methods

Industrial / Commercial Processes:

- Dust control required where solids and solids handling are exposed to wind
- Truck traffic is often the largest source of dust emissions
- When solids handling and processing are contained and vented through a stack
  - Wet mechanical scrubbers and/or cyclones: 50 – 70% effective
  - Baghouses, or Electrostatic precipitators: 90^{+}% effective

Road Dust:

- Mud and other solids on roads are entrained into the air by traffic

Control Methods (continued)

Bulk Materials & Construction Dust:

- Wind Erosion
  - Wind screens ~70% effective for stockpiles, conveyors, and disturbed surfaces
  - Wind screens not effective at construction sites
  - Water is frequently used to reduce dust
- Truck traffic is a significant source of dust on unpaved roads within facilities
  - Water is used to reduce dust (water mist is usually more efficient than water spray)
- Trackout & Carryout Control
  - Trackout = mud and dirt on vehicles deposited on roads leaving the facility
  - Carryout = spills and dust from vehicles onto roads

Structure for PM Rules

- Proposed new umbrella regulation – Regulation 6
  - to provide common definitions and test methods that apply to all current and future PM rules.
- Amendments to Regulation 6, Rule 1: General Requirements
  - Including Bulk Material Storage and Handling
- New Regulation 6, Rule 6: Prohibition of Trackout
- Anticipate other source specific rules going forward

Rule 6-1: General Requirements

Currently a Total Suspended Particulates (TSP)

Proposed changes to Rule 6-1

- Tighten general PM emissions limits
  - concentration and mass limits to match the most stringent requirements in California
  - translation of TSP to PM_{10} and/or $PM_{2.5}$ requirements is challenging - depends on the specific solids
- Specify test methods for determining compliance
- Require periodic compliance testing
- Future rulemaking will need to be source-specific

Bulk Material Handling

Include Bulk Material Handling in Rule 6-1

- Addresses fugitive dust from all bulk materials, including petroleum coke and coal.
- Best Available Control Technology: cover transportation vehicles, and enclosures around handling, loading, and unloading – ducted to a baghouse.
- Requirements
  - No visible fugitive dust beyond property line
  - No significant visible emissions within the facility
  - Wind screens and water-mist systems for existing facilities
- Monitoring
  - For visible fugitive dust beyond property line twice daily
  - All sources at least once daily
- Expect emission reductions of 0.37 tpd PM_{10}, 0.03 tpd $PM_{2.5}$

Examples of Bulk Material Dust

Quarry

Petroleum Coke

Unpaved roads

Asphalt recycling

Bulk Material Dust Controls

Wind Screens

Mist Systems

Prohibition of Trackout

New Regulation 6, Rule 6: Prohibition of Trackout

- Currently required by many city / county ordinances, Storm Water Pollution Prevention Plans and California Motor Vehicle Code, but enforcement variable
- Road dust from trackout has high $PM_{2.5}$ content
- About 50% of construction sites had trackout issues.
- Requirements
  - No “significant” visible roadway material on adjacent paved roadway
    - Significant = more than cumulative 25 linear feet
    - Cleanup required with 4 hours
    - No more than 1 quart of trackout can remain at end of work day
  - Control dust during cleanup
  - Monitor twice daily
- Emission reductions of 1.23 tpd PM_{10}, 0.18 tpd $PM_{2.5}$

Examples of Road Dust - Trackout

From trucks

Soil Erosion

Examples of Trackout Controls

Grizzlies

Truck wash system

Rulemaking Process

Workshops:

- 8 workshops in January / February 2017
  - Cupertino
  - San Rafael
  - Walnut Creek
  - San Jose
  - San Francisco
  - Yountville
  - Dublin
  - Oakland

Public Hearing:

- Final Proposed Rules and Amendments
- CEQA and Socio-Economic Analyses completed

CEQA Analysis

Conducted CEQA Analysis on entire suite of PM rule proposals:

- New Regulation 6: Common Definitions and Test Methods
- Amendments to Regulation 6, Rule 1: General Requirements
  - Including Bulk Material Handling dust control
- New Regulation 6, Rule 6: Prohibition of Trackout
- No significant impacts
- Recommend adoption of Negative Declaration

Socioeconomic Analysis

Regulation 6, and Amendments to Rule 6-1: General Requirements

- No significant impacts on profitability of affected industries
- No impact on jobs

Regulation 6, Rule 6: Prohibition of Trackout

- No significant impacts on profitability of affected industries
- No impact on jobs

Response to Comments

Several Comments resulting in rule language changes

Other Comments received:

- Exemption to fugitive dust requirements if wind exceeds 25 mph
  - Concede that dust is difficult to control in high winds
  - May require shutdown of operations, tarps on stockpiles, 3-sided wind screens, dust control surfactants and watering
  - Exemption would allow dust blowing onto neighboring property
- Fugitive Dust limits are infeasible and unreasonable
  - Currently exist in South Coast Air Quality Management District (SCAQMD) and Rule 9-14 dust control requirements
- Weekly monitoring rather than every 4 hour or daily monitoring

Recommendations

Recommend the Board of Directors:

- Adopt Regulation 6: Common Definitions and Test Methods
- Adopt amendments to Regulation 6, Rule 1: General Requirements
- Adopt new Regulation 6, Rule 6: Prohibition of Trackout
- Adopt CEQA Negative Declaration
- Approve amendments to Manual of Procedures: Volume 1, Enforcement Procedures; Part 1, Assessment of Visible Emissions Opacity

Questions?