BAY AREA AIR QUALITY MANAGEMENT DISTRICT

AGENDA: 14

Air District Legal Authorities 101

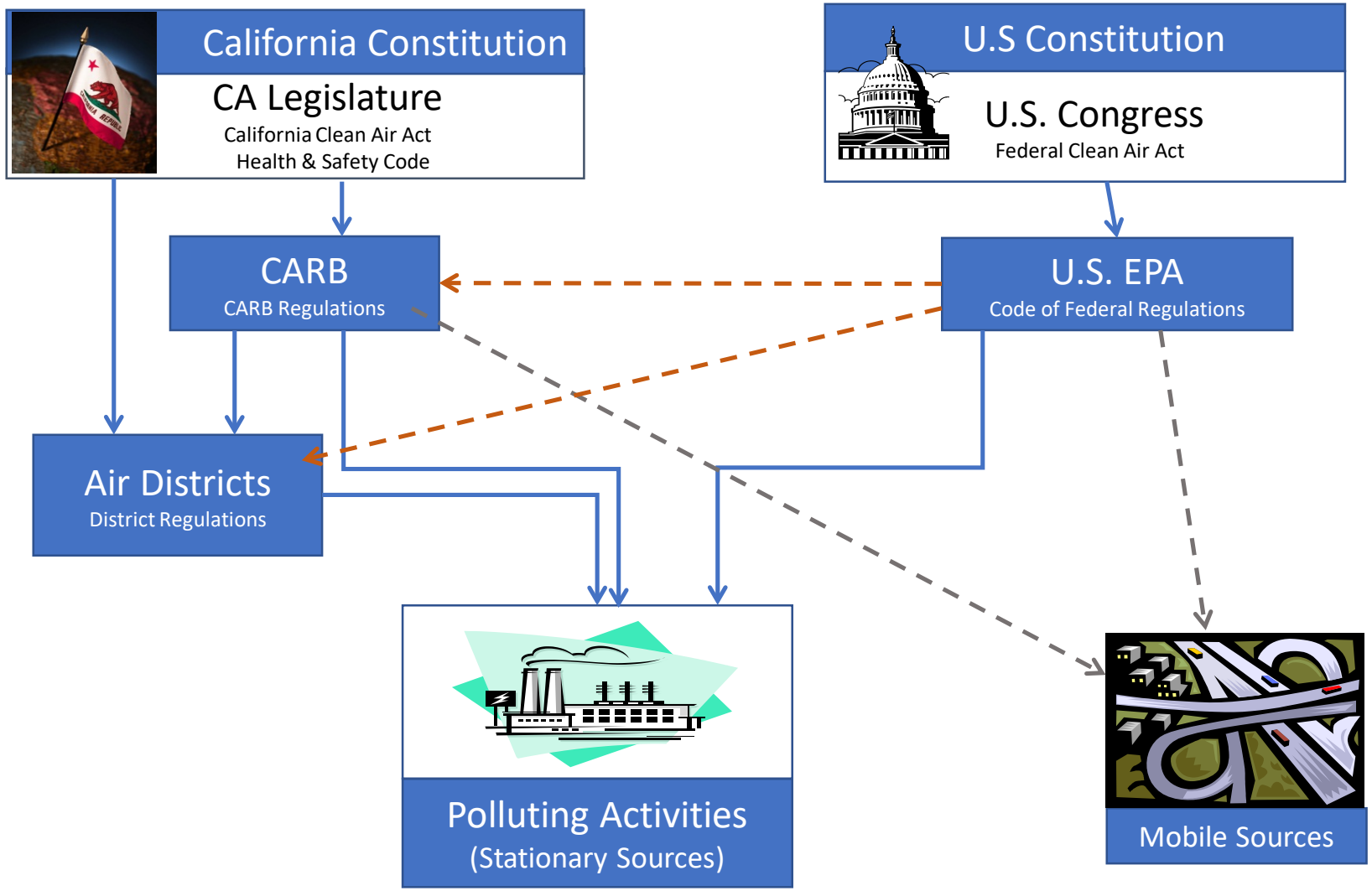
Board of Directors Meeting
March 4, 2020

Brian C. Bunger
District Counsel

Air Quality Problems

- Criteria Pollutants
  - Federal and California: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, lead
  - California only: sulfates, hydrogen sulfide, vinyl chloride
- Air Toxics
  - Federal: hazardous air pollutants (HAPs)
  - California: toxic air contaminants (TACs)
- Greenhouse Gases (GHGs)

Regulatory Framework



Air District Authority

- Primary responsibility: control of air pollution from sources other than motor vehicles
- Powers to:
  - Adopt and enforce regulations
  - Require stationary source permits
  - Adopt fees
  - Adopt air toxic control measures
  - Regulate nuisances
  - Prohibit dark smoke
  - Adopt state nonattainment plans
  - Adopt regulations necessary to execute duties

Roles of Board and Staff

- Board Responsibilities:
  - Set policy
  - Adopt budget and fees and approve expenditures
  - Adopt plans
  - Adopt regulations
  - Appoint the Air Pollution Control Officer and Counsel

Roles of Board and Staff (cont.)

- Staff Responsibilities:
  - Appoint district staff
  - Issue permits
  - Enforce statutes, regulations and permit requirements
  - Develop plans for Board consideration
  - Develop regulations for Board consideration

Roles of Board-Appointed Bodies

- Hearing Board
  - Appeals of permitting decisions
    - By applicant
    - By third parties
  - Variance requests from regulated entities
  - Permit revocation requests from Air District staff
  - Abatement Order requests from Air District staff
- Advisory Council
  - Studies issues at request of Board and staff and provides advice

Criteria Pollutant Control - Planning

- Federal – federal attainment plans, e.g., 2001 Ozone Strategy
  - Must demonstrate attainment by a specified date
  - Plan Components
    - Inventory
      - Man-made ("anthropogenic"): stationary sources, area sources, motor vehicles
      - Natural (background/non-anthropogenic)
    - Modeling
    - Control strategy
    - "Commitments" for all source types
  - Penalties for failing to have plan
  - Joint adoption with Metropolitan Transportation Commission (MTC)

Criteria Pollutant Control – Planning (cont.)

- California – state attainment plans, e.g., 2017 Clean Air Plan
  - Must demonstrate 5% reduction in nonattainment pollutant emissions per year averaged over three years OR that District will implement "every feasible measure"
  - Plan components: stationary sources, transportation control measures, area/indirect
  - To be updated triennially

Criteria Pollutant Control – Planning (cont.)

- Differences from federal
  - Plan elements limited to those within District authority
  - Continuous improvement rather than target dates
  - Ranking of measures
  - No citizen suit provisions

Criteria Pollutant Control - Regulations

- Federal New Source Performance Standards
  - Detailed industry-specific regulations establishing emissions limits for specific items of equipment
  - Federal regulations directly applicable to sources
- District-Implemented Regulations Required by Federal and California Clean Air Acts
  - New Source Review Permit Program Requirements
  - Specific Regulatory Actions Committed to by District in Attainment Plans
- Additional District Regulatory Provisions

District Regulations

- Substantive requirements
  - Best Available Retrofit Control Technology (BARCT)
  - Feasible measure
  - Federal requirements if submitted into California State Implementation Plan
- Procedural requirements
  - Noticed hearing
  - Analysis of overlapping requirements
  - Socioeconomic impact analysis
  - Incremental cost analysis
  - Board must find that rule meets requirements of necessity, authority, clarity, consistency, nonduplication, and reference

Criteria Pollutant Control – Permits
Pre-Construction Permits

- Pre-construction Permits for Major Sources
  - New Source Review – for non-attainment pollutants
    - Lowest Achievable Emissions Rate (LAER)
    - Emission Offsets – "No Net Increase" Requirement
  - "Prevention of Significant Deterioration" – for attainment pollutants
    - Best Available Control Technology (BACT)
    - Analysis of potential to cause violation of air quality standards
- Pre-construction Permits for Non-major Sources
  - Minor New Source Review
  - Incorporates all other applicable regulatory requirements

Criteria Pollutant Control – Permits (cont.) Operating Permits & Equipment Registrations

- Operating Permit Requirements
  - District "Permit to Operate"
    - Incorporates conditions from Authority to Construct
    - Applies to all sources, including existing sources
  - "Title V" Operating Permit
    - Consolidates major facility permit requirements in a single document for transparency and ease of review
    - Can also require additional conditions to improve enforceability, e.g. enhanced monitoring
- Equipment Registration Requirements for Certain Sources That Do Not Require Permits
  - Small boilers
  - Restaurant char-broilers

Air Toxics Control

- Regulations
  - Federal – source category toxics standards
    - Example – Refinery Maximum Achievable Control Technology (MACT)
    - Example – Aluminum and other non-ferrous foundries area source standard (ZZZZZZ)
  - California –
    - ARB air toxic control measures
    - California Toxics Hot Spots Program
    - Assembly Bill (AB) 617 – Community monitoring and emission reduction plans
  - Air District –
    - Air District source category toxics rules
    - Regulation 11, Rule 18 – reduction of air toxics risk from existing facilities

Air Toxics Control (cont.)

- Permits
  - Federal – Title V incorporates federal toxics requirements
  - Air District –
    - New Source Review of Toxic Air Contaminants
    - Incorporate source category toxics requirements

Greenhouse Gases

- Federal – Permit requirements for large emitters:
  - Requirements apply to facilities with emissions over the “major facility” threshold for some other regulated pollutant and a GHG increase of more than 75,000 tpy
  - “Prevention of Significant Deterioration” pre-construction permits
  - “Title V” Operating Permits

Greenhouse Gases (cont.)

- California – Various regulatory initiatives, including:
  - ARB's AB 32 implementation efforts (cap-and-trade, etc.)
  - Utilities' renewable energy portfolio standards ("RPS")
  - Motor vehicle tailpipe standards ("Pavley Bill")
  - AB 398 – Cap-and-Trade program authorized through 2030
  - 2030 Scoping Plan approved December 2017

Greenhouse Gases (cont.)

- Air District –
  - AB 398
    - Removed Air District authority to regulate CO2 at cap-and-trade facilities
    - Reaffirmed authority to otherwise regulate GHGs
  - Permit fees based on GHG emissions
  - Permit requirements for GHG emissions

Other Topics

- California Environmental Quality Act (CEQA)
- Senate Bill (SB) 375 – The Sustainable Communities Strategy and Climate Protection Act
- District Consultative Policy Role
  - Regional Transportation Plan (RTP)
  - Joint Policy Committee (JPC)/Bay Area Regional Collaborative (BARC)
- Prohibition on Public Nuisances
- Regulating Visible Emissions

AGENDA: 15

Air Quality and Air District Overview

Board of Directors Meeting
March 4, 2020

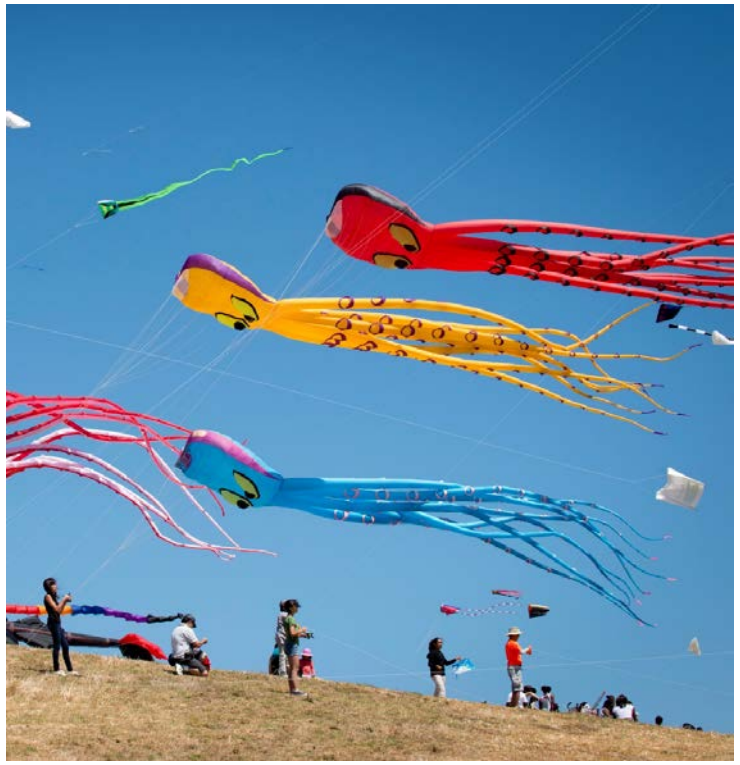
Ranyee Chiang, Director of Meteorology and Measurement
Henry Hilken, Director of Planning and Climate Protection

Presentation Outline

- Air District Mission
- Basics of Air Quality and Climate
- Measurement and Modeling
- Focus on Communities
- Plans
- Toolkit to Reduce Emissions

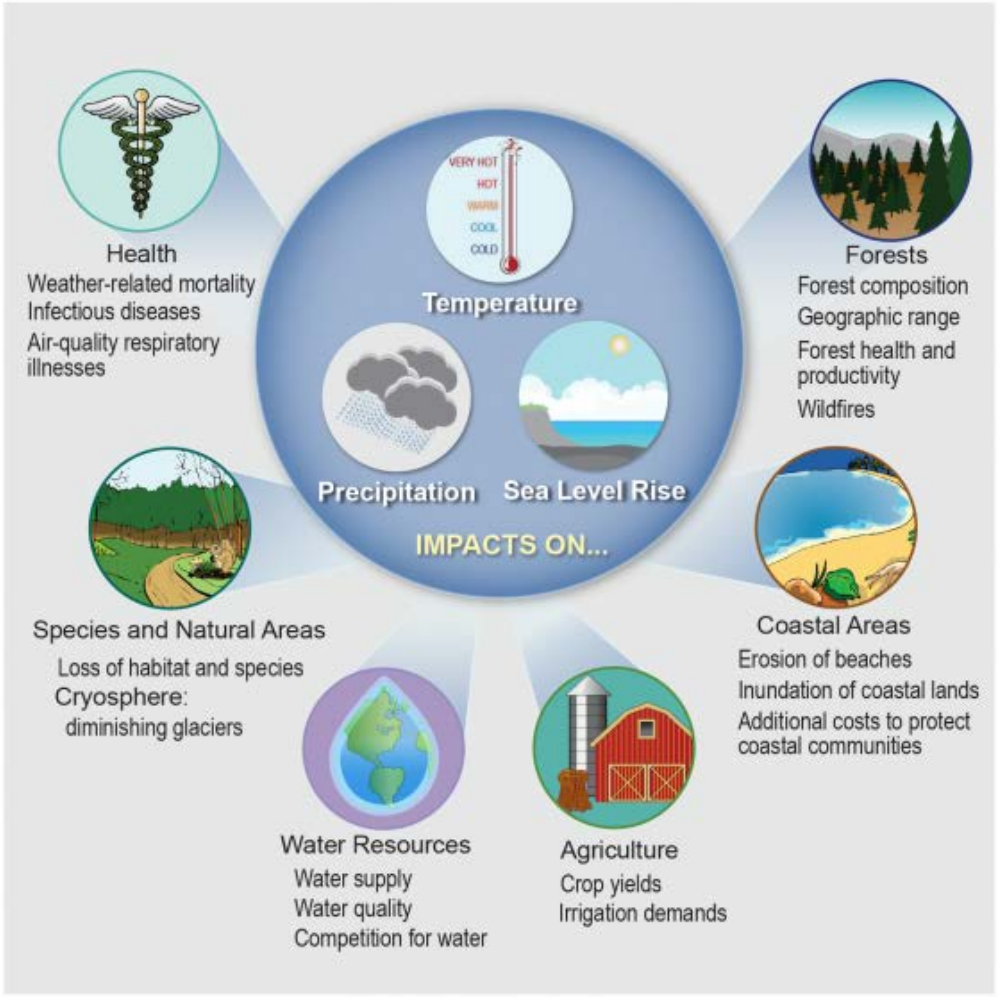
Mission

Create a healthy breathing environment for every Bay Area resident while protecting and improving public health, air quality, and the global climate



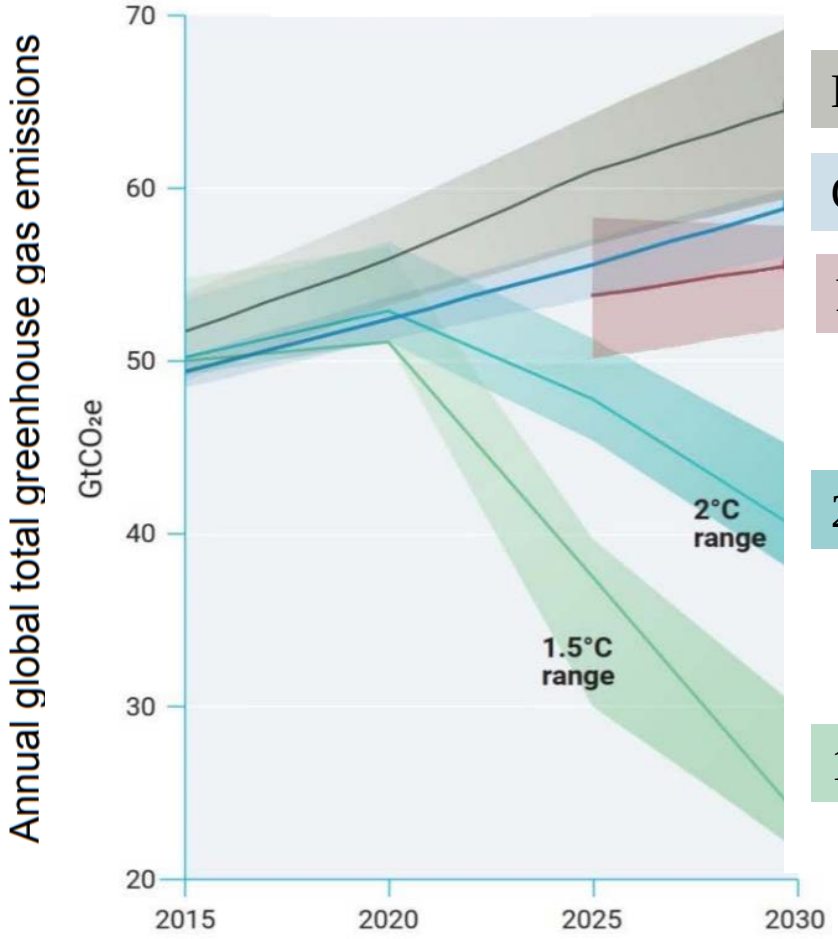
9 counties / 101 cities
7 million people
5 million vehicles

Basics: Impacts of Climate Change



Source: U.S. Global Change Research Program

Basics: Emissions Reductions: Global Commitments and What's Needed



No policy baseline

Current policy scenario

Paris Climate Agreement pledges

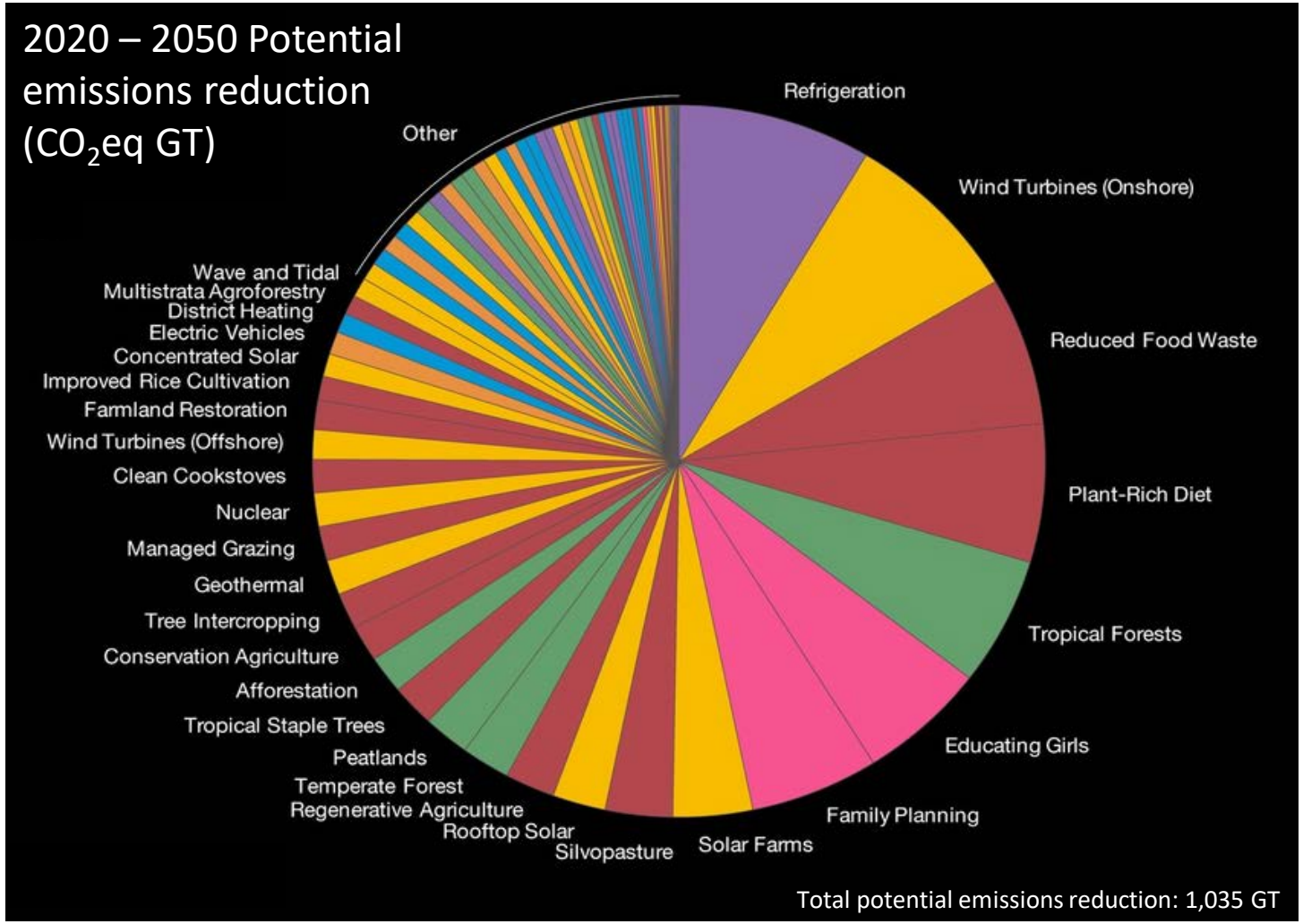
2°C pathways

1.5°C pathways

Adapted from: UN Environment, Emissions Gap Report 2018

Basics: Climate Change Solutions

Cost:
$29.6 trillion



Savings:
$74.4 trillion

Source: Project Drawdown (2017)

Basics: Air Pollutants and Health Impacts

Premature death
Cardiovascular harm
Asthma attack
Lung cancer
Wheezing and coughing
Shortness of breath
Susceptibility to infections
Lung tissue redness and swelling
Damage to liver, kidneys, nervous system
May cause developmental harm
May cause reproductive harm

Basics: Air Pollutants and Their Impacts

Typical Bay Area Sources	Gaseous Air Pollutant	Air Pollutant Category		Impact		
		U.S. EPA Criteria Pollutant	Air Toxic	Odor	Climate	Health
	Ground-level Ozone	✓				••
	Carbon Monoxide	✓				••
	Nitrogen Dioxide	✓				••
	Sulfur Dioxide	✓		✓		••
	Carbon Dioxide				•••	
	Methane			✓	•	•
	Fluorinated Gases				•	
	Hydrogen Sulfide		✓	✓		••

- Transportation, Vehicle Exhaust & Road Dust
- Railways & Railyards
- Airport & Small Aircraft Operations
- Marine Shipping Terminals
- Chemicals Manufacturing & Processing
- Waste Management, Transfer, & Landfills
- Petrochemical Refining, Storage, & Transport
- Power Generation
- Metal Melting, Recycling, & Scrapyards
- Water Management
- Residential Wood Combustion

Basics: Air Pollutants and Their Impacts (cont.)

Typical Bay Area Sources	Particle or Volatile Air Pollutant	Air Pollutant Category		Impact		
		U.S. EPA Criteria Pollutant	Air Toxic	Odor	Climate	Health
	Particulate Matter	✓			•	•••
	Diesel PM		✓		••	•••
	Ultrafine PM					•••
	Metals		✓	✓		•••
	Lead	✓	✓			•••
	Volatile Organic Compounds		✓	✓	•	•••
	Polycyclic Aromatic Hydrocarbons		✓	✓		•••

- Transportation, Vehicle Exhaust & Road Dust
- Railways & Railyards
- Airport & Small Aircraft Operations
- Marine Shipping Terminals
- Chemicals Manufacturing & Processing
- Waste Management, Transfer, & Landfills
- Petrochemical Refining, Storage, & Transport
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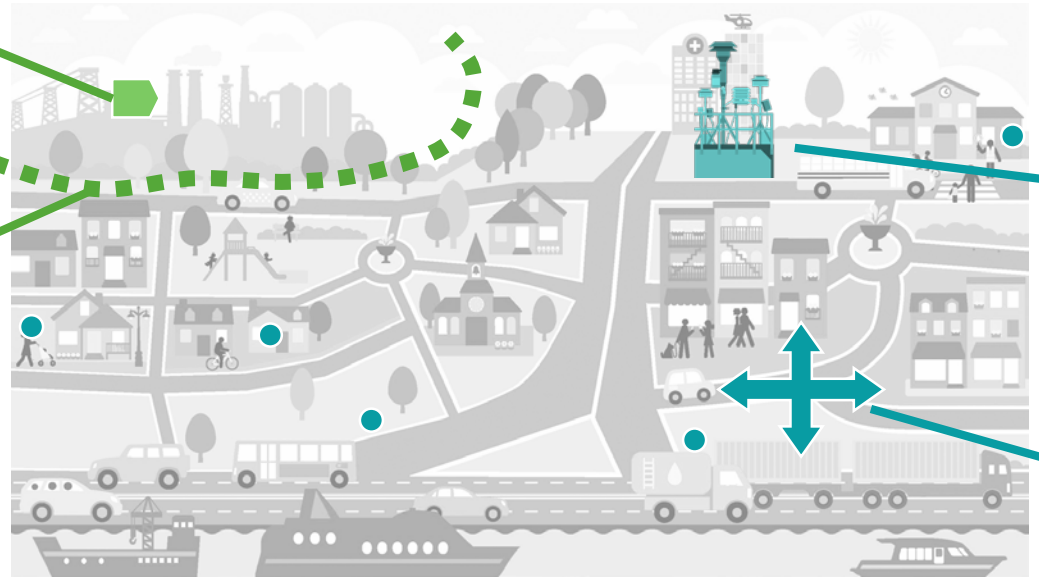
Measurement and Modeling: Multiple Monitoring Strategies Throughout the Bay Area

Facilities

Source Testing
Emissions from facilities (e.g. stack)

Fence line Monitoring
Facility emissions that may impact communities



Communities

Regional Network
High accuracy equipment that spans the Bay Area

Portable/Mobile Monitoring
Medium accuracy equipment on a moving vehicle or temporarily sited

Sensor Networks
Low cost sensors for higher density data, community-led science

Measurement and Modeling: Air Quality Forecasting

Data and Tools

Air Monitoring Data

Remote Sensing Data

Meteorological Stations

Satellite Imagery

Computer Models

Topography and Climate

Forecasts

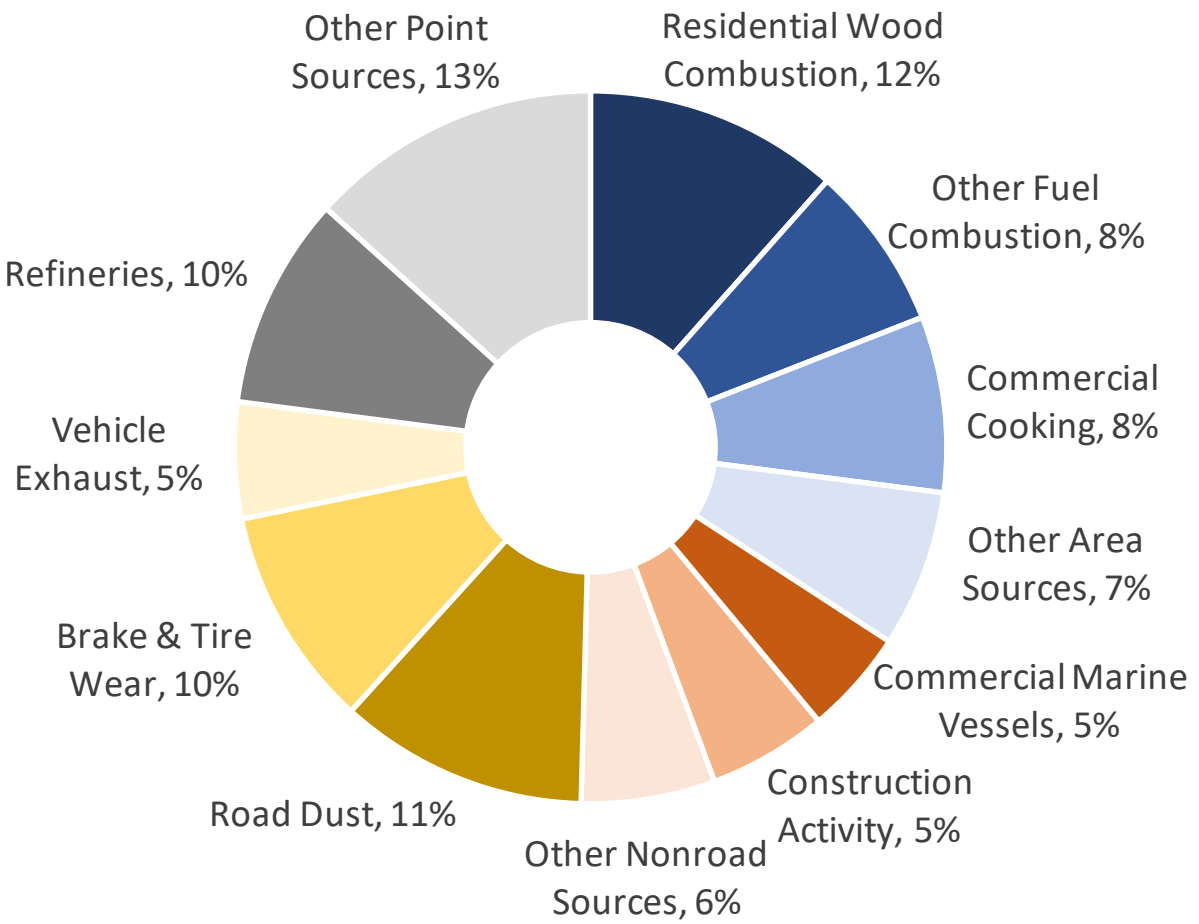
Spare the Air Alerts

Air Quality Advisories

Measurement and Modeling: Emissions Inventory

Estimates of Sources of Air Pollution

Example: 2016 annual average $PM_{2.5}$ emissions

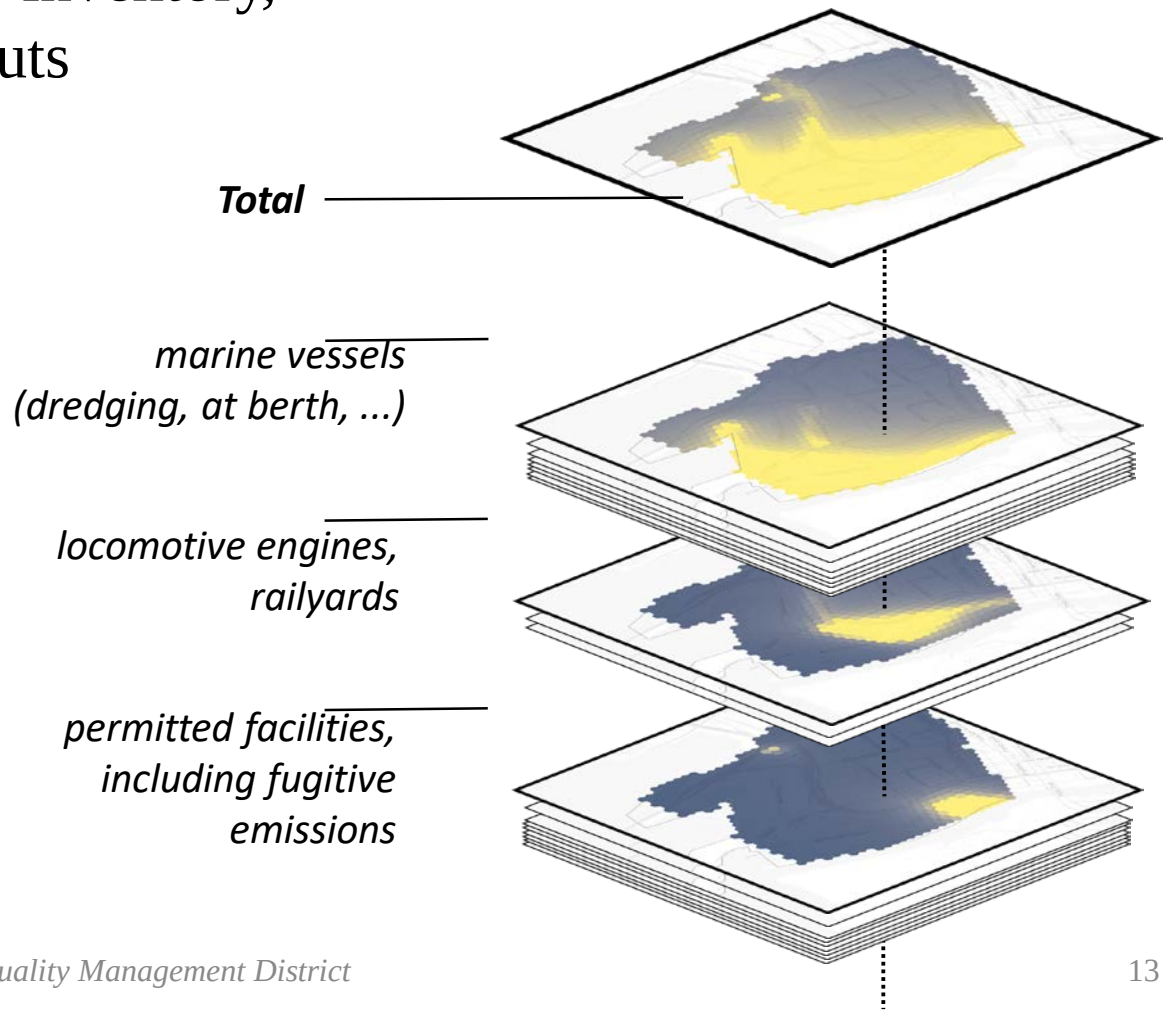


Measurement and Modeling: Understanding Pollutant Behavior, Exposure, and Impacts

Computational simulation using emissions inventory, air quality measurements, and wind as inputs

Example modeling question:

How do different sources of pollution contribute to air quality in a community (source apportionment)?



Focus on Communities: Collaborative Relationships to Support Air District Mission

Assembly Bill (AB) 617

Community Grants

Youth Engagement

Public Participation Plan

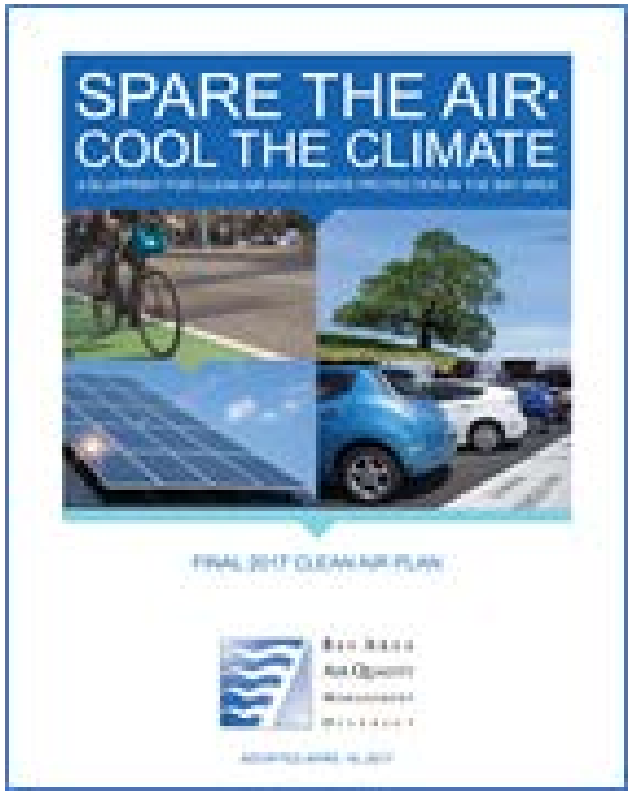
Plans: 2017 Clean Air Plan

Regional Air Quality plan prepared pursuant to California Clean Air Act

Multi-pollutant plan to update 2010 Clean Air Plan

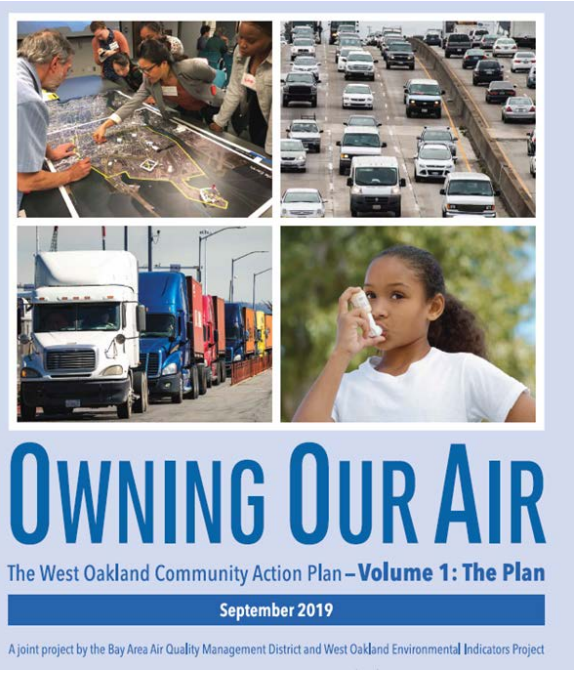
A comprehensive strategy of 85 measures to:

- Reduce ozone and fine particles throughout the region
- Reduce air toxics in impacted communities
- Reduce GHGs toward long-range targets
  - 40% below 1990 levels by 2030
  - 80% below 1990 levels by 2050



Plans: AB 617 – Plans Go Local

- AB 617 requires Air District to partner with communities to better understand local air pollution & health and to prepare plans to improve local conditions
- West Oakland Community Action Plan
  - Partnership with West Oakland Environmental Indicators Project and Community Steering Committee
  - Hyper-local emissions estimates and exposure modeling
  - 89 strategies, plus Enforcement Plan
  - Actions needed by multiple agencies
- Richmond/San Pablo Community Monitoring Plan under development
- Partnering with other impacted communities



Toolkit: Rule Development

Adopt and Implement Rules Applicable at New and Existing Sources

- Regulation 1: General Provisions & Definitions (1)
- Regulation 2: Permitting Rules (10)
- Regulation 5: Open Burning (1)
- Regulation 6: Particulate Matter (6)
- Regulation 8: Organic Compound (49)
- Regulation 9: Inorganic Gaseous Pollutants (14)
- Regulation 10: Standards of Performance for New Stationary Sources (1)
- Regulation 11: Hazardous Pollutants (18)
- Regulation 12: Miscellaneous Standards of Performance (16)
- Regulation 14: Mobile Source Emissions Reduction Measures (1)

Toolkit: Permits

Engineering Staff Issues Air Quality Permits

- Permitting for over 10,000 facilities with over 24,000 sources
- Evaluate 1,200 applications per year for new and modified source
- Conduct 300 health risk assessments per year for new and existing facilities
- Issue Authorities to Construct, Permits to Operate, Registrations & Exemptions
- Maintain emissions inventory for permitted facilities: greenhouse gases (GHG), criteria pollutants and toxics
- Maintain Federal Title V Permits for 85 facilities
- Protects public health by setting stringent health risk action levels for new and modified sources and existing facilities

Toolkit: Compliance and Enforcement

Compliance and Enforcement Staff Assures Air District Rules and Permits are Implemented Effectively

- Issue compliance advisories
- Compliance assistance – small & green business assistance
- Industry Compliance School
- Inspections
- Investigate complaints
- Variances
- Issue notices of violations
- Partner with communities to identify sources of concern
- Partner with interagency environmental task force programs

Toolkit: Collaborating Statewide and Regionally

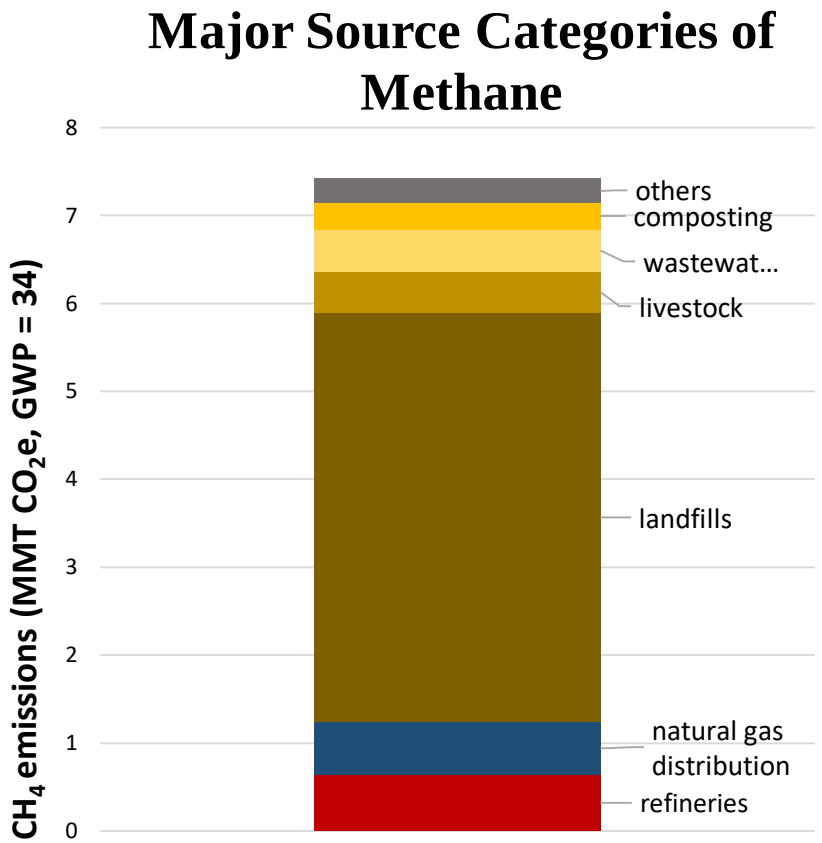
- Work with California Air Resources Board (CARB), Office of Environmental Health Hazard Assessment (OEHHA), other state agencies, and other air districts
  - Participate in CARB rulemaking
  - Assist enforcement of CARB rules
  - Work with CARB & OEHHA staff on policy, funding, advocacy, science
  - Coordinate with other districts via California Air Pollution Control Officers Association (CAPCOA)

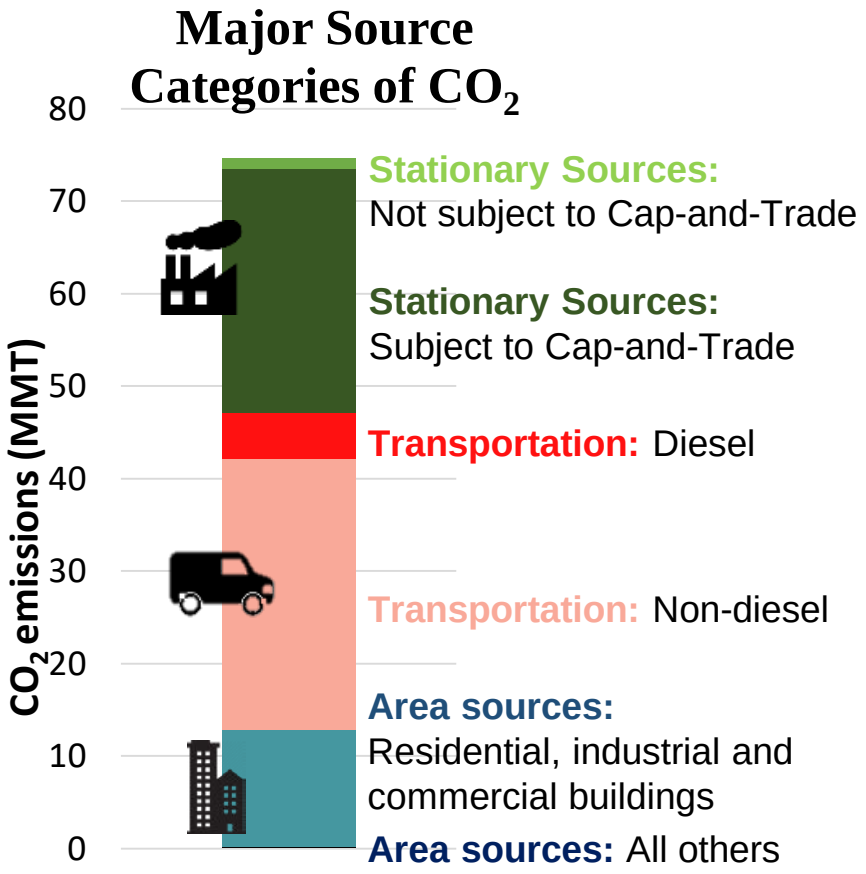
- Work with Bay Area Regional Collaborative (BARC), Metropolitan Transportation Commission (MTC)/Association of Bay Area Governments (ABAG), Bay Conservation & Development Commission (BCDC) to coordinate regional programs
  - Support and implement Plan Bay Area
  - Coordinate policy and funding re: ports, other mobile source programs
  - Implement Commuter Benefit Program
  - Collaborate on climate, e.g., solar ordinance, vehicle miles traveled (VMT) reduction

Toolkit: Collaborating with Cities and Counties

- Implement California Environmental Quality Act (CEQA)
  - CEQA Guidelines
  - Review & comment on CEQA docs
- Support local plans, policies, and programs
  - Plan & policy guidance, best practices, technical support
  - Climate action plans, GHG data & policies
- Grants & incentives support local clean air projects
- Collaborate on AB 617 planning and other community capacity-building efforts
- Wildfire response, industrial incidents

Bay Area GHG Emissions - Examples





Toolkit: Climate Protection Program

ASSISTANCE TO LOCAL GOVERNMENTS
- Support development of climate action plans (CAPs)
- CEQA guidance for CAPs
- Model policies & best practices
- Building Decarbonization Program
- Grants for climate action plan implementation
- Support/collaboration with community choice energy programs

AIR QUALITY PLANNING
- CEQA Thresholds & Guidelines
- Multi-pollutant Clean Air Plans
- Planning Healthy Places
- Plan Bay Area
- BARC climate program

STATIONARY SOURCES
- GHG cost recovery fee ($0.12/ton)
- GHG reduction in rule-making
  - Natural gas use in buildings
  - District-wide methane strategy
- Commuter Benefit Program
- Implement ARB regulations
  - Landfill gas
  - Stationary refrigerants

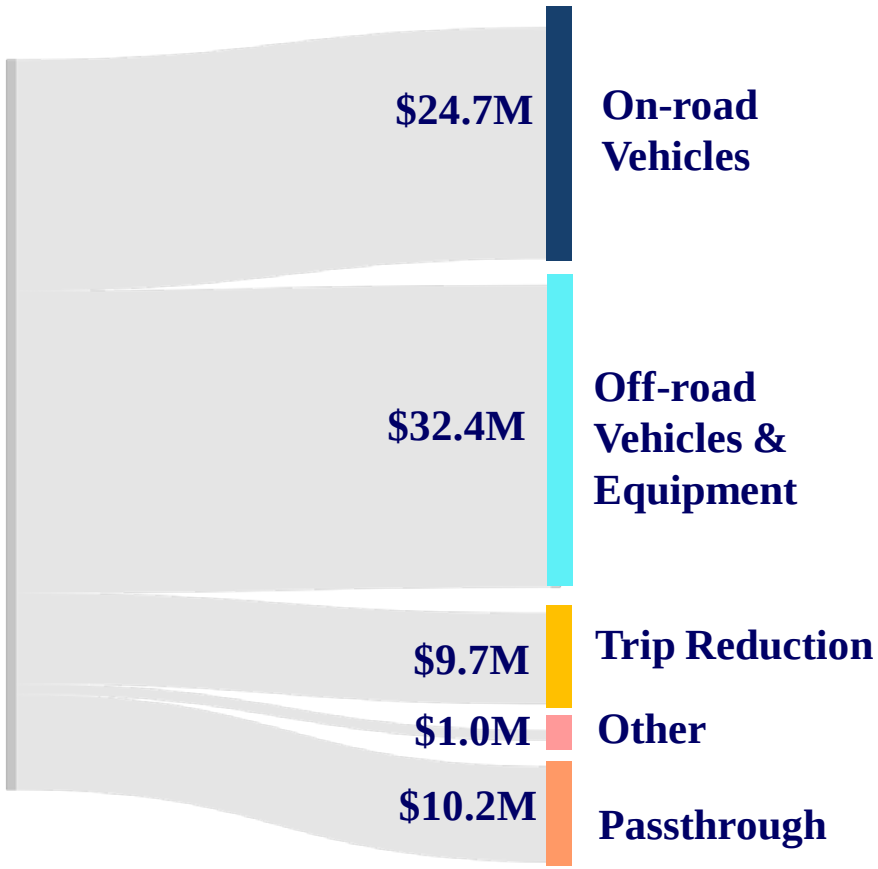
GRANTS/INCENTIVES
- $4.5 million Climate Protection Grant Program
  - Decarbonizing existing buildings
  - Fostering innovative strategies across all sectors
- $30+ million in grants (in 2019) to electric vehicles (EVs) and trip reduction
- $4 million in loans and loan guarantees for climate technologies for stationary sources in public agencies and small businesses

LEADERSHIP
- Regional summits (2005, 2006, 2009, 2016, 2018, 2020)
- Diesel Free By '33 national initiative
- Support CA Climate Change Scoping Plan Updates
- Develop and export replicable GHG reduction innovations

OUTREACH/EDUCATION
- Spare the Air Everyday Campaign
- Spare the Air Youth program, including Youth for the Environment and Sustainability (YES) Conference
- School-based programs (Eco2School, Safe Routes2School)
- Event sponsorships
- Public, school presentations

Toolkit: Incentives for Clean Air & Climate Solutions

>$78 million (M) Awarded in 2019



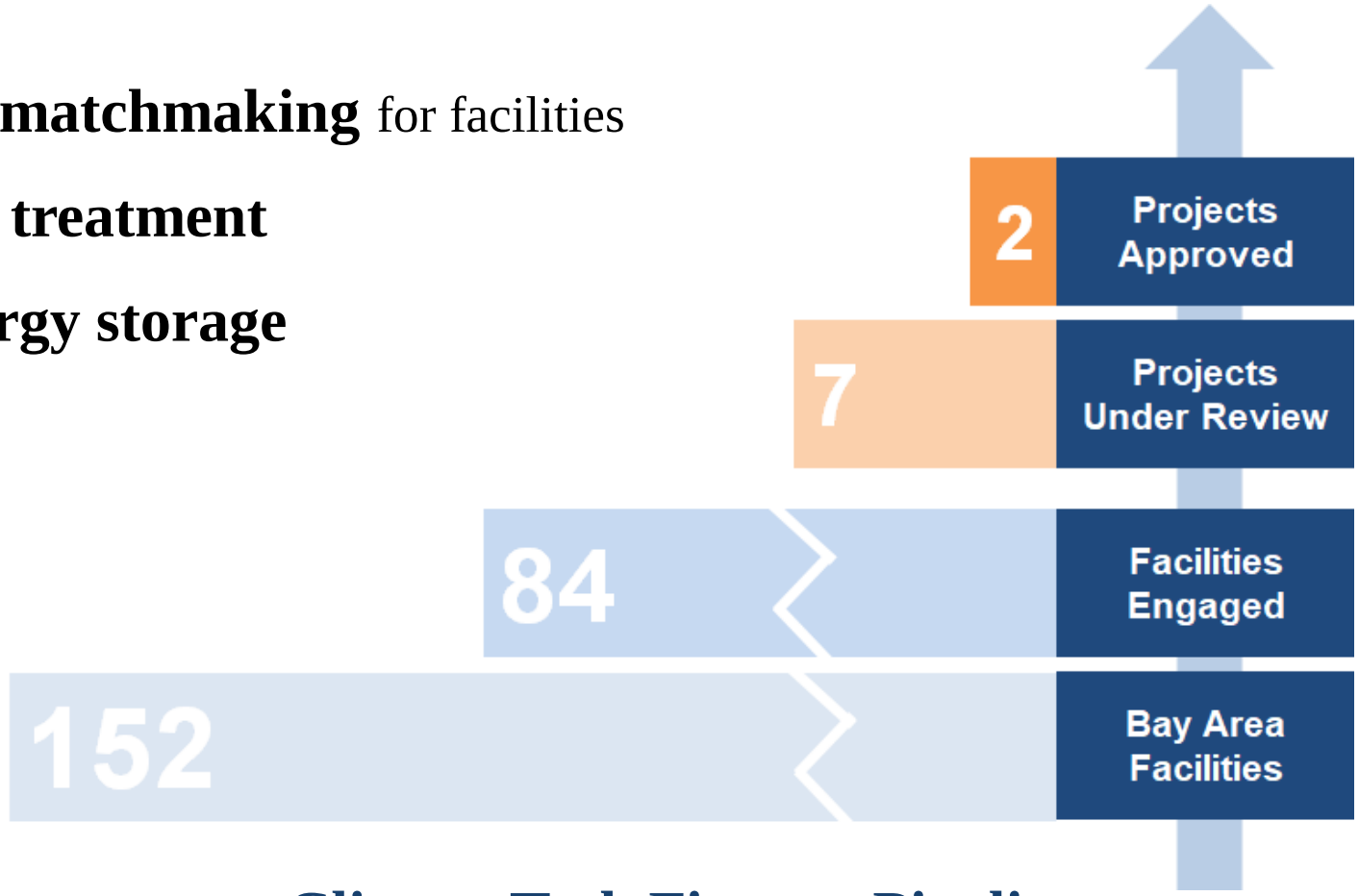
- Passenger cars
- Charging stations
- Trucks
- Buses
- Cargo handling equipment
- Agriculture equipment
- Marine vessels
- Locomotives
- Lawn & garden equipment
- First- & last-mile services
- Bicycle lanes/paths & parking
- Fireplace & woodstove replacements
- Climate Action
- Community Capacity Building

Toolkit: Incentives: Innovative Financing for Innovative Technologies

Loans, loan guarantees, and matchmaking for facilities

Initial industry focus: **wastewater treatment**

Technology focus: **advanced energy storage**



Climate Tech Finance Pipeline

Toolkit: Communications: Promoting Behavior Change

Spare the Air

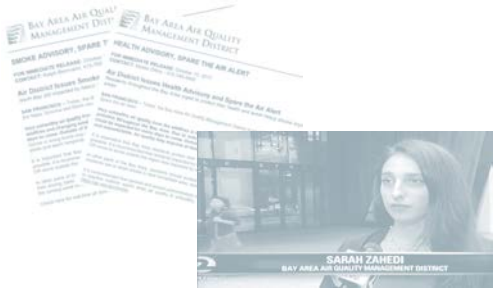
37% increased use of public transit

31% reduced or eliminated burning

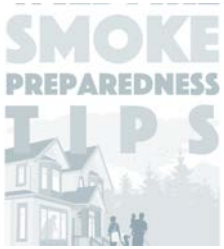
24,661 social media followers

140 events in 2019

Media Relations



Wildfires and Incidents



Contact the Air District

General Business: (415) 749-5000

Complaints: (800) 334-ODOR

Winter Spare the Air Alerts: (877) 4-NO-BURN

Air Quality Info: (800) HELP AIR

Report Smoking Vehicles: (800) EXHAUST (394-2878)

www.baaqmd.gov
www.sparetheair.org

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