South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765
(909) 396-2000, www.aqmd.gov

NOTICE OF SPECIAL MEETING OF THE GOVERNING BOARD
Governing Board Retreat

Day One: May 11, 2023
9:00 a.m. to 11:30 a.m. (Grand Salon Ballroom – Main Hotel)
1:00 p.m. to 5:30 p.m. (Desert Vista Room – Across from Main Hotel)
Day Two: May 12, 2023
9:00 a.m. to 11:30 a.m. (Desert Vista Room)
Hyatt Regency Indian Wells Resort and Spa
44-600 Indian Wells Lane, Indian Wells, California 92210

Meeting will be a hybrid format
Members of the public may participate either in person or via Zoom or telephone.

This Special Meeting of the South Coast AQMD's Governing Board will be held at 9:00 a.m. and 1:00 p.m. on Thursday, May 11, 2023 and at 9:00 a.m. on Friday, May 12, 2023 through a hybrid format of in-person attendance in the Hyatt Regency Indian Wells Resort and Spa at 44-600 Indian Wells Lane, Indian Wells, California 92210 and/or virtual attendance via videoconferencing and by telephone. Please follow the instructions below to join the meeting remotely.

Please refer to South Coast AQMD's website for information regarding details on how to participate:
http://www.aqmd.gov/home/news-events/meeting-agendas-minutes

ELECTRONIC PARTICIPATION INFORMATION
(Instructions provided at bottom of the agenda)
Join Zoom Webinar Meeting - from PC or Laptop
https://scaqmd.zoom.us/j/93128605044
Zoom Webinar ID: 931 2860 5044 (applies to all)
Teleconference Dial In +1 669 900 6833 or +1 253 215 8782
One tap mobile +16699006833,,93128605044# or +12532158782, 93128605044#

Spanish Language Audience Zoom Meeting ID: 963 4776 6450
Teleconference Dial In +1 669 900 6833
One tap mobile +16699006833,,96347766450#

The audience will be allowed to provide public comment in person, through Zoom or telephone.
PUBLIC COMMENT WILL STILL BE TAKEN

AGENDA

Cleaning the air that we breathe...

Items may be taken in any order and/or may be heard on either day.

DAY ONE **Morning Session Begins at 9:00 a.m. (Items 1a – 1d are optional background information)**	
1a. Introduction to Air Quality and Regulatory Background (1 hour) Overview of key elements of the Clean Air Act, attainment dates for ozone and PM2.5 National Ambient Air Quality Standards, and federal, state, and local regulatory responsibilities.	Sarah Rees, Ph.D. Deputy Executive Officer Planning, Rule Development and Implementation
1b. Permitting (30 Minutes) Overview of South Coast AQMD permitting program, New Source Review, and Best Available Control Technology review.	Jason Aspell Deputy Executive Officer Permitting and Engineering
1c. Compliance and Enforcement (30 Minutes) Overview of South Coast AQMD enforcement program, including inspections, complaint response program, incident response, and enforcement action (e.g., public nuisance violations).	Terrence Mann Deputy Executive Officer Compliance and Enforcement
1d. Advancing Air Monitoring (30 minutes) Update on current advancements in air monitoring techniques.	Jason Low, Ph.D. Deputy Executive Officer Monitoring and Analysis
LUNCH (11:30 a.m.)	
Afternoon Session Begins at 1:00 p.m.	
1e. Welcome (15 minutes)	Chair Vanessa Delgado Vice Chair Michael Cacciotti South Coast AQMD Governing Board
1f. Environmental Justice and Title VI Background (1 hour) Presentation of U.S. EPA Region 9's 2023 Environmental Justice and Civil Rights Implementation Plan which includes actions in the South Coast Air Basin and Coachella Valley.	Martha Guzman U.S. EPA Region 9 Regional Administrator
1g. Working with Communities (1 hour) Panel discussion featuring the voices from community and environmental leaders to identify common ground on communicating as we continue to work to achieve air quality goals.	Chair Vanessa Delgado (Moderator) Jacquelyn Badejo Watts Clean Air & Energy Committee CEO Watts Clean Air Lillian Garcia United for Justice Inc. Executive Officer Yassi Kavezade Sierra Club Senior Campaign Representative Mary Valdemar San Bernardino Valley College
Break (15 minutes)	

1h. State's Path to Zero-Emission (45 Minutes) CARB's perspective on path to zero-emission technologies to meet air quality goals and standards.	Steven S. Cliff, Ph.D. California Air Resources Board Executive Officer
1i. Building the Infrastructure for Zero-Emissions - Panel Discussion (1.5 hours) Panel discussion on how agencies and energy suppliers can ensure the zero-emission infrastructure is available by 2030.	Aaron Katzenstein, Ph.D. (Moderator) South Coast AQMD Deputy Executive Officer Michael Backstrom Southern California Edison Vice President, Regulatory Affairs Hillary Hebert HMH Energy Consulting Inc. Principal Tanya Peacock California Hydrogen Business Council Chair, Board of Directors Hannon Ransool Director of the California Energy Commission's Fuels and Transportation Division Alice Busching Reynolds California Public Utilities Commission President CPUC Commissioner
1j. Day 1 Closing Remarks (15 Minutes)	Chair Vanessa Delgado Vice Chair Michael Cacciotti South Coast AQMD Governing Board
DAY TWO (Begins at 9:00 a.m.)	
2a. Federal Grant Opportunities (45 Minutes) Overview of federal grant opportunities and strategic partnerships.	Lisa Tanaka O'Malley Assistant Deputy Executive Officer Legislative, Public Affairs, and Media
2b. Technology Advancement (45 Minutes) Overview of incentive, technology demonstration, and infrastructure projects in 2023 and beyond.	Aaron Katzenstein, Ph.D. Deputy Executive Officer Technology Advancement Office
2c. Update on the South Coast AQMD's Diversity, Equity, and Inclusion (DEI) Programs (1 hour) A look back and forward on DEI programs at the South Coast AQMD.	Anissa (Cessa) Heard-Johnson, Ph.D. Deputy Executive Officer Diversity, Equity, and Inclusion Office and Community Air Programs
No General Public Comment Period at a Special Meeting Members of the public may address this body concerning any agenda item before or during consideration of that item. (Gov't. Code Section 54954.3(a)). If you wish to speak, raise your hand on Zoom or press Star 9 if participating by telephone or if in-person please provide a Request to Address the Board card to the Clerk of the Board if you wish to address the	

Board on an agenda item. Speakers may be limited to three (3) minutes total for all agenda items on each day of the retreat. At a special meeting, no other business may be considered, there is public comment only for items on the agenda, and there is no general public comment period. (Government Code Section 54956(a)). The agenda for this meeting is posted at South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, California and at the Hyatt Regency Indian Wells Resort and Spa at 44-600 Indian Wells Lane, Indian Wells, California at least 24 hours in advance of the meeting.

ADJOURNMENT

Americans with Disabilities Act and Language Accessibility

Disability and language-related accommodations can be requested to allow participation in this Special Governing Board meeting. The agenda will be made available, upon request, in appropriate alternative formats to assist persons with a disability (Gov't Code Section 54954.2(a)). In addition, other documents may be requested in alternative formats and languages. Any disability or language related accommodation must be requested as soon as practicable. Requests will be accommodated unless providing the accommodation would result in a fundamental alteration or undue burden to the South Coast AQMD. Please contact Clerk of the Boards at 909-396-2500 from 7:00 a.m. to 5:30 p.m. Tuesday through Friday or send the request to cob@aqmd.gov.

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION

Instructions for Participating in a Virtual Meeting as an Attendee

As an attendee, you will have the opportunity to virtually raise your hand and provide public comment.

Before joining the call, please silence your other communication devices such as your cell or desk phone. This will prevent any feedback or interruptions during the meeting.

Please note: During the meeting, all participants will be placed on Mute by the host. You will not be able to mute or unmute your lines manually.

After each agenda item, the Chair will announce public comment.

A countdown timer will be displayed on the screen for each public comment.

If interpretation is needed, more time will be allotted.

Once you raise your hand to provide public comment, your name will be added to the speaker list. Your name will be called when it is your turn to comment. The host will then unmute your line.

Directions for Video ZOOM on a DESKTOP/LAPTOP:

- If you would like to make a public comment, please click on the **"Raise Hand"** button on the bottom of the screen.
  This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for Video Zoom on a SMARTPHONE:

- If you would like to make a public comment, please click on the **"Raise Hand"** button on the bottom of your screen.
- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for TELEPHONE line only:

- If you would like to make public comment, please **dial *9 to raise your hand** to signal that you would like to comment and **dial *6 to toggle mute and unmute**.

Introduction to Air Quality and Regulatory Background

Sarah Rees, Ph.D.
Deputy Executive Officer
Planning, Rule Development and Implementation

South Coast AQMD Board Retreat

May 11, 2023

Outline

- What is air pollution?
- Why is air pollution important?
- Important pollutants in the South Coast AQMD
- How is air pollution regulated?
- How do we measure air quality?
- Consequences of failing to meet federal air quality standards
- State of the air quality
- Ongoing efforts and challenges

Key Types of Air Pollution

Partial overlap of emission sources, regulatory framework, and public health impacts across categories

Health Impacts of Criteria Air Pollution & Air Toxics

Respiratory:
- Asthma
- Bronchitis
- Lung function
- Premature death

Cardiovascular:
- Heart disease
- Stroke
- Heart Attacks
- Premature death

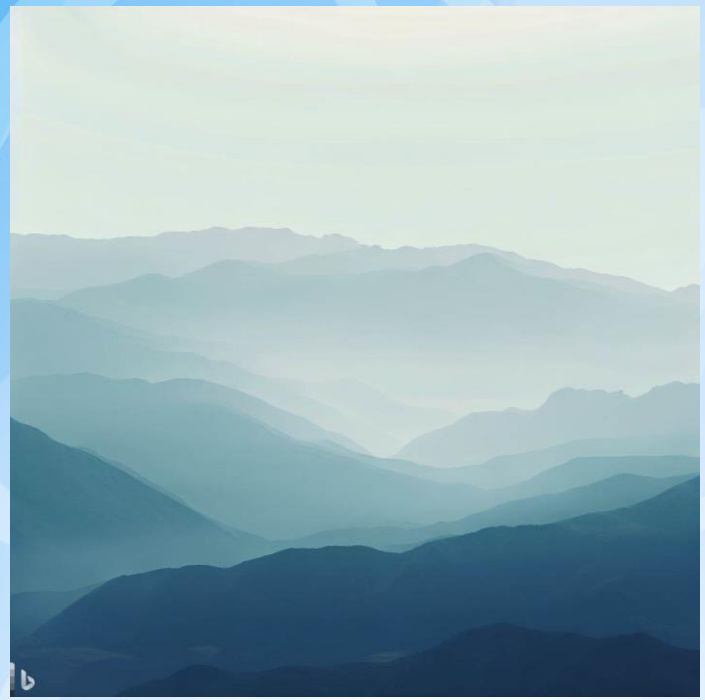
Cancers:
- Lung cancer
- Breast Cancer
- Leukemia
- Lymphoma

Reproductive:
- Low birth weight
- Pre-term birth

* Lists above are not exhaustive

Environmental Impacts of Air Pollution

Visibility Reduction



Ecosystem Damage

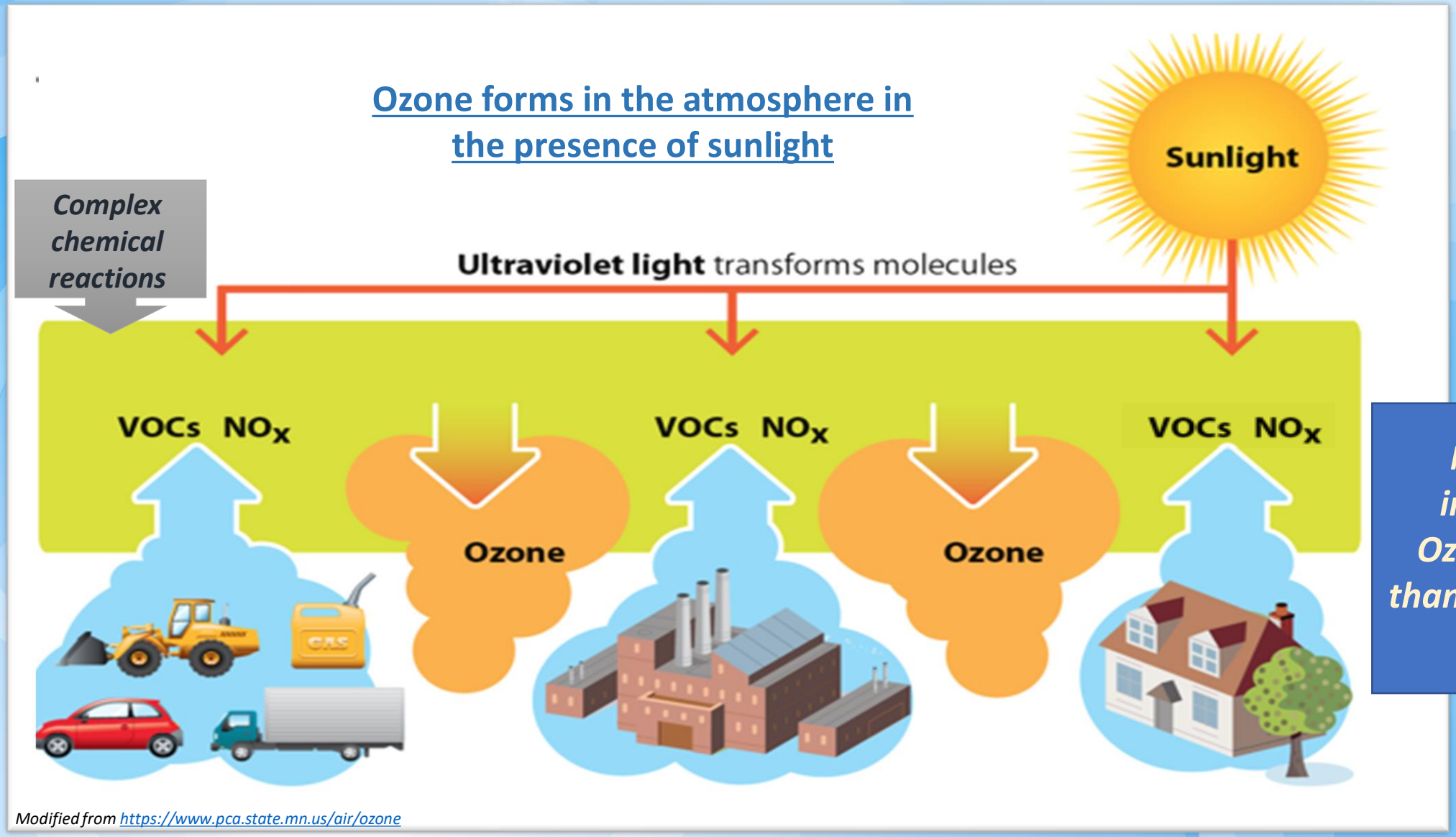
Reduced Crop Yields

Criteria Air Pollutants Overview

- U.S. EPA sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants to protect public health
  - Ground-Level Ozone
  - Particulate Matter (PM10 & PM2.5)
  - Carbon Monoxide
  - Nitrogen Dioxide
  - Sulfur Dioxide
  - Lead

Emissions of other pollutants contribute to formation of Ozone and PM in the atmosphere

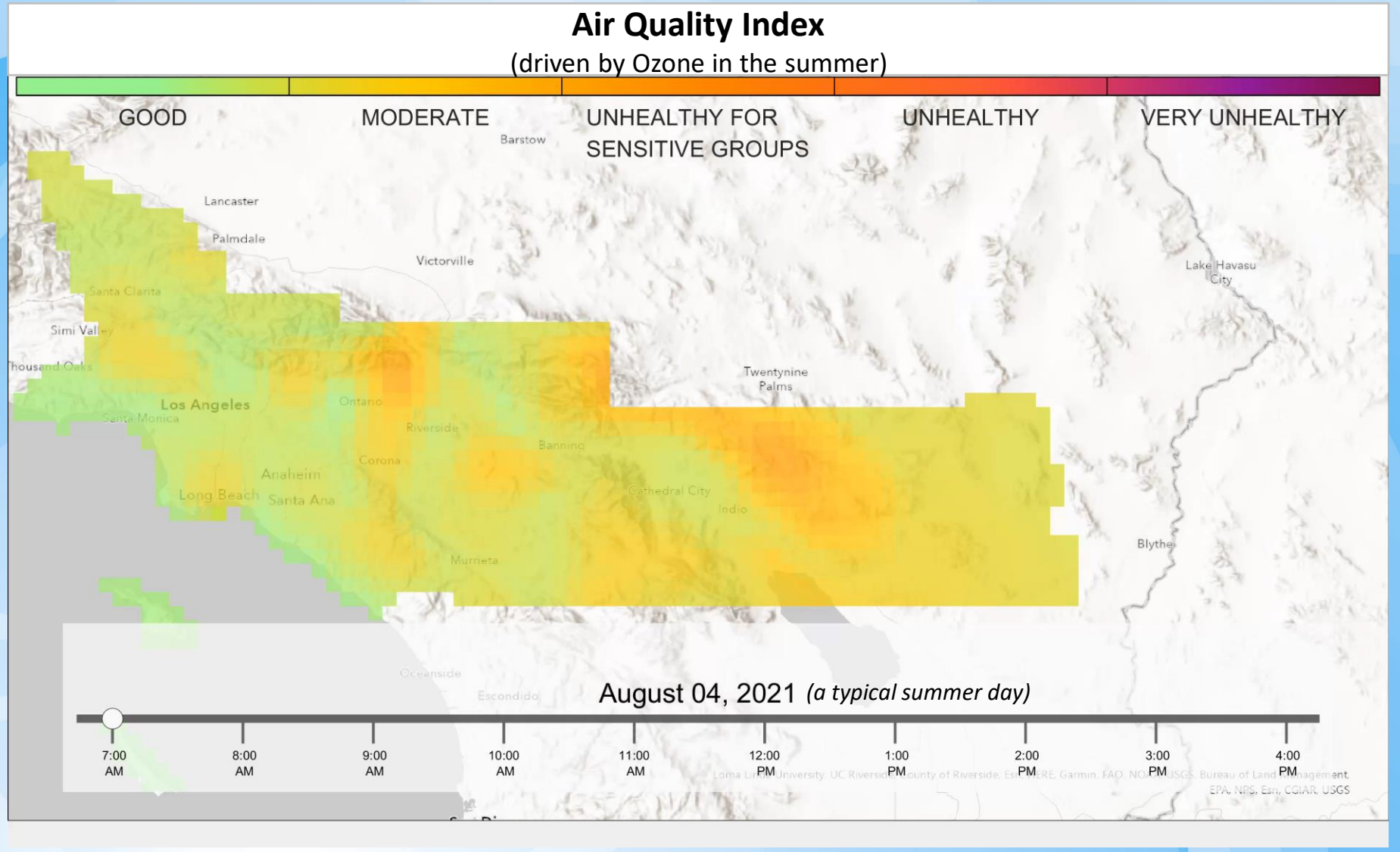
Ground Level Ozone Basics



NOx is more important for Ozone reduction than VOCs* in South Coast

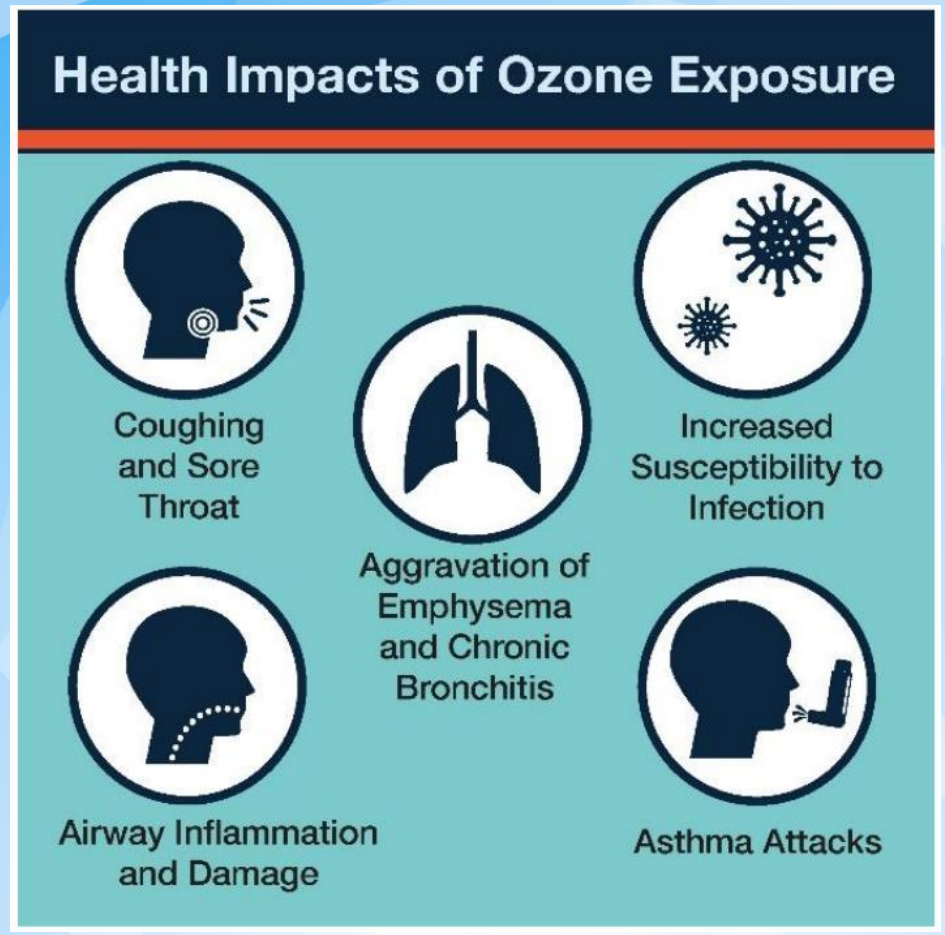
**VOCs = Volatile Organic Compounds*

Emissions, Transport and Ozone Formation



Ozone forms as **NOx/VOCs** are transported inland and react in the presence of sunlight.

Health Effects of Ozone

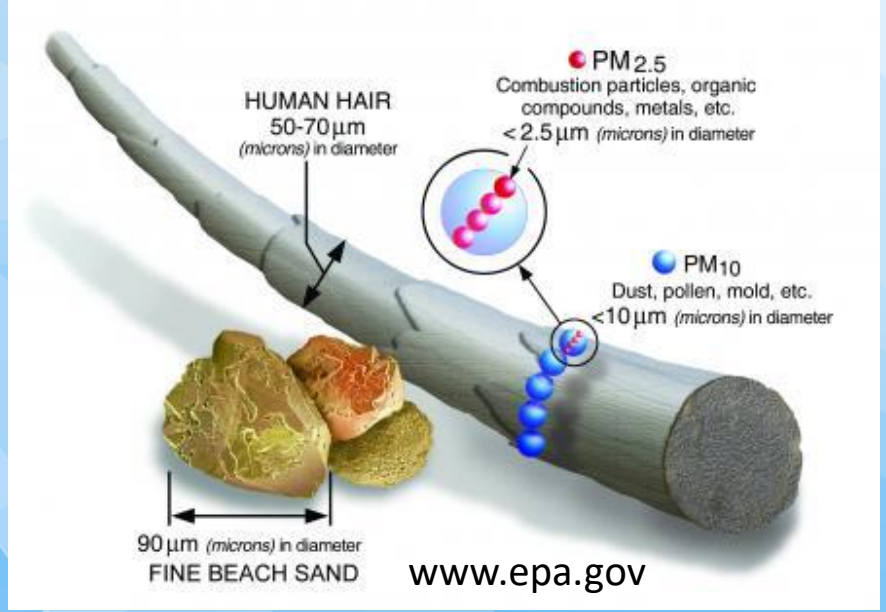


High Ozone causes and is associated with:

- Aggravated lung diseases
  - Chronic obstructive pulmonary disease, asthma, coughing, etc.
- Increased hospitalizations and emergency room visits
- Increased school absences

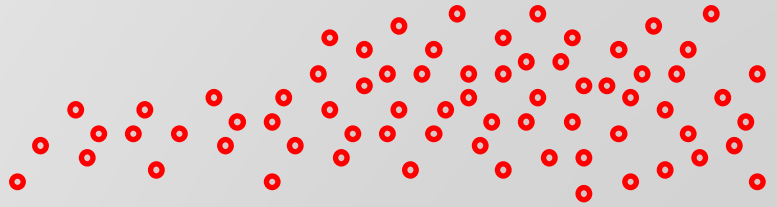
PM2.5 Background

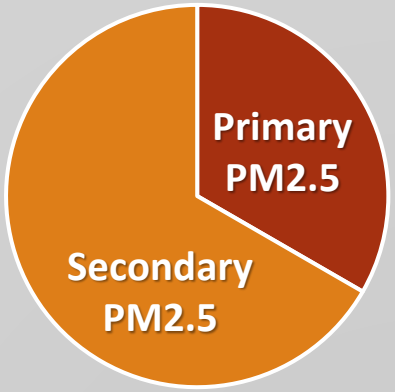
- PM2.5 is particulate matter less than 2.5 µm in diameter
- Linked to adverse cardiovascular and respiratory health effects such as **premature death**, asthma, lung cancer, etc.
- Evidence suggests link to metabolic system, nervous system, cognition, and reproductive and developmental effects
- Exposure to PM2.5 drives majority of public health costs due to air pollution in our region



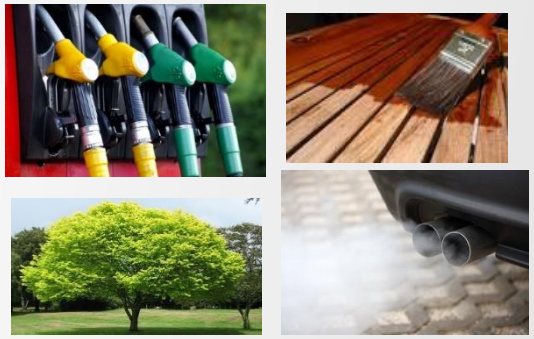
How Does $PM_{2.5}$ Form?

Primary PM2.5
(Directly Emitted)





Secondary PM2.5
(Formed in the Atmosphere)



Gas phase emissions

(VOCs, NOx, SOx, NH_3)

Atmospheric Chemistry

Secondary PM2.5

Sulfur Dioxide & Nitrogen Dioxide

Emission Sources

Heath Effects

- Respiratory diseases, particularly asthma

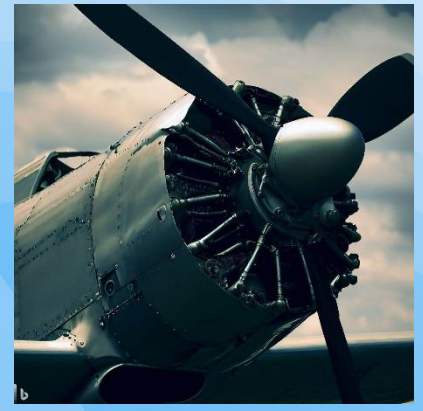
Environmental Effects

- Acid Rain
- Contribute to PM and Ozone pollution

Carbon Monoxide & Lead

CO Emission Sources

Lead Emission Sources



CO Health Effects

- Reduces the ability of blood to carry oxygen
- People with anemia or heart/lung diseases are at the greatest risk

Lead Health Effects

Toxic Air Contaminants

Air toxics are other pollutants that are known or suspected to cause cancer or other short-term or long-term health effects

Examples of Key Air Toxics	Emission sources	Health effects
Diesel Particulate Matter (DPM)	Trucks, buses, train, ships, and other equipment with diesel engines	Can reach deep into lung and cause lung diseases and lung cancer
Hexavalent Chromium (Cr6+)	Metallurgical, refractory and chemical industries	Causes lung and nasal cancers, liver and kidney failure, and birth defects
Ethylene Oxide (EtO)	Facilities using EtO to sterilize medical and dental equipment, and other chemical manufacturing facilities.	Causes breast and blood cancers

Air Quality Regulatory Structure

Local Air District (South Coast AQMD)

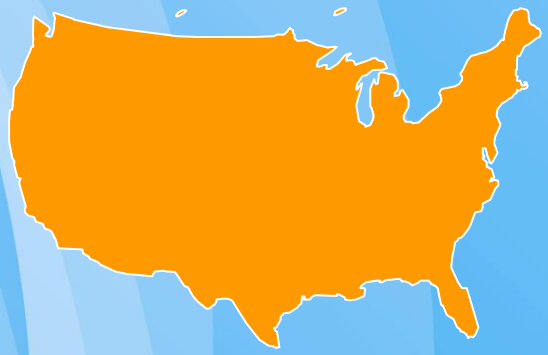
- Monitor Air Quality
  - Issues local health alerts
- Prepare Clean Air Plans
- Regulate over 27,000 Stationary Sources
  - Develop rules
  - Issue permits
  - Enforce regulations
- Administer about $150 million annually in incentives

California Air Resources Board

- Adopt Health-Based State Air Quality Standards
- Regulate Cars, Trucks, Fuels, Consumer Products
- Develop State Clean Air Plans
  - Approve Local Air District Clean Air Plans
- Develop GHG Programs and Regulations

U.S. Environmental Protection Agency

- Adopt Health-Based National Air Quality Standards
- Regulate Interstate Sources (Trucks, Trains, etc.)
- Oversee State Clean Air Plans
- Implement Federal GHG Programs

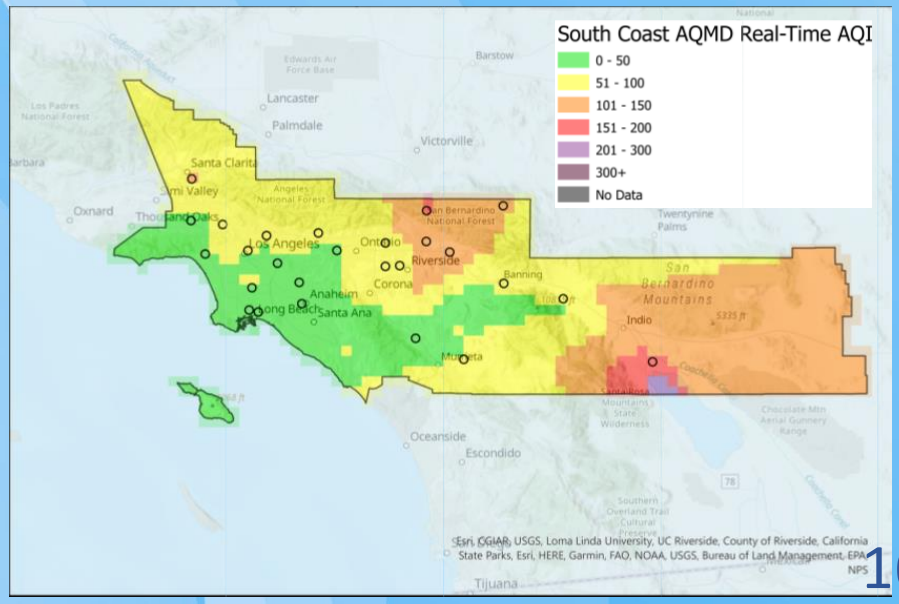


Air Quality Measurements

- 37 permanent monitoring stations including 4 near road stations
- Criteria pollutants, meteorology, VOCs, and air toxics

Main Goals

- Monitor ambient air quality levels
- Evaluate compliance with air quality standards
- Provide air pollution data to the public



Public Communication: The Air Quality Index for Criteria Air Pollutants

When the Air Quality (AQI) is:	Actions to Take:
Good	**Everyone**: It's a great day to be active outside.
Moderate	**Everyone**: It's a good day to be active outside. **Unusually Sensitive Groups***: Keep outdoor activities light and short; go indoors if you have symptoms.
Unhealthy for Sensitive Groups	**Everyone**: Keep outdoor activities light and short. **Sensitive Groups***: Go indoors if you have symptoms.
Unhealthy	**Everyone**: Keep outdoor activities light and short. Go indoors if you have symptoms. **Sensitive Groups***: Consider moving all activities indoors.
Very Unhealthy	**Everyone**: Limit all outdoor physical activity. Go indoors if you have symptoms. **Sensitive Groups***: Avoid all outdoor physical activity.
Hazardous	**Everyone**: Avoid all physical activity outdoors.*

Find AQI at home, school, work, etc. on our app!

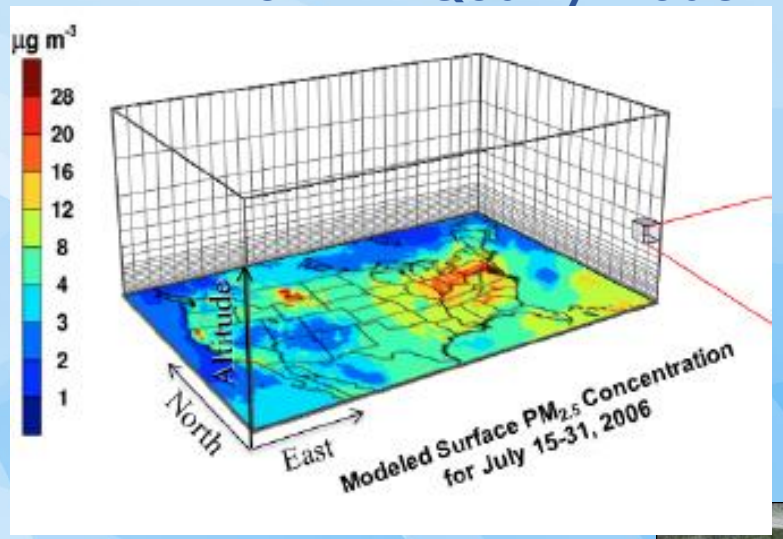
**Sensitive (at-risk) groups include people with heart or lung disease, older adults, children, pregnant people, and people who spend a lot of time outdoors.*

Air Quality Modeling

Evaluate impact of emission reduction

Emissions Inventory

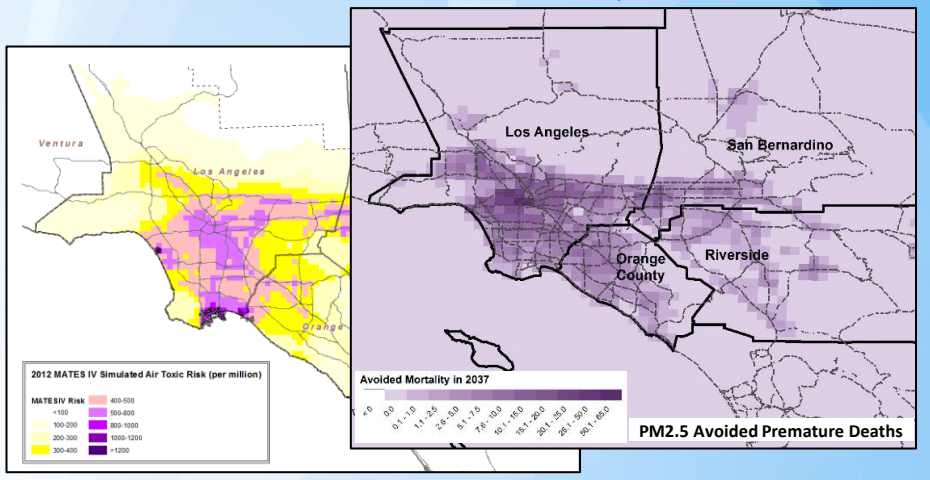
3-D Air Quality Model



Determine spatial/temporal air quality

Ozone, PM and Toxics concentrations

Cancer Risk and Benefits based on ozone, PM and toxics



Apply new control strategy

Evaluate exposure and health risks

Air Quality Status

- Air Quality Standards must be met at every monitoring station
  - Monitoring station operation and siting must meet strict U.S. EPA criteria

Design Values and Design Sites

- **Design value** is a statistical metric for determining attainment with a national ambient air quality standard
- It is calculated using monitoring data
- Monitoring station with the highest design value is considered the **design site**

Ozone Design Values & Attainment

8-Hour Standard

Year 1	Year 2	Year 3
4th highest 8-hr daily max	4th highest 8-hr daily max	4th highest 8-hr daily max
Average = Design value (ppb)		

Attainment: Design value must be less than or equal to applicable 8-hour ozone standard

1-Hour Standard

Year 1	Year 2	Year 3
# of exceed	# of exceed	# of exceed
Total # of exceedances in 3-year period		

Attainment: Each station must have less than four exceedances of the standard in a 3-year period

PM2.5 Design Values and Attainment

Annual Standard

Year 1				Year 2				Year 3			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Annual average				Annual average				Annual average			
Average = Design value											

Attainment: Design value must be less than or equal to **12 µg/m³** standard

24-Hour Standard

Year 1	Year 2	Year 3
98th percentile of 24-hr conc.	98th percentile of 24-hr conc.	98th percentile of 24-hr conc.
Average = Design value		

Attainment: Design value must be less than or equal to **35 µg/m³** standard

Historical Perspective in Our Region

LA Smog protests of 1954

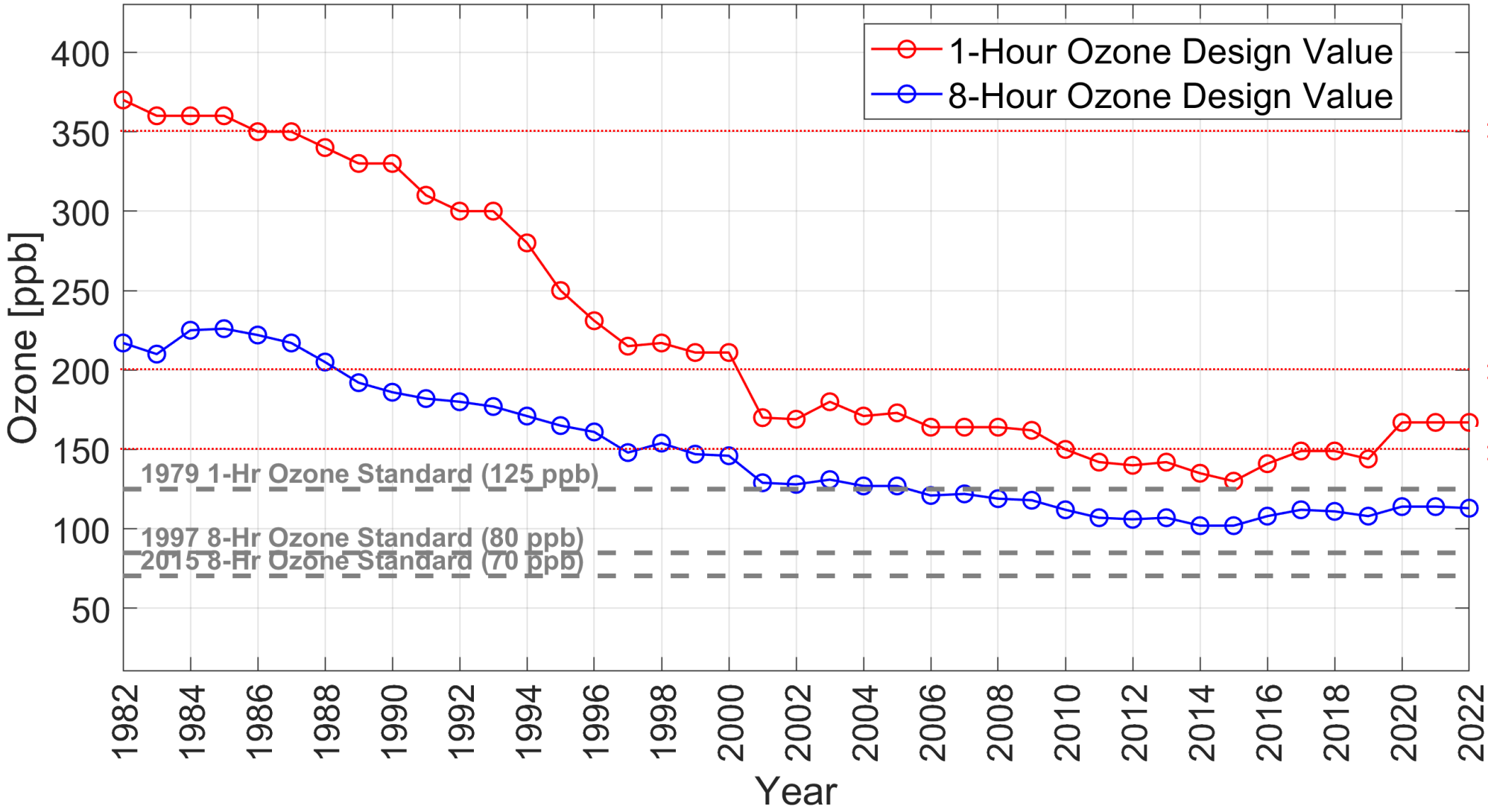
- Smog became recognized as a significant problem by the 1940s
- Eye-watering pollution formed on hot days with abundant sunshine
- Episodes closed schools and industry, non-emergency driving was prohibited, and people were forced indoors

LA Civic Center 1948

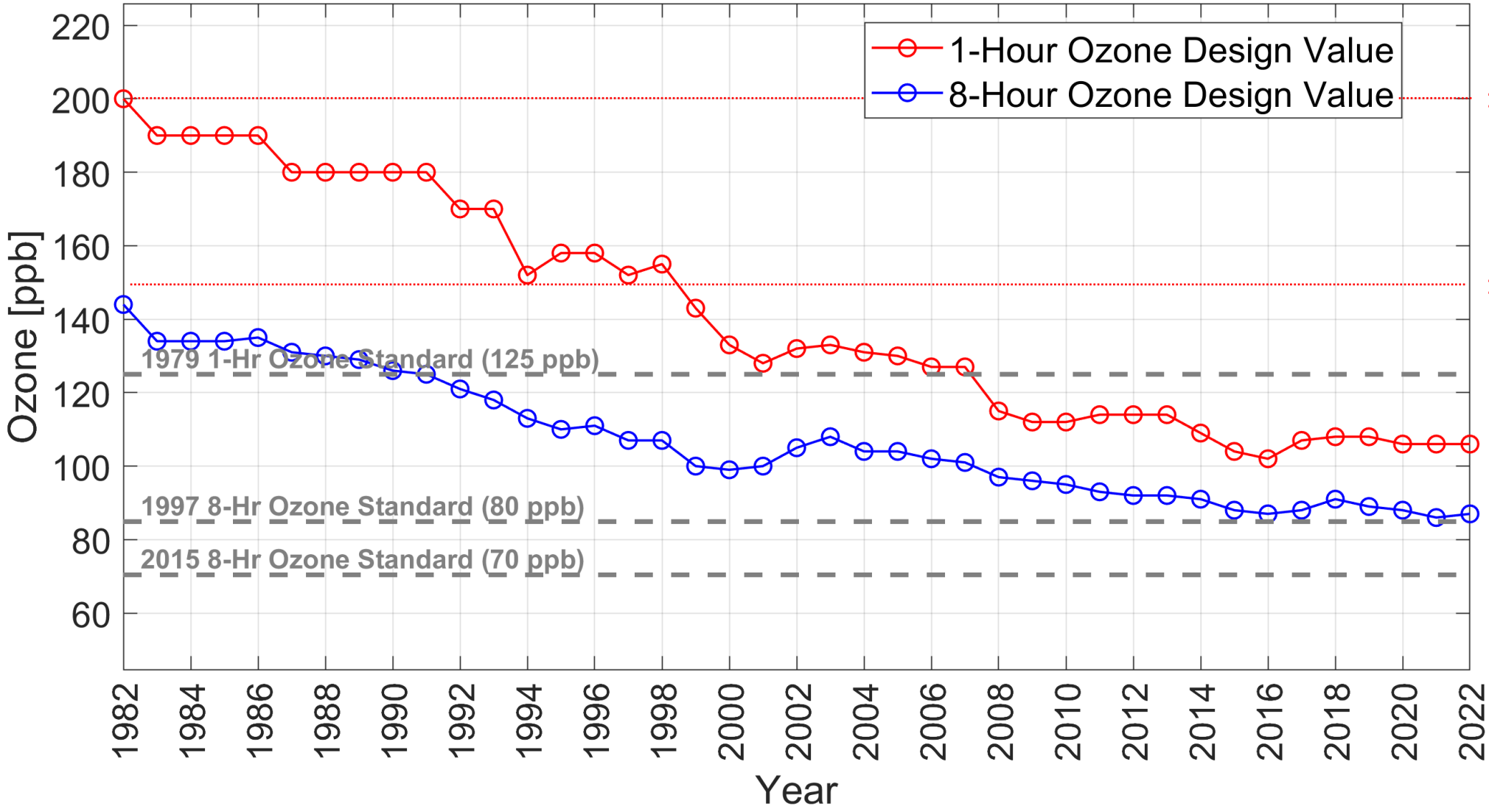
LA 1943

LA 1965

Ozone Trends in the South Coast Air Basin



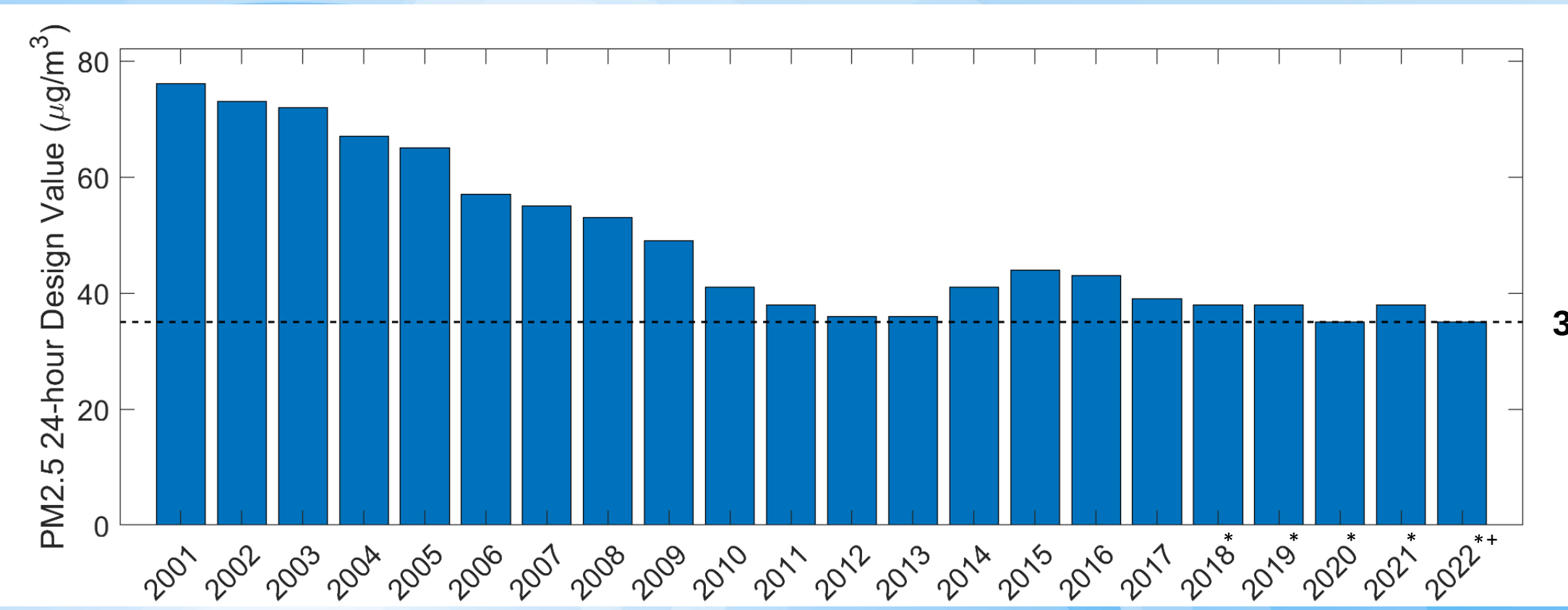
Ozone Trends in the Coachella Valley



1-hour Ozone State 1 Alert

1-hour Ozone Health Advisory

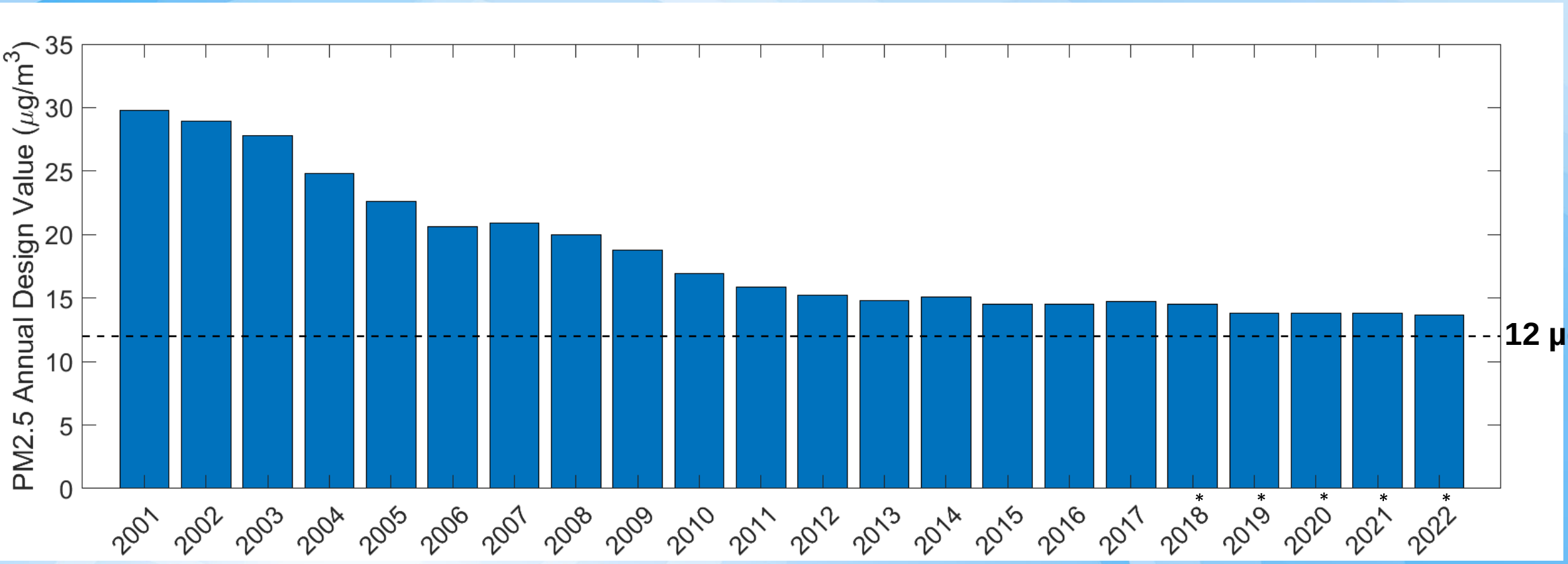
24-Hour Average PM2.5 Trends



*Data likely to be approved as exceptional events by U.S. EPA were removed.

+Subject to EPA approval of a waiver to only consider more-accurate filter-based measurements at Compton by excluding measurements from a continuous instrument that doesn't meet performance thresholds. In the unlikely event that EPA does not approve the waiver, the 2022 value is 37 μg/m^3.

Annual Average PM2.5 Trends

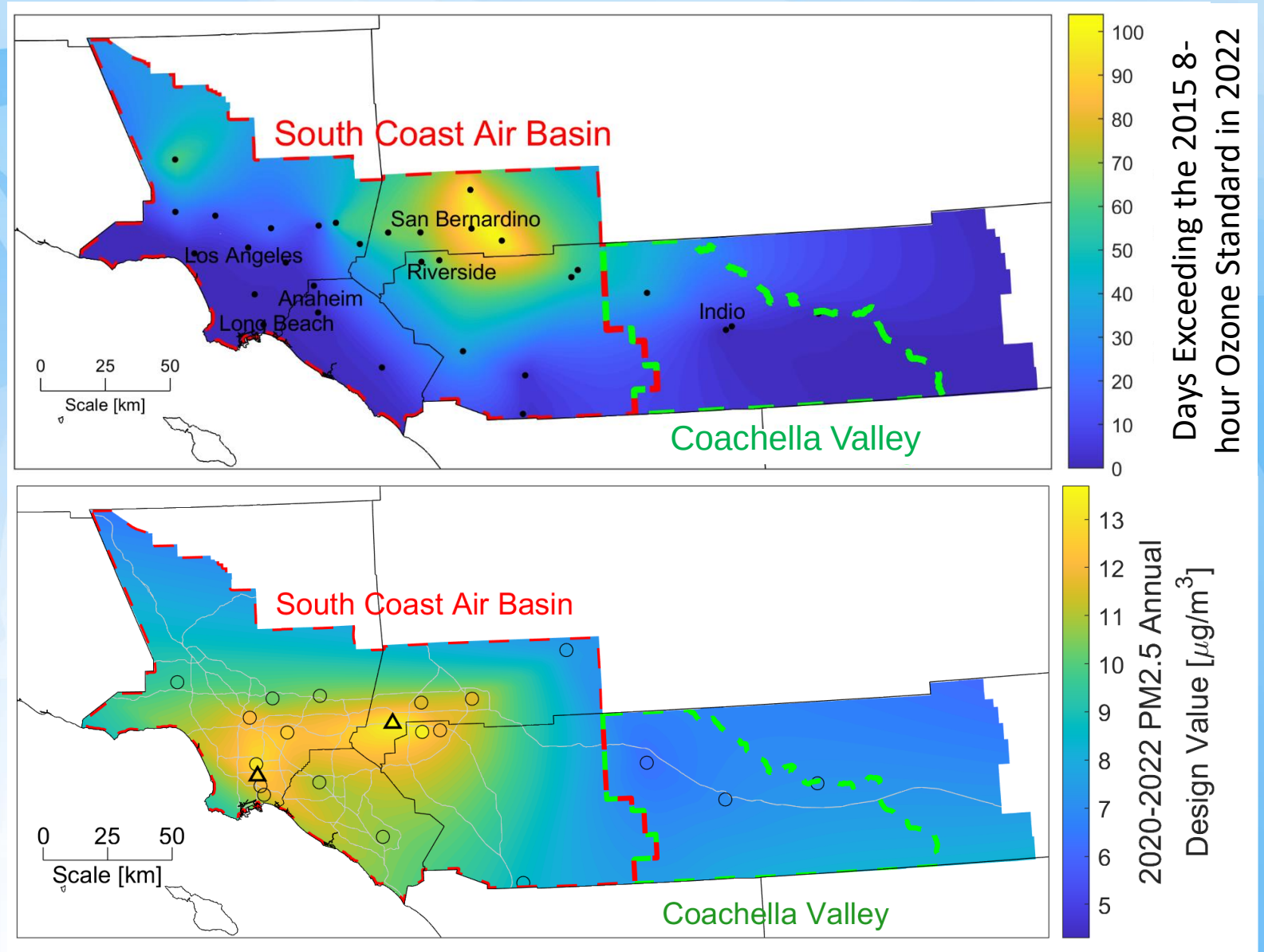


*Data likely to be approved as exceptional events by U.S. EPA were removed.

Current Ozone & PM2.5 Air Quality

Ozone

PM2.5



Attainment Status of South Coast Air Basin

Criteria Pollutant	Averaging Time	Designation	Attainment Year	
Ozone (O3)	(1979) **1-Hour** (0.12 ppm)	Nonattainment ("extreme")	2022	*
	(1997) **8-Hour** (0.08 ppm)	Nonattainment ("extreme")	2023	**
	(2008) **8-Hour** (0.075 ppm)	Nonattainment ("extreme")	2031	
	(2015) **8-Hour** (0.070 ppm)	Nonattainment ("extreme")	2037	
PM2.5	(2006) **24-Hour** (35 µg/m^3)	Nonattainment ("serious")	2023	
	(2012) **Annual** (12.0 µg/m^3)	Nonattainment ("serious")	2025	
	(1997) **Annual** (15.0 µg/m^3)	Attainment	2015	
PM10	(1987) **24-hour** (150 µg/m^3)	Attainment	2013	
Lead (Pb)	(2008) **3-Months Rolling** (0.15 µg/m^3)	Nonattainment (Partial)	2015	

* Finding of failure to attain 1979 1-hour ozone standard imminent

** Finding of failure to attain 1997 8-hour ozone expected in 2024

Attainment Status of Coachella Valley

Criteria Pollutant	Averaging Time	Designation	Attainment Year
Ozone (O3)	(1979) **1-Hour** (0.12 ppm)	Attainment	2013
	(1997) **8-Hour** (0.08 ppm)	Nonattainment ("extreme")	2023
	(2008) **8-Hour** (0.075 ppm)	Nonattainment ("extreme")	2031
	(2015) **8-Hour** (0.070 ppm)	Nonattainment ("severe"/"extreme")*	2032/2037
PM2.5	(2006) **24-Hour** (35 µg/m^3)	Attainment	N/A
	(2012) **Annual** (12.0 µg/m^3)	Attainment	N/A
	(1997) **Annual** (15.0 µg/m^3)	Attainment	N/A
PM10	(1987) **24-hour** (150 µg/m^3)	Nonattainment ("serious")	2006
Lead (Pb)	(2008) **3-Months Rolling** (0.15 µg/m^3)	Attainment	N/A

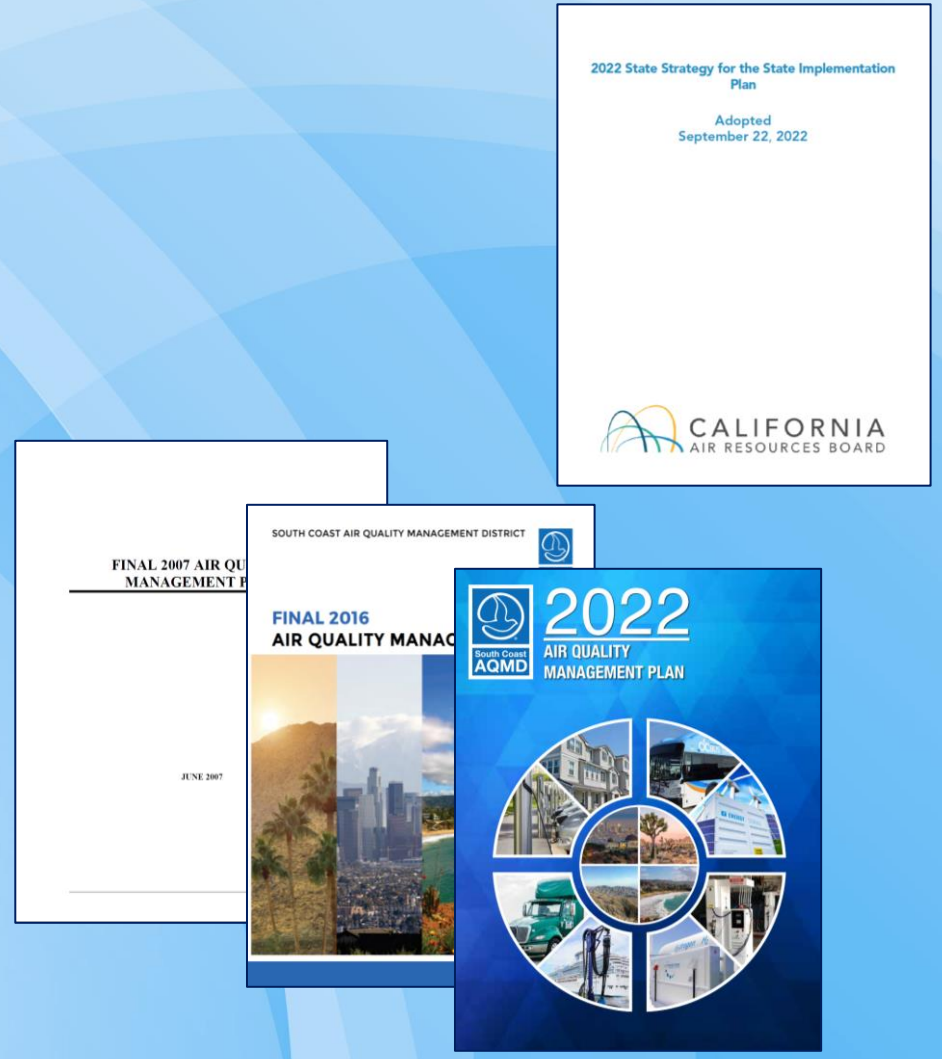
** 2022 AQMP included request to re-classify status for the 2015 ozone standard to "extreme" which allows attainment by 2037*

Attainment Status of Other Standards

Criteria Pollutant	Averaging Time	Designation	South Coast Attainment Date	Coachella Valley Attainment Date
CO	(1971) **1-Hour** (35 ppm)	Attainment	2007	N/A
	(1971) **8-Hour** (9 ppm)	Attainment	2007	N/A
NO_2	(2010) **1-Hour** (100 ppb)	Attainment	N/A	N/A
	(1971) **Annual** (0.053 ppm)	Attainment	1998	N/A
SO_2	(2010) **1-Hour** (75 ppb)	Attainment	2018	N/A
	(1971) **24-Hour** (0.14 ppm) (1971) **Annual** (0.03 ppm)	Attainment	N/A	N/A

State Implementation Plans (SIPs) & Air Quality Management Plans (AQMPs)

- If U.S. EPA determines that a state or area does not attain an air quality standard, the state must develop a SIP
  - A SIP provides the overall plan to meet the air quality standard on time
    - Includes future regulations, incentives, etc.
    - AQMPs developed by local air districts are included in SIP
    - States can not assign actions to federal government, even when they have a primary regulatory role
    - South Coast and CARB committed to reduce 29 and 44 tons per day of NOx, respectively. Federal government needs to reduce NOx by 51 tons per day



Consequences of Not Meeting Clean Air Act Requirements

Not Attaining an Air Quality Standard on Time (Non-Attainment)

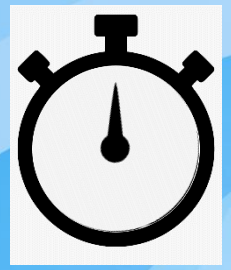
Public health consequences generally worse

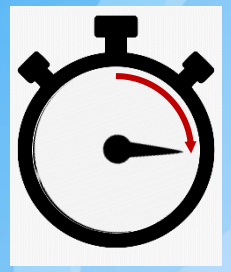
Not Meeting Planning Requirements

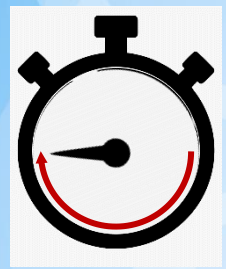
Direct economic consequences generally worse

Both sets of triggers result in several mandatory and discretionary consequences

Non-Attainment Clock Overview*







- Clock starts – Attainment date
- No later than 6 months after attainment date – U.S. EPA determines whether area attains standard and publishes notice in Federal Register
  - **Mandatory fees for major sources**
- Within 1 year of non-attainment notice - SIP revision due
  - EPA may prescribe measures to include in plan
  - New attainment date established
    - New date does not resolve any SIP planning deficiencies that led to sanctions

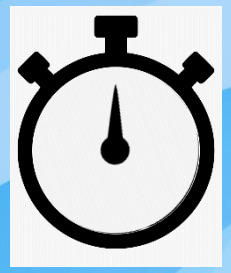
*CAA §179

CAA Planning Requirement Triggers*

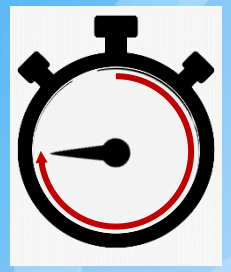
- A state can trigger CAA consequences if it:
  1. Does not submit a SIP
  2. Does not submit all elements of a SIP or meet minimum completeness criteria
  3. Has a SIP disapproved
  4. Fails to submit, or has disapproved, other requirements of the CAA (e.g. an adequate maintenance plan)
  5. Does not implement a requirement of an approved SIP

*CAA §179

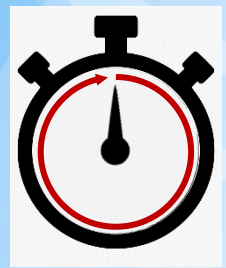
Planning Requirements Sanction Clock Overview



- Clock starts - EPA Administrator determines a planning requirement has not been met*



- Within 0-18 months - Administrator must implement one of the following sanctions:*
  - **Increased offset ratio of VOC and NOx** for new and modified major sources
  - **Cut off federal highway funding** (transit and certain safety projects exempt)
- Administrator may also withhold all or part of Section 105 grants for support of air pollution planning and control programs



- Within 18-24 months - if deficiency not corrected, the Administrator must:*
  - Implement both highway and offset ratio sanctions
    - Or at any time if Administrator finds lack of good faith
  - Within 0-24 months - promulgate a **Federal Implementation Plan****

**CAA §179*
***CAA §110*

Addressing Local Air Quality Issues

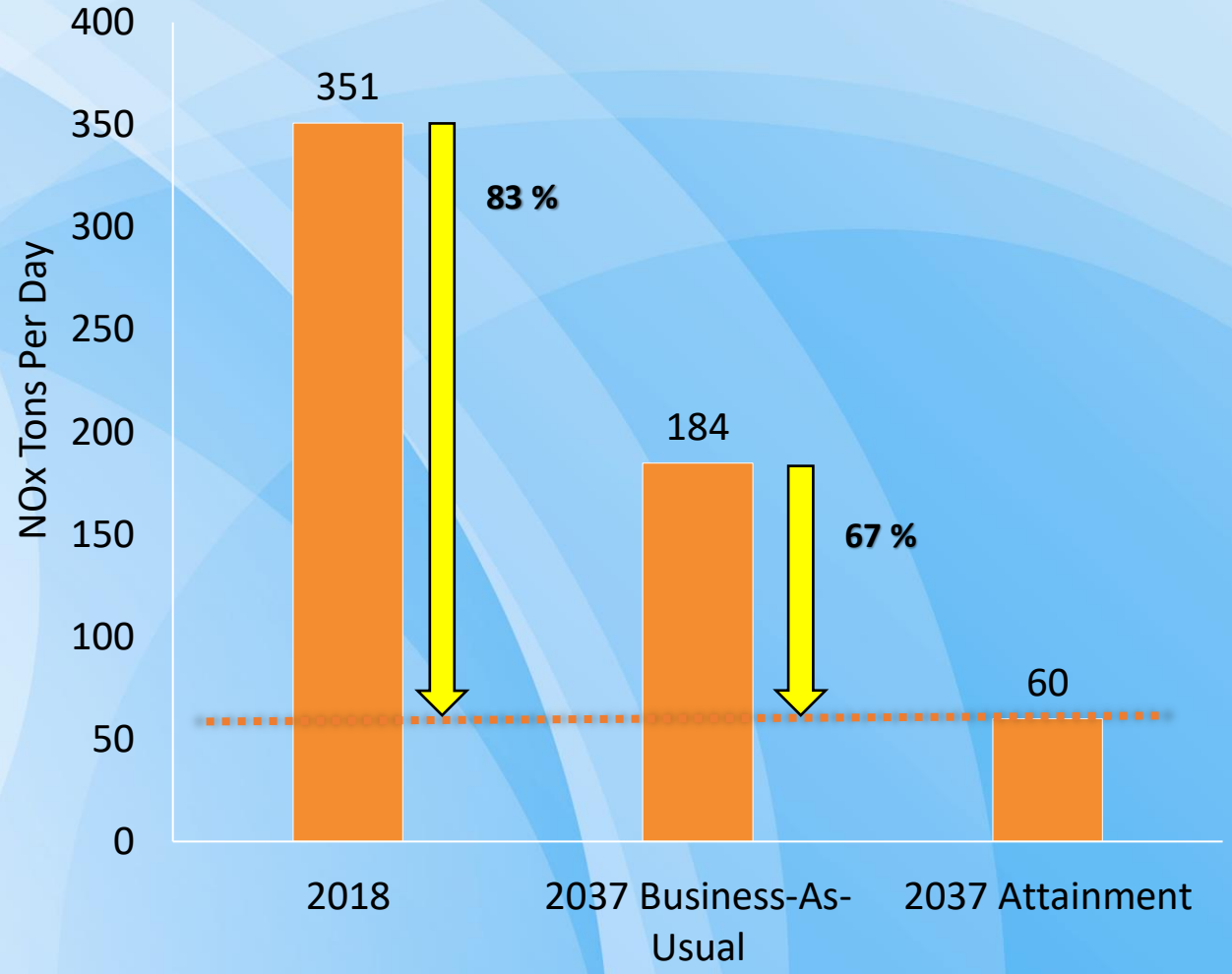
- AB 617 developed a new paradigm for addressing community-scale air quality
  - Focus on disadvantaged communities
  - New planning and monitoring programs focused on community priorities
    - Community Air Monitoring Plans (CAMPs)
    - Community Emission Reduction Plans (CERPs)
- AB 2588 Toxic 'Hot Spots' Program
  - Facility-by-facility approach to evaluate health risks
    - Public notification and risk reduction if risks exceed thresholds

Ongoing Efforts and Challenges: Plans

- Implementation of adopted AQMPs and CERPs
  - Continued development of rules and pursuit of incentive funding
    - Examples: Indirect source rules, federal funding programs, etc.
  - Continued engagement with Federal and State agencies to reduce emissions from sources under their purview
- Development of new plans
  - Examples: PM2.5 AQMP, Coachella Valley Contingency Measure Plan, etc.

Ongoing Efforts and Challenges: Need to Reduce NOx Emissions

- NOx is the primary pollutant that must be controlled to reduce ozone in our region
- NOx must be reduced to 60 tons per day by 2037 to meet the 2015 ozone standard
- Widespread deployment of zero emission technologies across all sectors and wherever feasible will be needed to achieve the NOx reductions
  - Ultra-low NOx sources where ZE not feasible



Ongoing Efforts and Challenges: Revised PM2.5 Attainment Plan

- 2016 AQMP included a 2012 annual PM2.5 plan
  - EPA did not take timely action on the plan

In January, EPA was sued for failure to take action on the plan

EPA has indicated the higher PM2.5 levels at near-road monitoring sites now need to be considered

South Coast AQMD withdrew the plan to avoid disapproval

South Coast AQMD will develop new plan by spring 2024

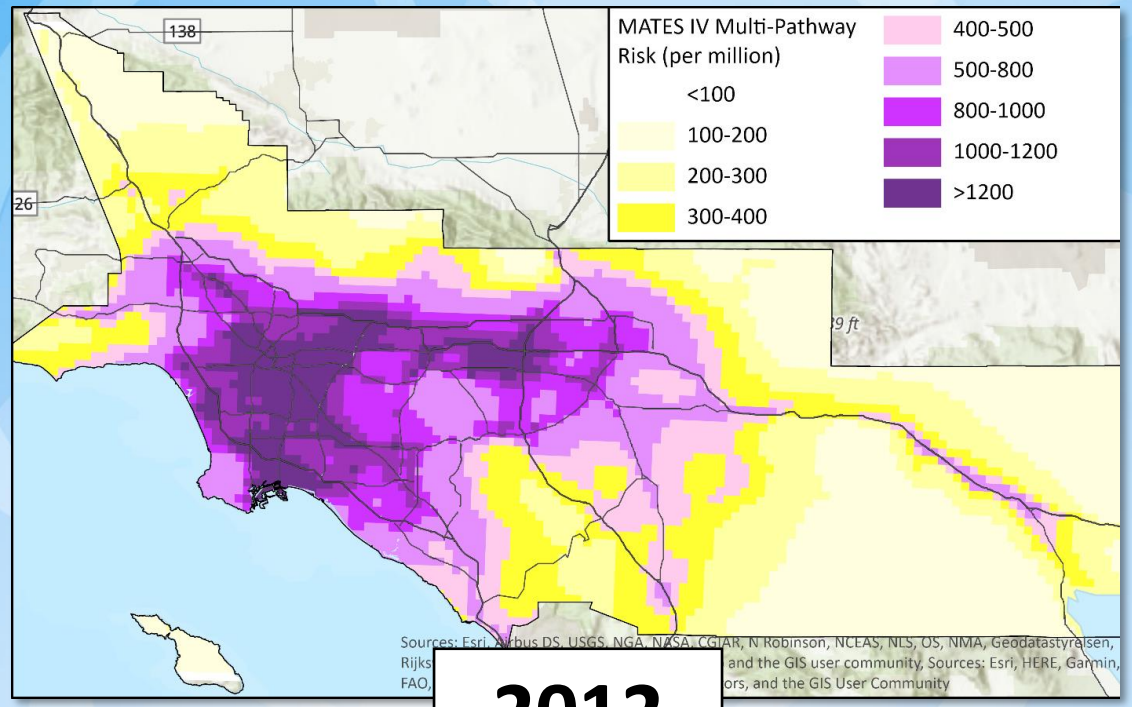
Challenging new controls will be needed





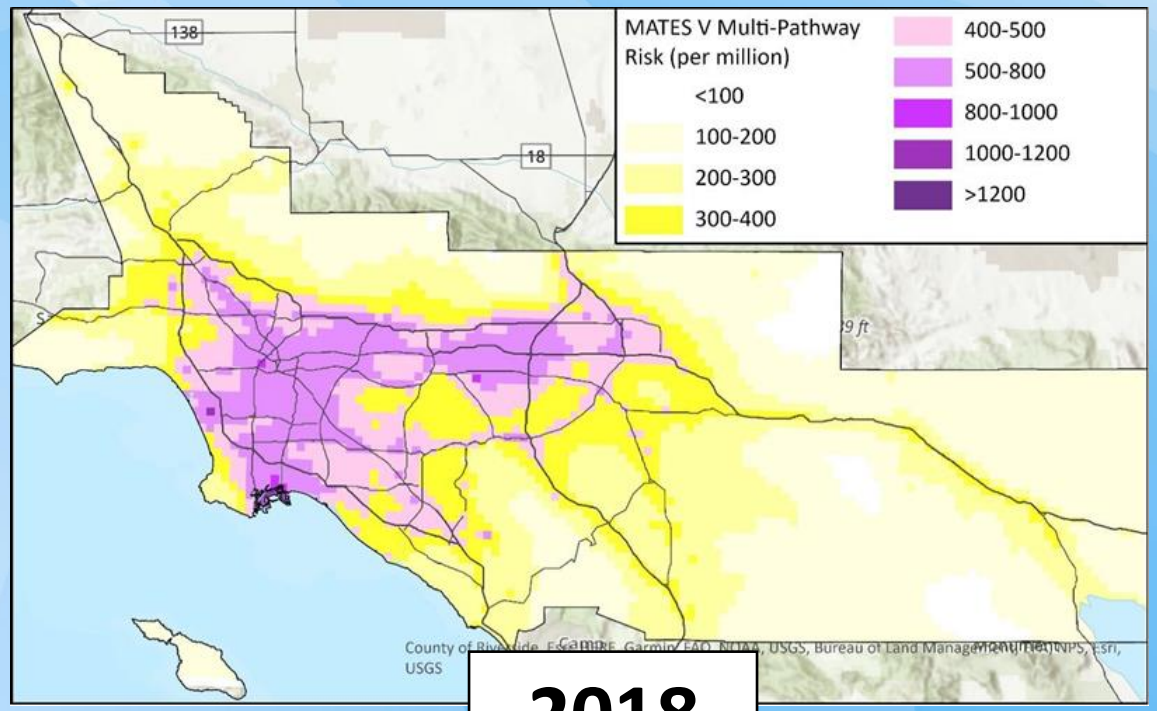
Ongoing Efforts and Challenges: Air Toxics Cancer Risk

MATES IV*:
South Coast Air Basin: **997-in-a-million**
Coachella Valley: **357-in-a-million**



2012

MATES V*:
South Coast Air Basin: **455-in-a-million**
Coachella Valley: **250-in-a-million**

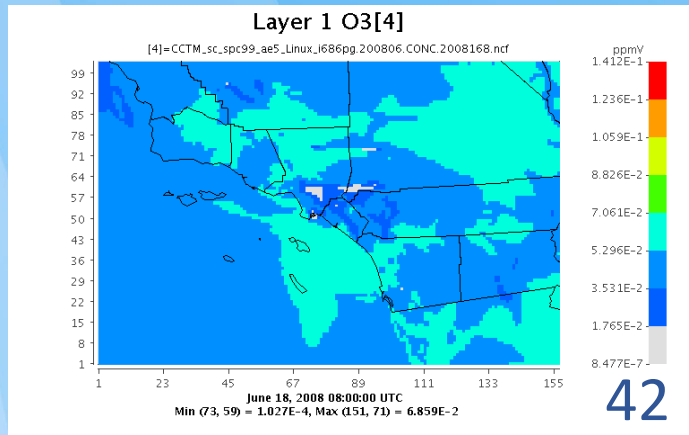


2018

*Cancer risk is weighted by population

Multiple Air Toxics Exposure Study VI

- MATES V published in August 2021
- Planning process for MATES VI currently underway
  - Comprehensive measurement and modeling campaign
- Expected to include additional measurements to identify sources contributing to elevated air toxics levels throughout the region
  - Example: considering additional monitoring at near-road stations to determine the influence of key mobile sources such as tire and brake wear



Summary

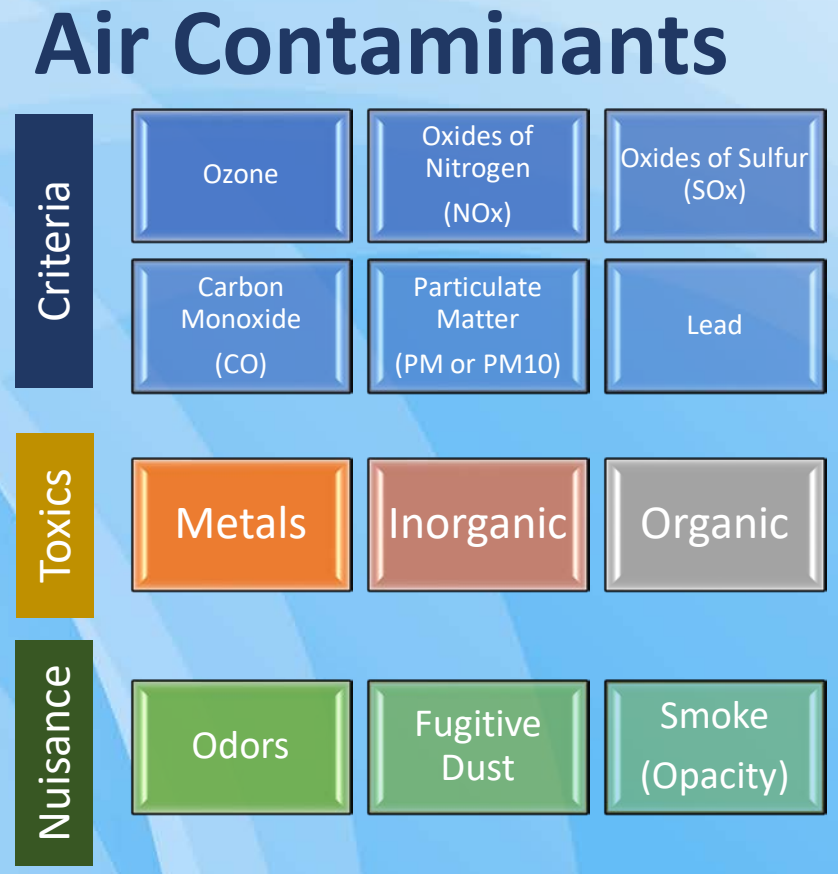
- Air pollution has many serious health effects
- South Coast AQMD is responsible for developing plans and regulating criteria pollutants and air toxics
  - Regional and local air pollution
  - Assistance needed from state and federal partners
- South Coast Air Basin has the highest ozone levels in the nation and among the highest PM2.5 levels
  - Dramatic improvement over past decades but federal standards still exceeded
  - Significant NOx and PM2.5 emissions reductions are still needed to meet standards
- Toxic emissions continue to pose challenges for local communities, in particular disadvantaged communities
  - Improvement continues, and additional work is underway

Permitting

Jason Aspell
Deputy Executive Officer
Engineering and Permitting
South Coast AQMD Board Retreat
May 11, 2023

Operations that Need Permits

- Any equipment which may release or control the release of air contaminants
- Some exemptions from permit due to low emission potential or regulatory jurisdiction (e.g., consumer products, mobile sources)
- Two step permitting process
  - Permit to construct (new, modified, relocated)
  - Permit to operate (existing, change of operator)
- Permits are evaluated for regulatory compliance prior to issuance
- Permits to construct are subject to New Source Review standards



Range of Facilities Permitted

Automotive Painting

Gas Station

Dry Cleaner

- Aerospace
- Sewage Treatment
- Landfills
- Chemical Processing
- Metal and Wood Coating
- Etc.,

Hospital

Refinery

Power Plant

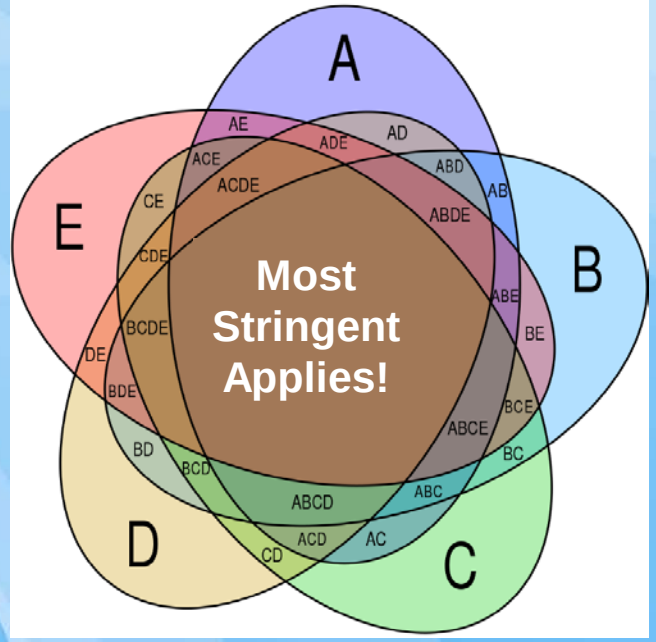
- Non-major (Minor) sources
  - ~26,000
- RECLAIM
  - ~237
  - Larger NOx/SOx sources
- Title V Major sources
  - ~320

South Coast AQMD's Permitting Process

- Application submittal
  - Prescreening / completeness determination
  - Application fees
  - Application Submittal Date vs. Deemed Complete Date
- Engineering evaluation
  - Background
  - Emission Calculations
  - All South Coast AQMD, State and Federal Rules evaluated
  - New Source Review (NSR) analysis
  - Toxics analysis
  - CEQA analysis
- Permit Conditions
- Public notice / EPA, ARB & public comments
- Final permit action (approval / denial)

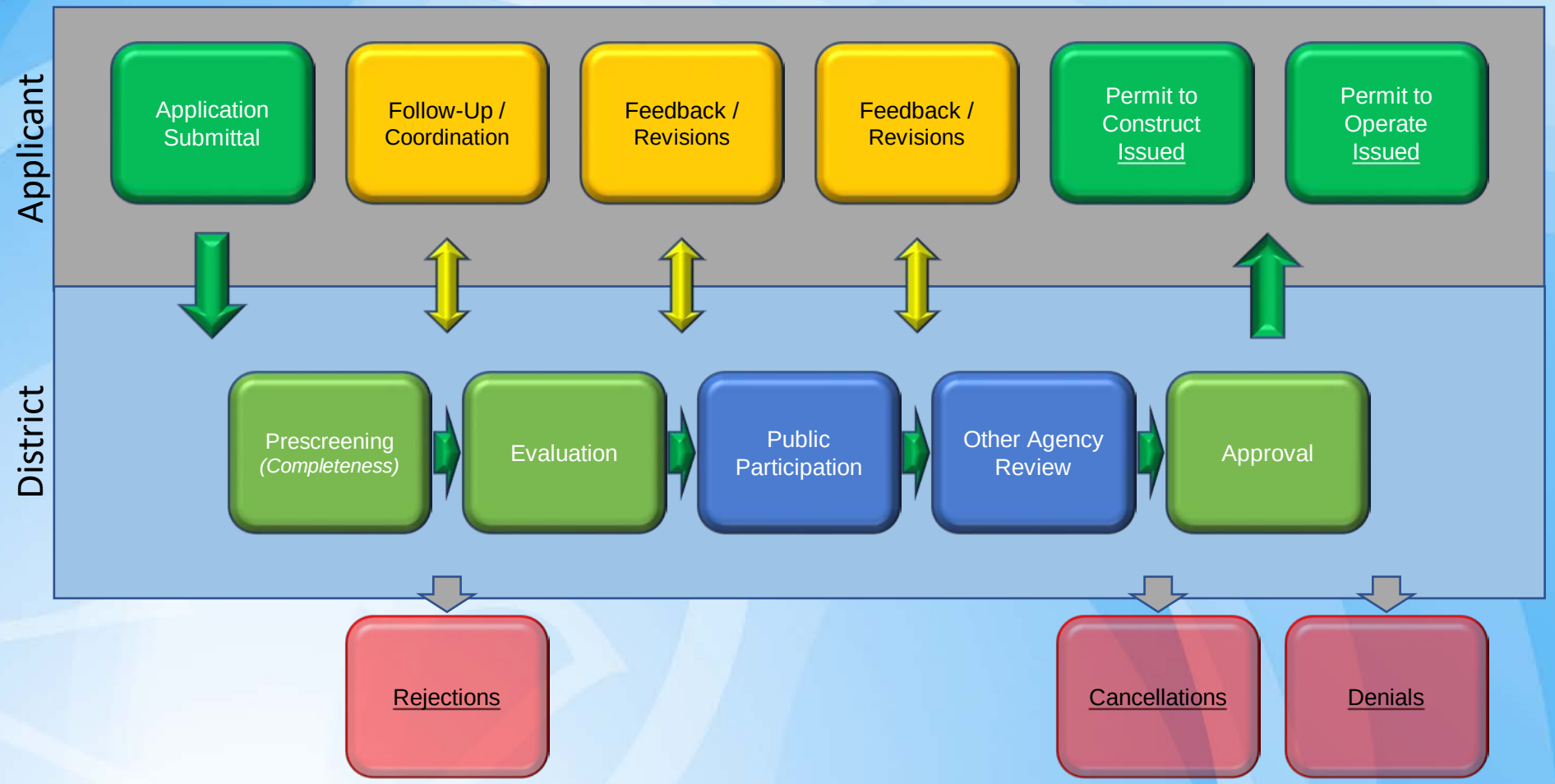
Permit Evaluation Criteria

- New and Modified Sources
  - Best Available Control Technology - BACT (See BACT Guidelines)
  - T-BACT (See Regulation XIV - Toxics)
- Existing Sources
  - RACT and BARCT (See Regulation XI)
  - Toxics (See Regulation XIV)
  - Prohibitions (See Regulation IV)
- State Toxics Requirements
  - Airborne Toxic Control Measures (ATCM)
- Federal Source Specific Requirements
  - National Emission Standards for Hazardous Air Pollutants (NESHAP)
  - New Source Performance Standards (NSPS)

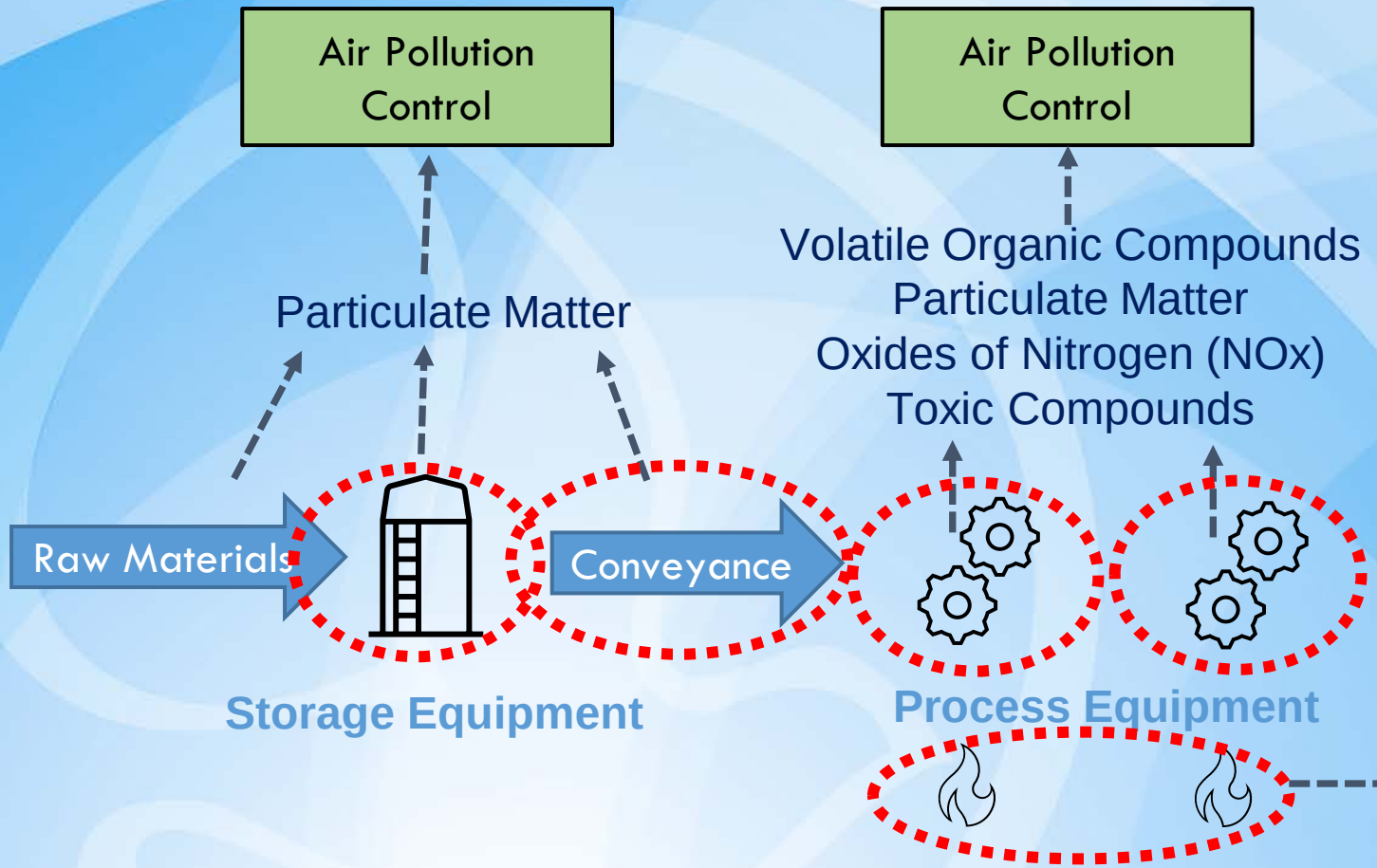


A single source can be subject to multiple control requirements due to multiple pollutant, source, and industry categories. The most stringent requirement applies, unless specifically exempted.

Permitting Process Application Flow



Permit Evaluations



Engineering Calculations

- ✓ Materials
- ✓ Chemical Reactions
- ✓ Energy
- ✓ Pressure
- ✓ Temperature
- ✓ Air Flow
- ✓ Emissions

Permit applications for each permit unit

NSR Discussion Example

Automotive Spray Booth

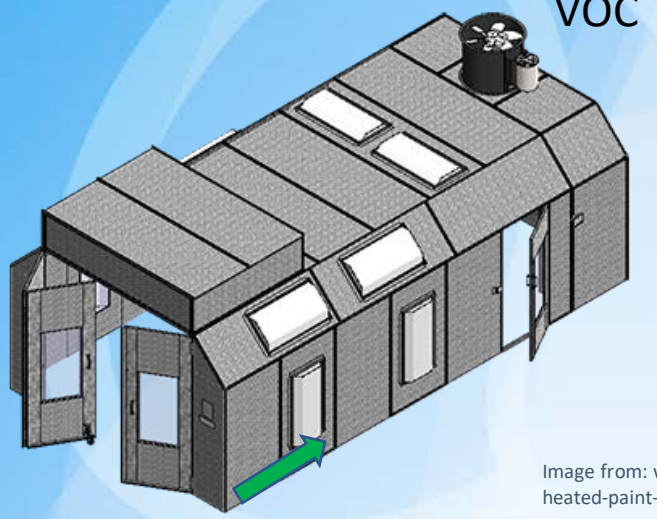


Image from: www.paint-booths.com/product/heated-paint-booth-SD-1000GH.html

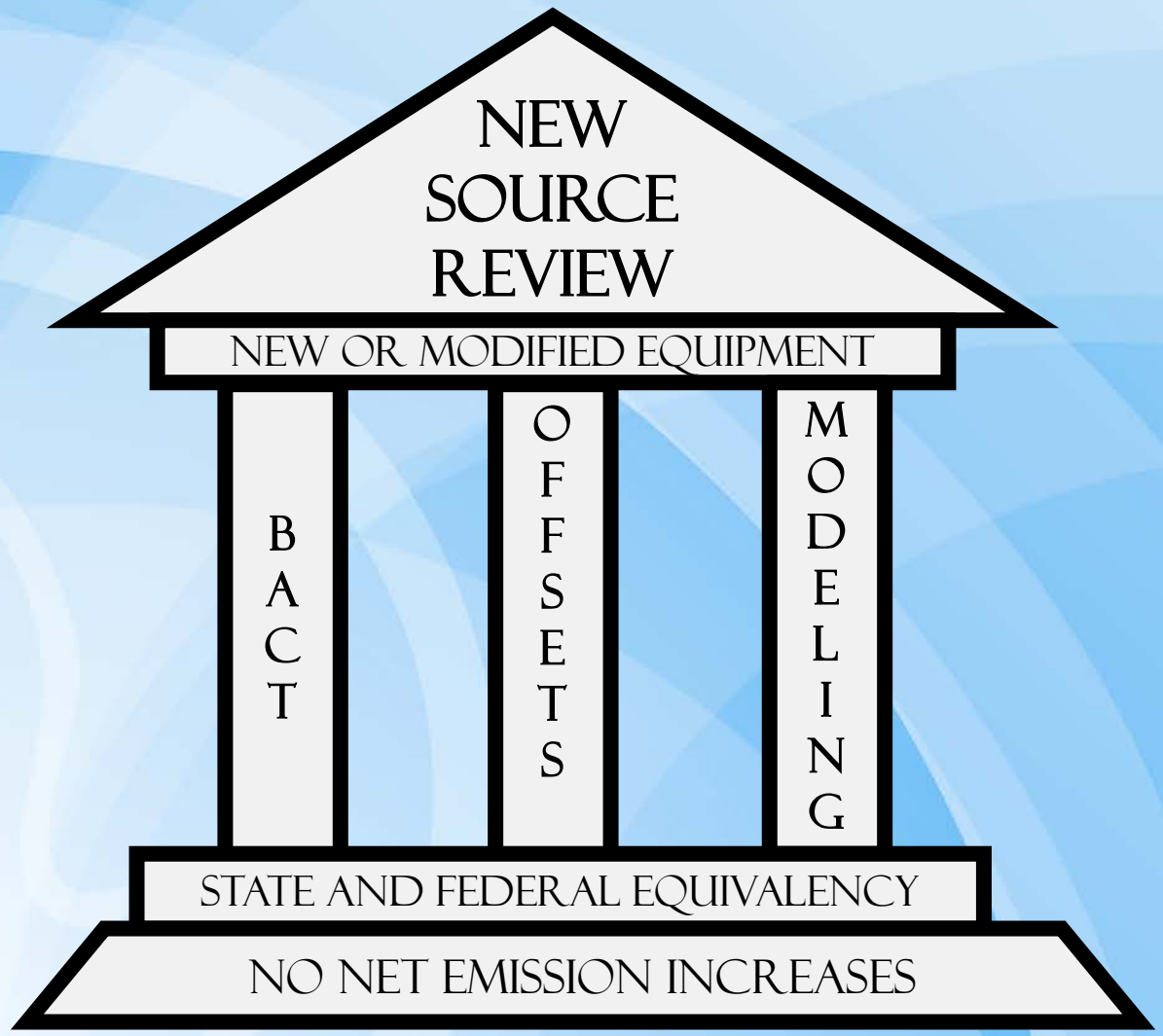
Image from: www.paint.org/coatingstech-magazine/articles/optimum-viscosity-paint-application/

Controlled environment to filter dust and vent sprayed coatings

- NOx and CO emissions - natural gas-fired heaters to dry coatings
- Toxic compounds – natural gas combustion

Spray guns to apply pressurized coatings to vehicles

- PM_{10} Emissions - solids in coatings
- VOC emissions - coatings and solvents drying
- Toxic compounds - solids and solvents in coatings


NEW
SOURCE
REVIEW
NEW OR MODIFIED EQUIPMENT
BACT
OFFSETS
MODELING
STATE AND FEDERAL EQUIVALENCY
NO NET EMISSION INCREASES

New Source Review

- The cornerstone of Permits to Construct is **New Source Review (NSR)**
  - Regulation XIII
- NSR is designed to meet or exceed state and federal Clean Air Act requirements for new and modified emission sources
- **NSR Purpose** – To ensure that the environment is protected while allowing economic growth. Programmatic goal is no net emission increases.
  - **Non-attainment** – Air quality does not worsen in areas where air is currently unhealthy (NA-NSR)
  - **Attainment** – Air quality is not significantly degraded in areas where air is currently clean (PSD)
- Regulates and accounts for all emission changes (both increases and decreases) from the permitting
  - Complex database maintained for all historical emission transactions

When is NSR triggered?

- Preconstruction review – Permit application
- Under Rule 1301, NSR is triggered for any:
  - Installation of new equipment or modification of equipment
  - Modification: results in a physical change or a change in the method of operation
- Emissions of non-attainment air contaminants, ammonia, ODCs
- Once triggered staff evaluates for entire Regulation XIII

Regulation XIII Rules

- Rule 1303 – Requirements:
  - New equipment or modification with any emission increase
  - BACT, Modeling, and Emission Offsets
- Rule 1304 – Exemptions
  - Modeling and Offset exemptions
  - Limited BACT exemptions
- Rule 1313 – Permits to Operate
  - Permits must have monthly maximum emission limits, and identified BACT conditions

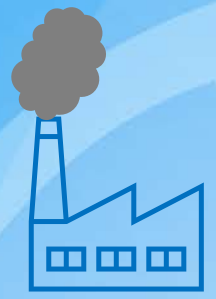
BACT

BACT is the most stringent emission limitation or control technique for a class and category of equipment that is:

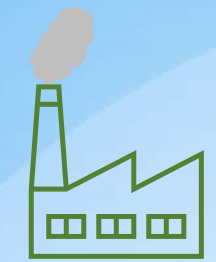
- Achieved In Practice, or
- Contained In a State Implementation Plan (SIP), or
- Technologically Feasible and Cost-effective

BACT required if NSR analysis shows that there is an emissions increase **≥ 1.0 lb/day**

How BACT Works



Facility A
Existing equipment permitted in 2015
At time of permitting BACT standard is 10 ppm



Facility B
New equipment permitted in 2020
To avoid triggering emission offset requirements, facility installs cleaner technology with permitted limit of 5 ppm

New BACT Standard
Facility B sets new BACT standard of 5 ppm
Emission limit is achieved in practice
Staff updates BACT Guidelines

Current Day

- Due to increased demand Facility A needs to increase production.
- Emission increase triggers BACT
- Modified equipment required to now meet 5 ppm
- Add-on control to reduce 10 ppm to 5 ppm

BACT Guidelines

- Published for commonly permitted equipment
  - Based on category or class of source
- Technical feasibility considered for class and category
- Periodically modified to reflect changes in technology
- Guidelines also include policies and procedures
  - Public process
  - Scientific Review Committee

Major Source

- Federal Title V facilities - LAER
- Additional stringencies due to federal regulations
- Does not allow for routine consideration of cost
- Applicable at time of permitting

Minor Source

- Smaller emitting facilities
- CA H&SC 40440.11
- Cost Effectiveness
- Board approval of BACT Guidelines
- Based on Appl. Deemed Complete Date

BACT

Spray Booth Example

- Minor Source – Refer to BACT Guidelines
- Exhaust Filters
  - Controls PM_{10} emission from spraying of coatings
- Compliance with Coating and Solvent Rules
  - Rules limit VOC content
- Heater maximum operation
  - Less than 1.0 lb NOx/day, or
  - Meet Rule 1147 emission limits and source test requirements

As emissions increase, BACT control requirements may become more stringent

Modeling

- Low emission sources typically pass using conservative emission screening tables
- More complex analyses required for higher concentration emission sources
- Modeling software calculates expected concentrations using:
  - Source characteristics (height, location, velocity, temperature, concentrations, etc)
  - Meteorological data
  - Surrounding terrain

Modeling

Spray Booth Example

- Spray booths typically pass modeling screening tables
  - No VOC modeling requirements
  - Low NOx emissions
  - PM_{10} control (filters)
- In some circumstances sources may need additional permit requirements:
  - Install higher efficiency control
  - Minimum stack height
  - Limit production (spray) rate
  - Additional monitoring and testing

Emission Screening Table

Heat Input Capacity (million BTUs/hr)		NO_X (lbs/hr)	CO (lbs/hr)	PM_{10} (lbs/hr)
Noncombustion Source		0.068	3.7	0.41
	< 2	0.20	11.0	1.2
>2	< 5	0.31	17.1	1.9
>5	< 10	0.47	25.9	2.8
>10	< 20	0.86	47.3	5.2
>20	< 30	1.26	69.3	7.6
>30	≤40	1.31	72.1	7.9

Emission Offsets

- NSR program design - No net emission increases
- Rule 1303 – Unless exempt, all emission increases shall be offset
- Emission increases offset by:
  - Emission Reduction Credits, or
  - Other allowances, such as Priority Reserve
    - Essential Public Services

Emission Reduction Credits (ERC)

- Emission offsets are tradable allowances created by applicants through reduction of emissions from existing emission sources to offset new or modified emission sources
  - Issued as ERC in lb/day
- ERC are generated from:
  - Equipment shut-downs (primarily)
  - Voluntary add-on controls beyond required controls
- Must meet five criteria
  - Discounted to BACT
- ERC can be traded or sold
  - Nonattainment (NOx, VOC, SOx, PM_{10}) 1.2 to 1.0 offset ratio
  - Attainment (CO) 1.0 to 1.0 offset ratio

Emission Offsets

- Rule 1304 exempts lower emitting facilities from providing emission offsets
- Several other offset exemptions
  - Emergency equipment,
  - Abrasive blasting,
  - Concurrent facility modifications, etc.
- Tracking of all emissions increases and decreases, *including exemptions*, is critical for demonstrating State and Federal equivalency

Pollutant	Facility Potential to Emit (tons per year)
VOC	4
NOx	4
SOx	4
PM_{10}	4
CO	29

Emission Offset

Spray Booth Example – VOC Offsets

Existing Permitted Equipment	Potential to Emit (ton VOC per year)*
Spray Booth 1	2.0
Spray Booth 2	1.0
Solvent Cleaning Equipment (SC)	0.25
Prep Station (PS)	0.25
Total	3.5

4 ton VOC per year Offset exemption threshold

Less than 4 ton VOC per year
No emission offsets required

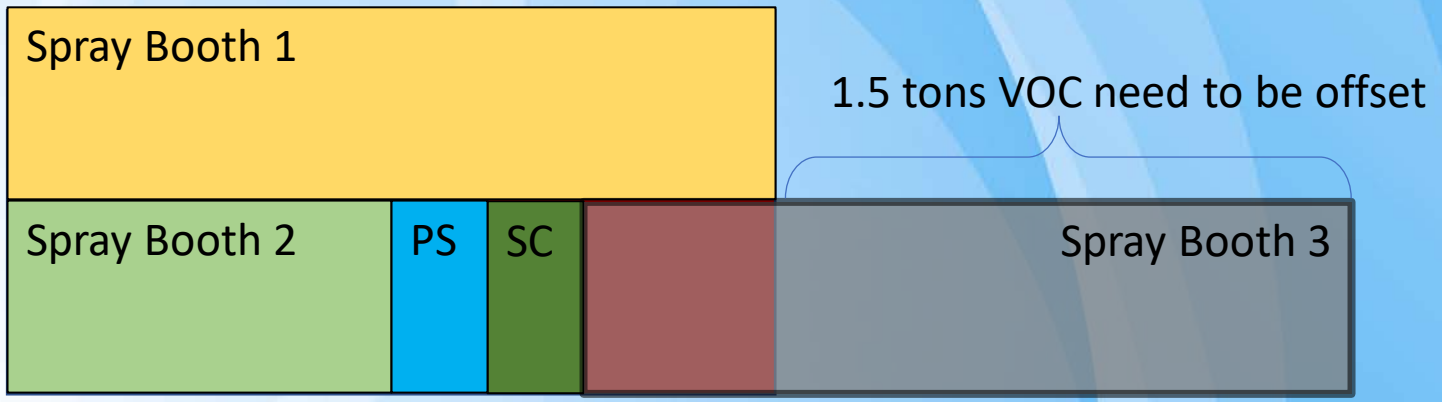
*Example focuses on VOC only. Each pollutant evaluated independently.

Emission Offset

Spray Booth Example

Existing Permitted Equipment	Potential to Emit (ton VOC per year)
Spray Booth 1	2.0
Spray Booth 2	1.0
Solvent Cleaning Equipment (SC)	0.25
Prep Station (PS)	0.25
NEW SPRAY BOOTH 3 (PROPOSED)	2.0
Total	5.5

Greater than 4 ton VOC per year
Emission offsets required



Emission Offset

Spray Booth Example -Purchasing Offsets

- Within 90 days of notification, facility must provide ERCs
- ERCs may be purchased from other facilities or brokers
  - ERCs listed on South Coast AQMD website
- Emissions are calculated in daily amounts
  - 4 tons VOC per year = 22 lb VOC per day
- Offsets purchased must be times 1.2 factor

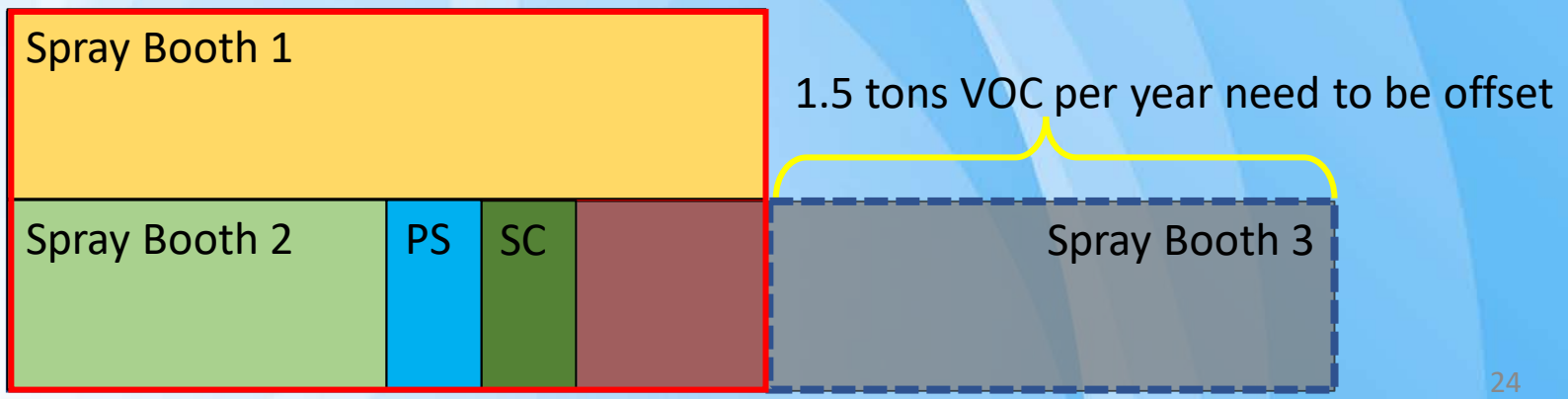
  1.5 tons VOC per year = 8.2 lb VOC per day*

  8.2lb VOC/day x 1.2 offset factor = 9.84 lb VOC per day or 10 lb VOC/day ERC

2020 Average ERC prices

$23,084/lb VOC

$334,246/lb PM10



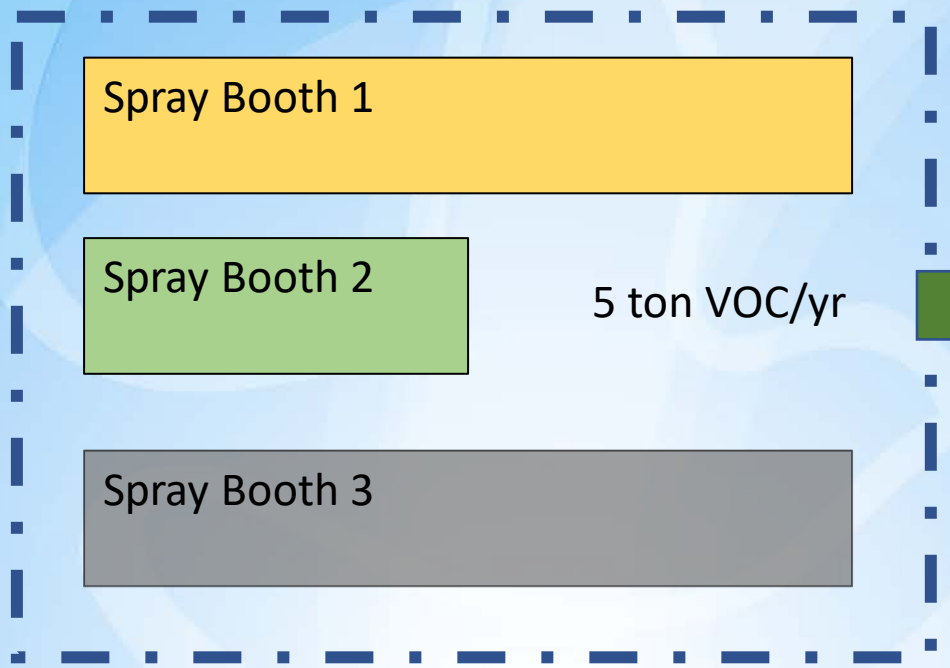
* Emission calculations simplified for purposes of presentation. Rule 1306 and 1309 procedures apply.

Emission Offset

Spray Booth Example - Other Compliance Options

- Facilities may utilize other strategies to avoid cost of ERCs
  - Compliance approach is a business decision
- Concurrent Facility Modification
  - Reduce emissions from other equipment
- Process modifications of coating reformulations
- Installation of additional air pollution control equipment to further reduce emissions

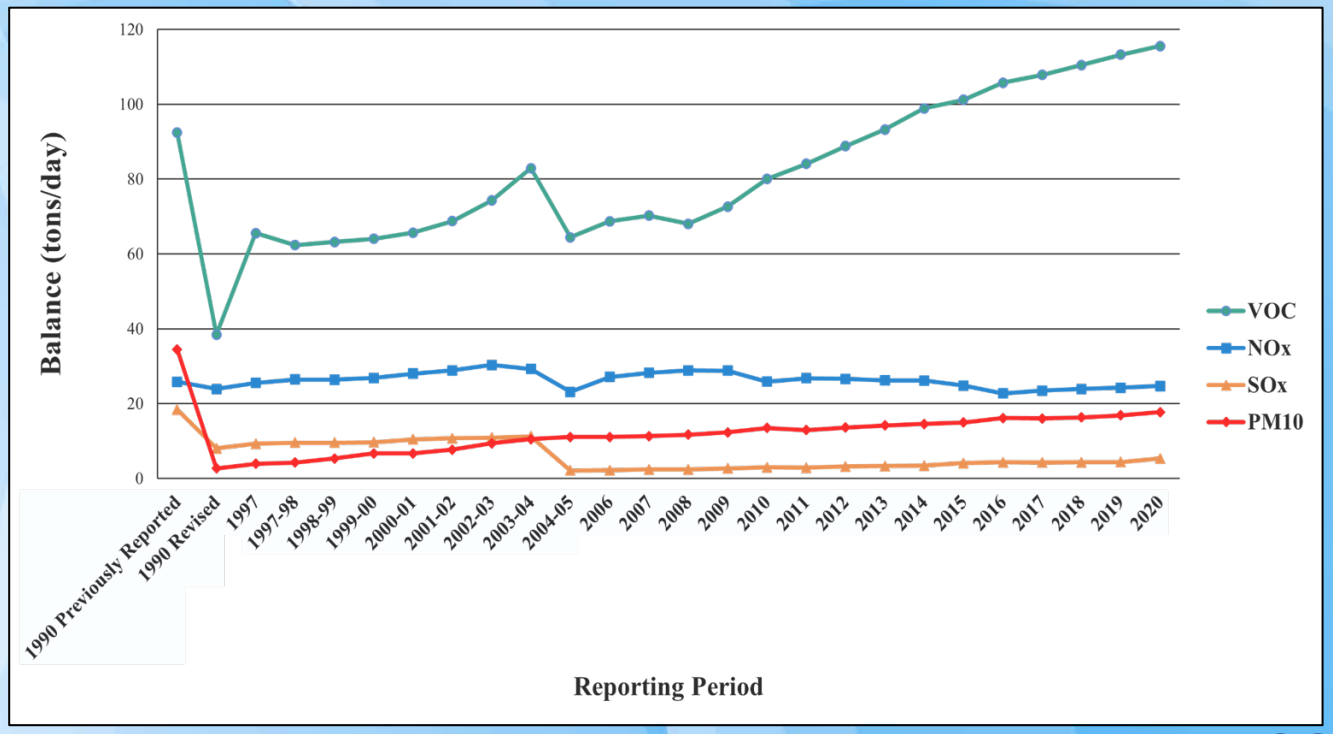
Modifications or new control equipment require additional permit applications



Company may be eligible to generate their own ERCs

Rule 1315 – Federal NSR Tracking System

- Annual NSR Status Reports since 1990
- U.S. EPA requested memorialization of equivalency demonstrations.
- Backstop Provisions
  - Discontinue Priority Reserve
  - Discontinue use of 1304 for offsets
  - Major source permits on hold



Summary

- New Source Review is the cornerstone of permitting
  - New or modified equipment
  - BACT, Modeling, and Offsets triggered with increases of emissions
- Complexity of permitting increases significantly with complexity of requirements, equipment, and facilities

Compliance and Enforcement

Terrence Mann
Deputy Executive Officer
Office of Compliance and Enforcement

Governing Board Retreat
May 11, 2023

OCE Inspection Staff & Teams

Air Quality Inspectors

- Approx. 85 inspectors
- Geographic sectors & specialized teams
- Long Beach Office focused on refineries
- Administrative Unit

Industrial/Commercial/ Governmental Operations

Refinery & Energy

Retail Gasoline Dispensing

Major Sources

Toxics & Waste Management

Area Sources

Stationary Sources Inspected

- Refineries
- Oil & Gas Production Sites
- Power Plants
- Landfills
- Sewage Treatment
- Aerospace
- Chemical & other Manufacturing Operations
- Metal & Wood Coating Operations
- Construction Sites
- Auto Body Shops
- Gas Stations
- Dry Cleaners
- Emergency Generators

Primary Enforcement Activities

Inspect Permitted Facilities

Over 25,000 facilities, including 335 Title V facilities

Portable Equipment Inspections

~11,000 registered units

Notifications

Equipment Breakdowns, Refinery Flaring Events, etc.

Complaint Response

10,000+ complaints annually

Enforcement Action

Notices to Comply, Notices of Violation, Orders for Abatement

Special Operations

Primarily Incident Response and Interagency Investigations

Source Education & Outreach

E.g., Compliance Classes/Trainings and AB 617 Meetings

CY 2022 Compliance Statistics

Count	Compliance Activity Description
335	Title V inspections completed
248	RECLAIM audits completed
3,978	Other stationary source inspections completed
3,927	PERP inspections completed
11,805	Complaints addressed
708	Breakdowns investigated
1,039	Notices of Violation issued
1,915	Notices to Comply issued

*Numbers subject to change

Complaint Response Program

- **1-800-CUT-SMOG® or online at www.aqmd.gov or via the South Coast AQMD Mobile App** (iOS/Android)
- Accept air quality complaints 24 hours a day, 7 days a week
- Common Complaints: Odors, Dust, Smoke, Retail Gas Stations, Asbestos, Residential Wood Burning, Refinery Flaring
- Complainant Information = Confidential
- Complaints can be made anonymously
- ***STAFF RESPONDS TO ALL COMPLAINTS!***

Complaints Received 2000-2022

Enforcement Actions

- Inspectors issue notices:
  - **Notice to Comply (NC)** for first-time noncompliance with administrative requirements, or to obtain records/information
  - **Notice of Violation (NOV)** for emissions-related noncompliance or repeated administrative violations
- South Coast AQMD Hearing Board: Orders for Abatement sought to stop ongoing noncompliance; can lead to curtailment
- Violations referred to South Coast AQMD Legal Department for settlement negotiations; if no settlement reached, a lawsuit may be filed in Superior Court

Examples of Recent Violations

All American Asphalt – 5 NOVs for public nuisance issued in 2022

Ethylene Oxide (EtO) Facilities – NOVs issued in 2022 to sterilization facilities in Vernon, Carson, and Ontario for rule and permit violations

Hyperion Water Reclamation Plant – 30 NOVs for public nuisance issued in 2022, plus Order for Abatement proceedings

Rendering Plants – NOVs issued to Baker Commodities in Vernon followed by curtailment proceedings before the Hearing Board

Sunshine Canyon Landfill – 28 NOVs for public nuisance issued in 2023

Incident Response

- On-call 24 hours a day, 7 days a week
- Coordinate with other government agencies (e.g., Fire Departments/ Hazmat and Public Health Authorities)
- Integration into Incident Command
- Provide support and resources including:
  - Coordinate air monitoring
  - Sample collection
  - Complaint response

High Tech Enforcement Tools

Toxic Vapor Analyzer/Photo Ionization Detector (TVA/PID)

Hydrogen Sulfide Analyzer – (Jerome Meter)

Optical Gas Imaging Camera (FLIR Camera)

Portable X-Ray Fluorescence (XRF)

Sampling – Summa Canisters, Tedlar Bags, Bulk Samples

FLIR Footage

Thank You!

Advancing Air Monitoring

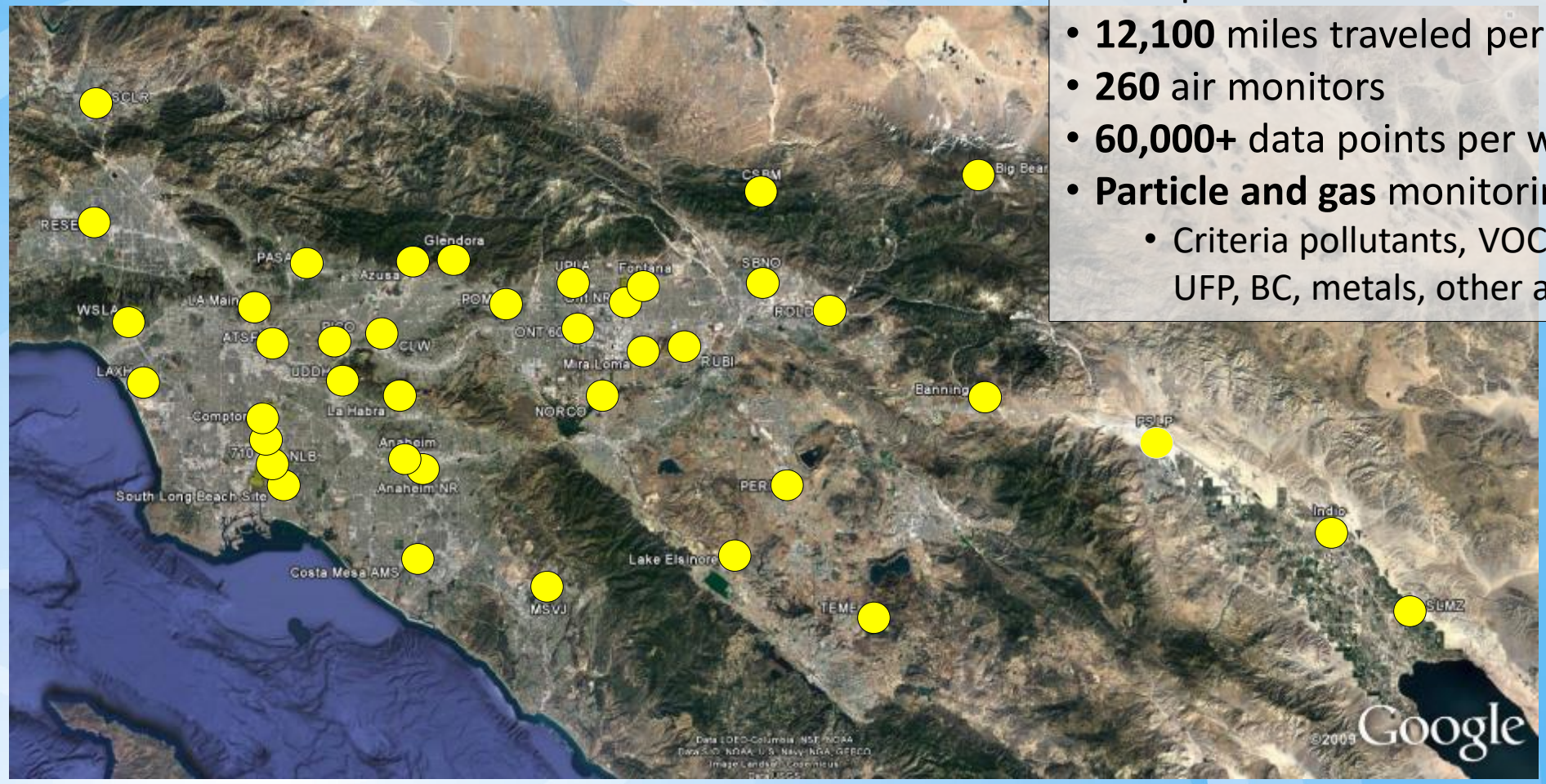
Jason Low, Ph.D.
Deputy Executive Officer
Monitoring and Analysis Division

2023 South Coast AQMD Board Retreat
May 11, 2023

Monitoring and Analysis Goals

- Operate and maintain air monitoring network for state and federal program requirements
- Provide air measurement information to the public
- Conduct community and episodic air monitoring to address specific concerns
- Provide technical support for rules development, permit processing, compliance and community capacity building

Ambient Air Monitoring Network



- **37 +** permanent air monitoring sites
- **12,100** miles traveled per week
- **260** air monitors
- **60,000+** data points per week
- **Particle and gas** monitoring
  - Criteria pollutants, VOCs, carbonyls, UFP, BC, metals, other air toxics

Laboratory Services

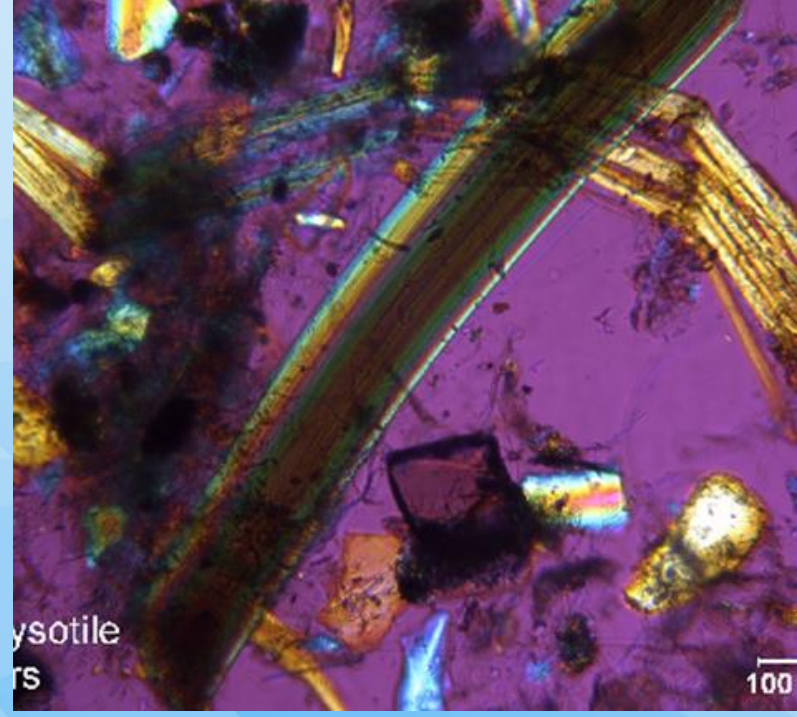
- Full-scale state of the art laboratory for sample analysis
  - ~ 10,000 VOC samples
  - ~ 1,200 microscopy/asbestos
  - ~ 1,000 compliance samples
  - Over 12,000 particulate filters
- Audited by U.S. EPA & CARB
- Annual accreditation by National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos

Laboratory Services (cont.)

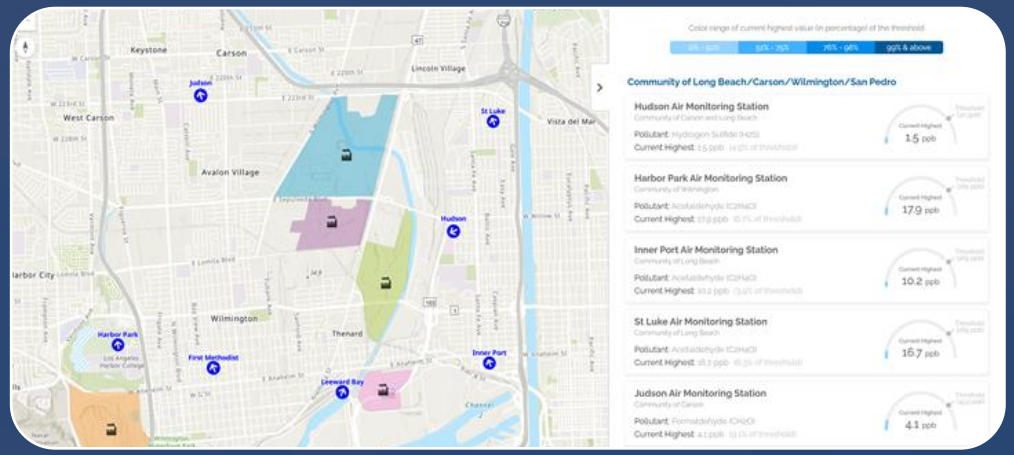
Compliance sample analysis

- VOC content (paints/coatings)
- Asbestos
- Source testing samples

Analytical method development



Refinery Fenceline and Community Air Monitoring Network (Rule 1180)



Refinery Fenceline Air Monitoring

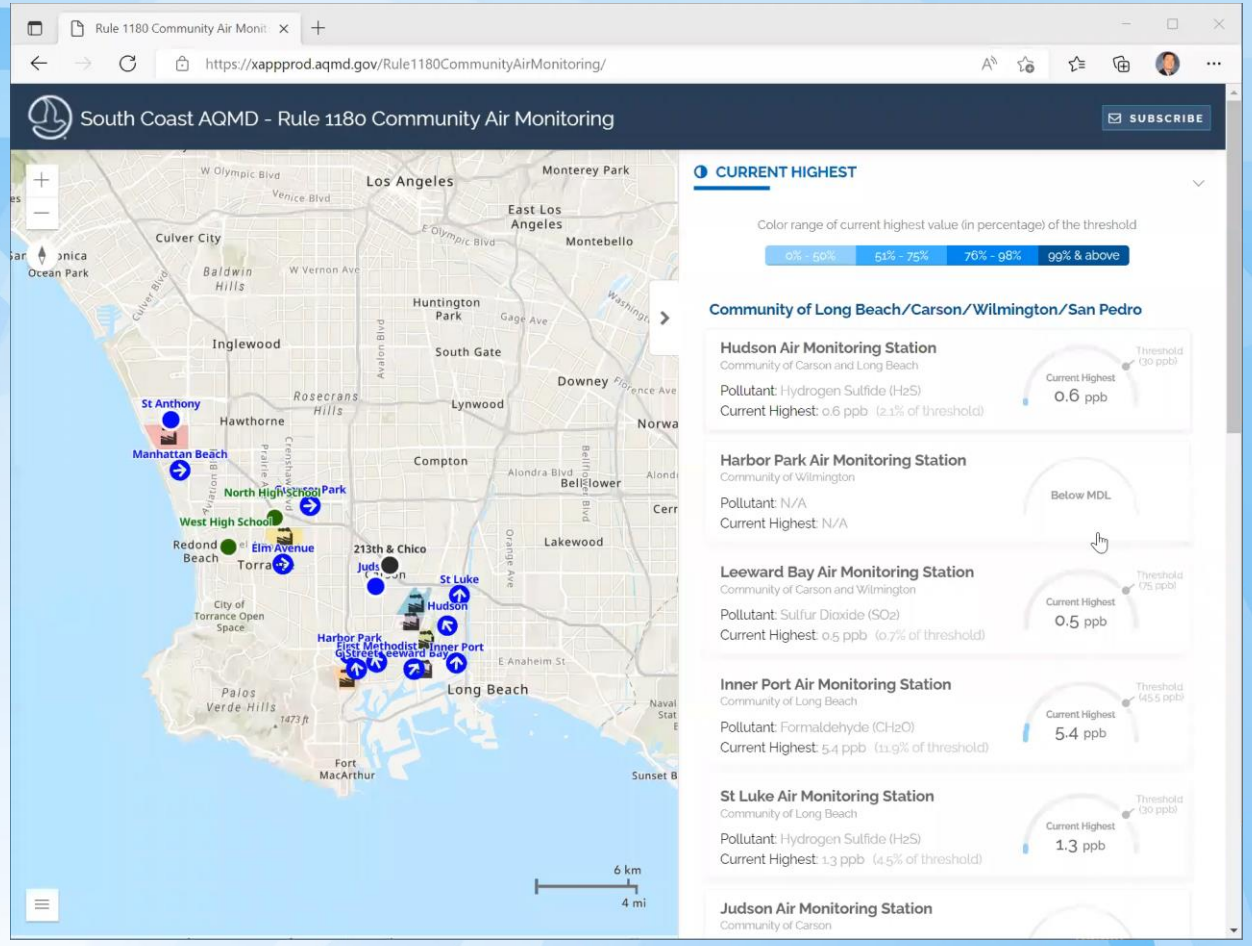
- Seven major refineries
- Real-time monitoring for all required compounds
- Dedicated public data portals and notification system

Community Air Monitoring

- 12 permanent community stations
- Real-time monitoring for all required compounds
- Dedicated public data portal and notification system

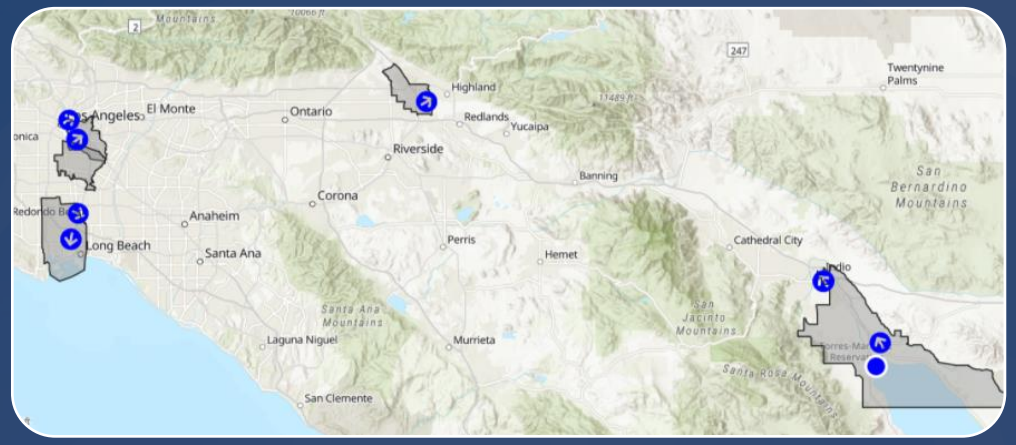
https://xappprod.aqmd.gov/Rule1180CommunityAirMonitoring/

Community Air Monitoring Data Portal



https://xappprod.aqmd.gov/Rule1180CommunityAirMonitoring/

Community Air Monitoring Programs and Special Monitoring/Incident Response



AB 617

- Localized monitoring for air pollutants in six communities of the South Coast Air Basin
- Support the development and implementation of community air monitoring plans
- http://www.aqmd.gov/nav/about/initiatives/environmental-justice/ab617-134/ab-617-community-air-monitoring

Special Monitoring/ Incident Response

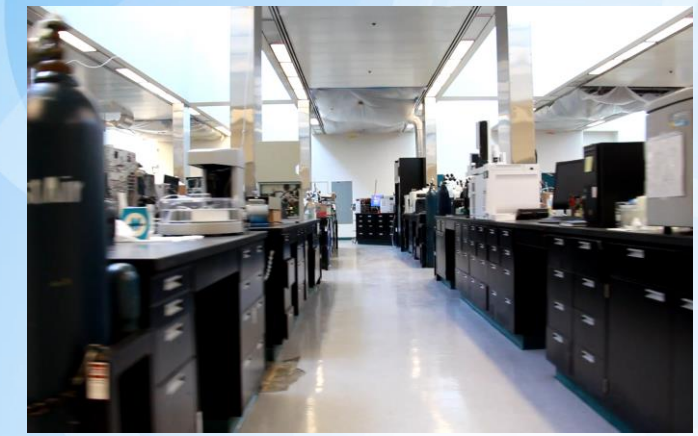
- Short term air monitoring studies to address public concerns
- Support operation activities related to incident response

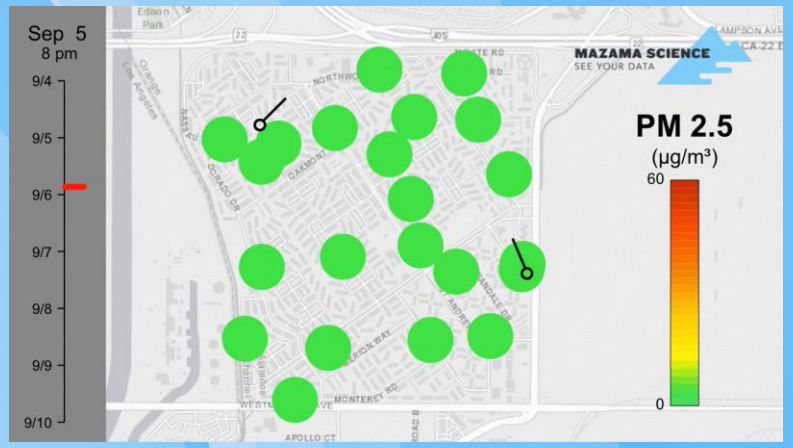
Variety of Air Measurement Methods

Field Sampling with Laboratory Analysis

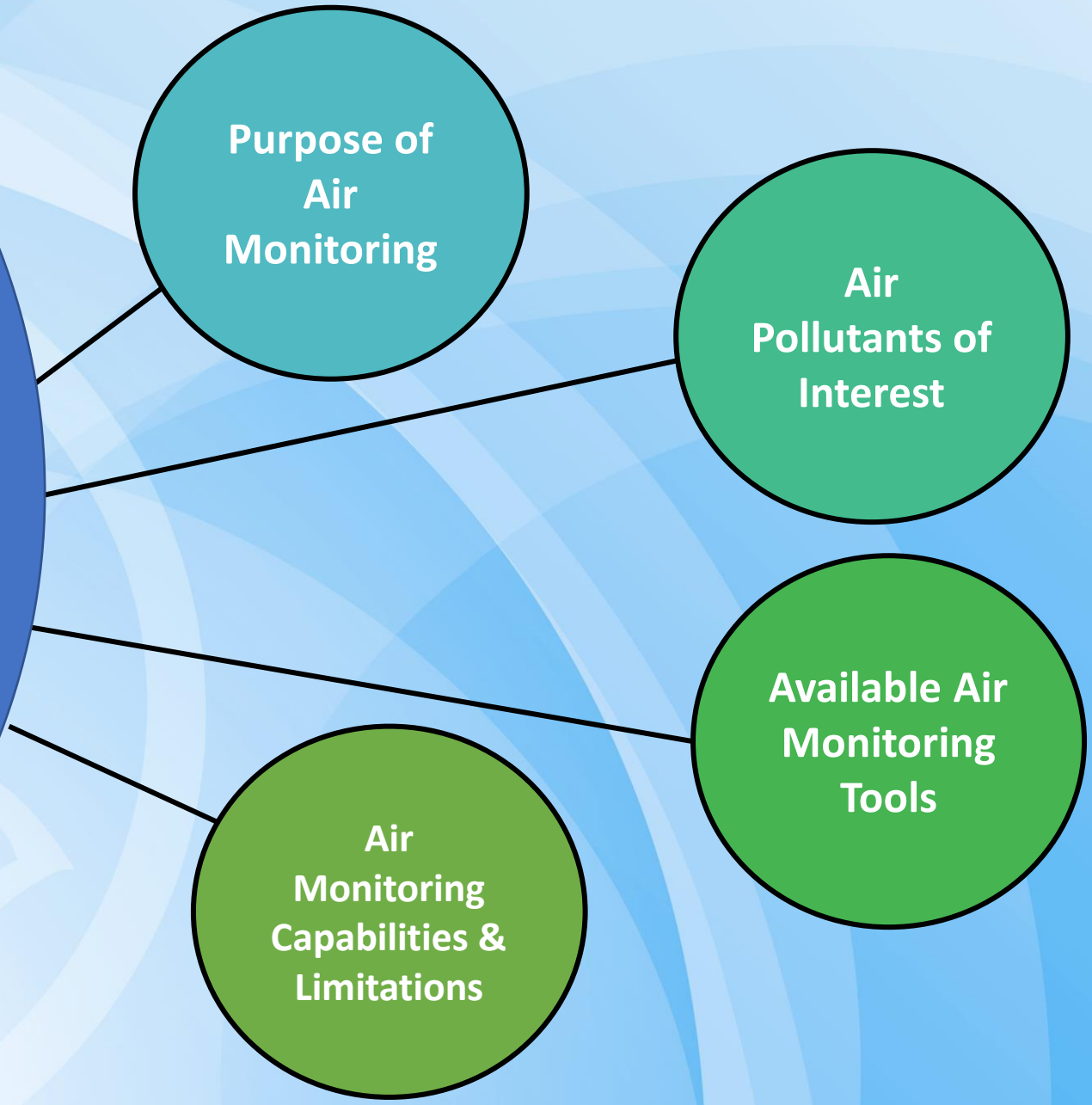
Portable and Mobile Instrumentation

Low-Cost Sensors





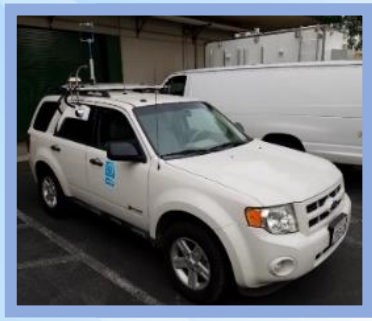
How to Select the Right Tools for Air Monitoring



General Air Monitoring Approach

Mobile Monitoring

- Survey large areas
- Identify hotspots and unknown sources
- Support inspections and enforcement actions
- Inform emission reduction efforts



Fixed Monitoring

- Provide more information about possible sources
- Assess levels in community
- Support emission reduction strategies
- Track progress

Sensors

- Provide more information about how levels vary within the community
- Complement other monitoring strategies
- Engage the community in air pollution measurement

Comprehensive and Purposeful Air Monitoring

Mobile Monitoring Platforms

Diesel PM Mobile Platform

PM, PN, BC, NOx

Truck Traffic

Railyards

Multi-Metal Mobile Platform

Particulate Metals

Metal-Processing Facilities

Auto Body Shops

Optical Remote Sensing Platform

BTEX, Total Alkanes, SO_2, HCHO, CH_4

Refineries

Oil Wells

PTR-MS Mobile Platform

VOCs

Rendering & Waste Facilities

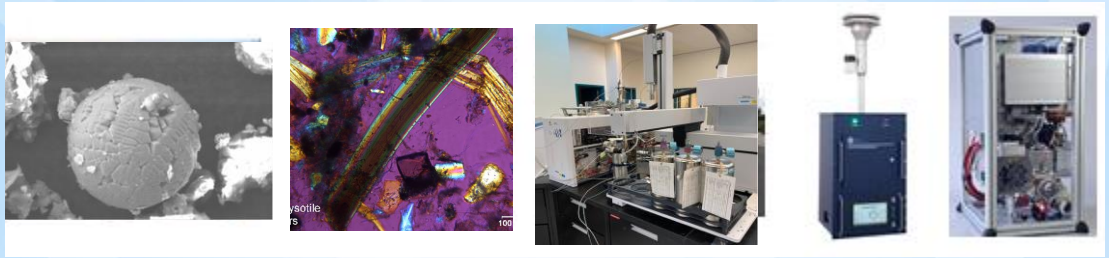
Auto Body Shops

Fixed Monitoring Options

Accepted Guidance Methods or Criteria

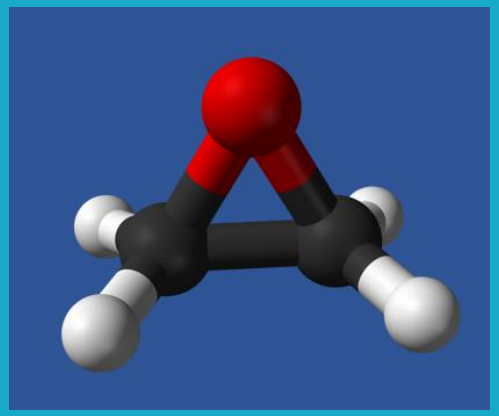
Low-Cost Sensors and Sensor Networks

Research Grade Tools



Activities Supporting AB 617 Community Air Monitoring and Air Quality Investigations

Oil Wells



Sterilization Facilities

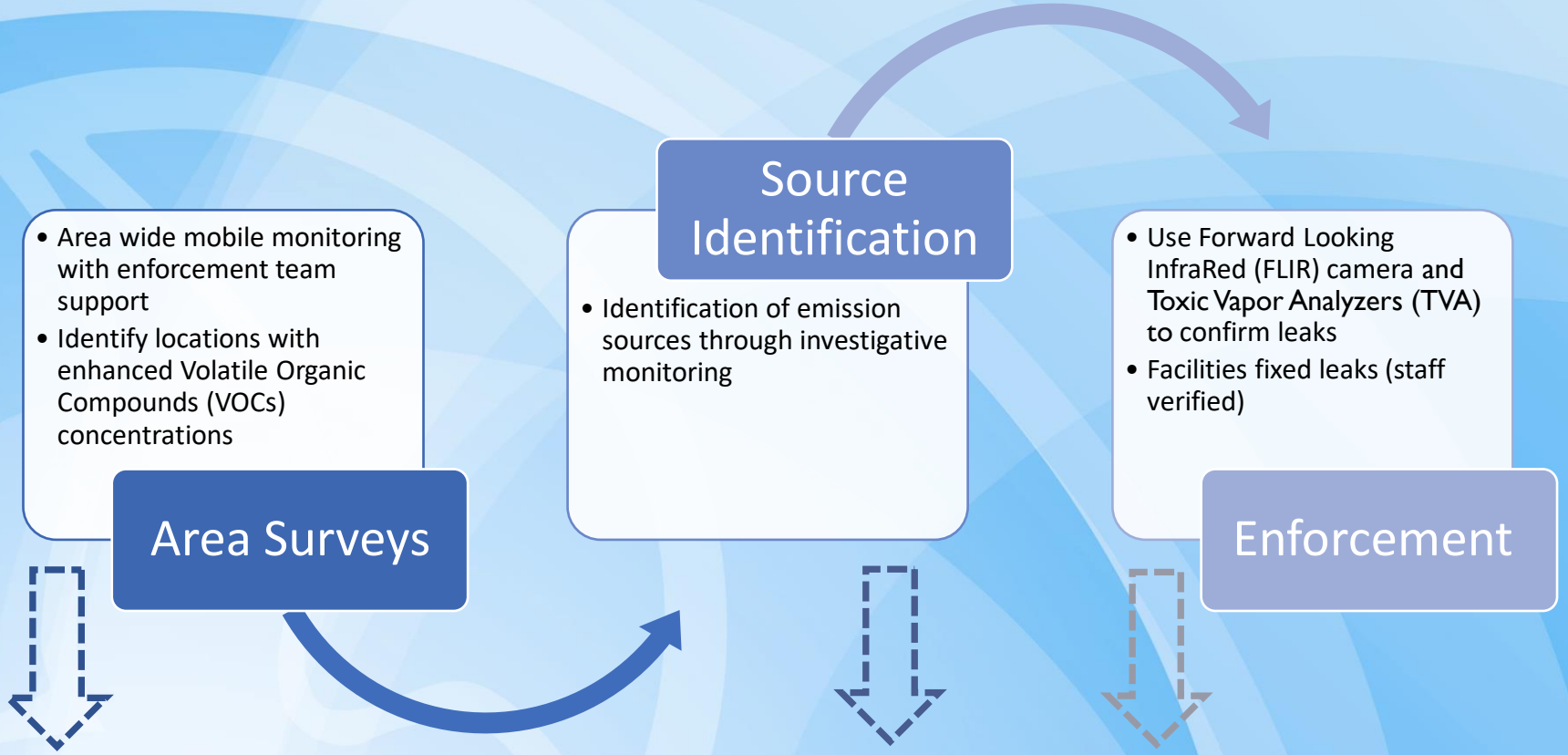
Salton Sea

Oil Wells

Wilmington, Carson, West Long Beach Community

- Purpose of air monitoring
  - Identify leaks and high emitting oil wells
  - Support enforcement actions
  - Assess community impact
  - Over 500 oil wells
- Targeted air pollutants
  - Methane, VOCs, alkanes
- Air monitoring approach
  - Optical remote sensing van
  - Optical gas imaging camera

Air Monitoring Activities Near Oil Wells



Developed prioritization based on persistency of measured VOCs enhancements, proximity to community, etc.

Continued improvements to monitoring approach, e.g., defining measurements and follow-up approach when VOCs enhancements detected

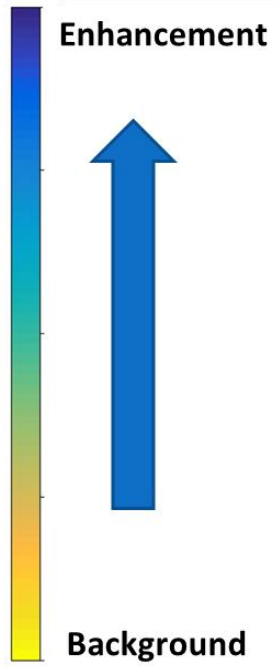
Enforcement team quickly assesses mobile monitoring findings

South Coast AQMD

Oil Wells

Wilmington, Carson, West Long Beach Community

Area D - May 3, 2022



Total Alkanes

Oil Wells

Benzene

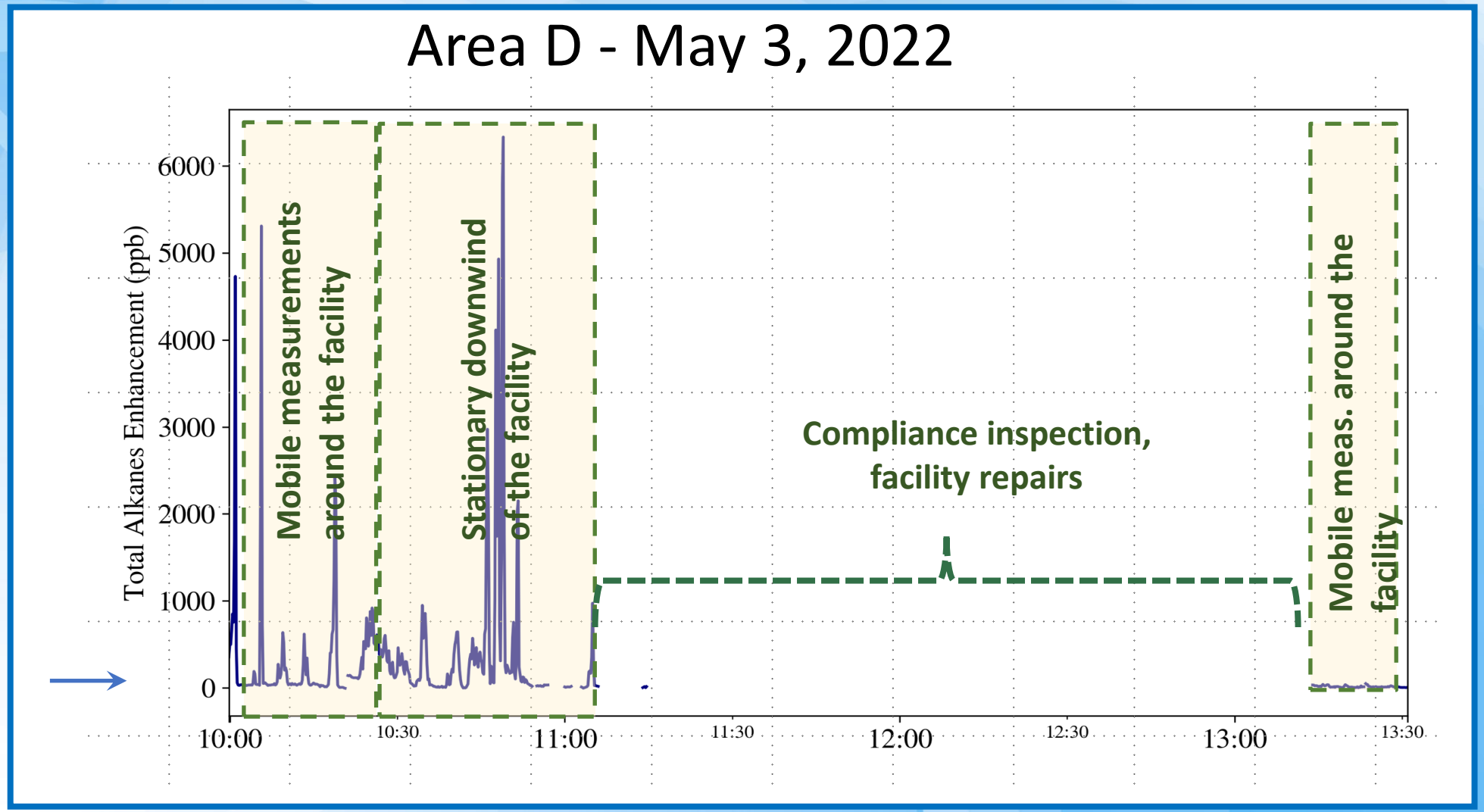
Oil Wells

Wilmington, Carson, West Long Beach Community

Example FLIR camera footage: 09/19/2019

Oil Wells

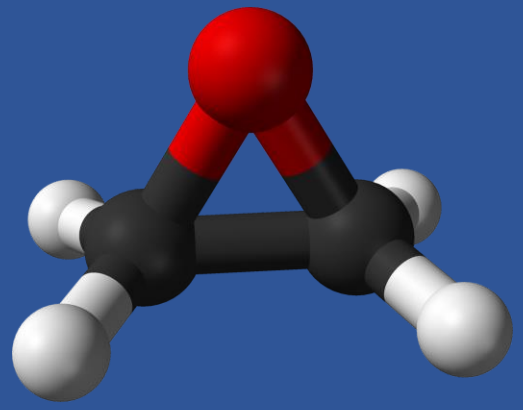
Wilmington, Carson, West Long Beach Community



Oil Wells

Wilmington, Carson, West Long Beach Community

- Measurement surveys using mobile platforms effective tool for evaluating large areas for potential hot spots of elevated VOCs
- Leaking oil wells are addressed quickly by inspectors conducting follow-up after areas of concern are identified
- Staff is working with U.S. EPA and other organizations to evaluate the FluxSense technology for other purposes such as emissions quantification



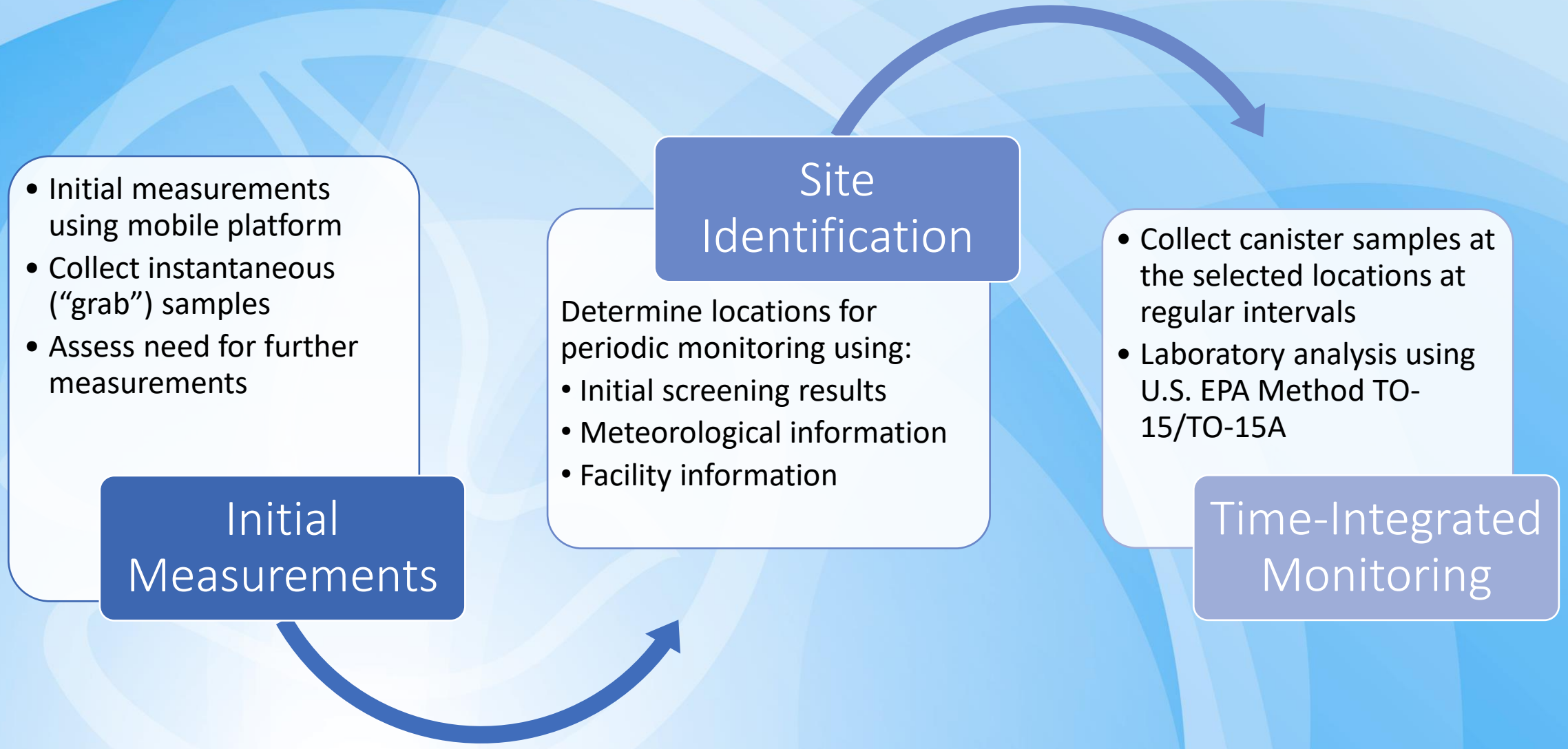
Ethylene Oxide Sterilizer Facilities

Wilmington, Carson, West Long Beach & East Los Angeles, Boyle Heights, West Commerce Communities

- Investigation currently ongoing at multiple sterilization facilities and air monitoring being conducted nearby two facilities in Vernon, one facility in Ontario, and one facility in Carson
- U.S. EPA and OEHHA recently have updated their assessment of ethylene oxide (EtO) toxicity
- Solid approach for using advanced techniques in air monitoring to enhance compliance and rule development efforts
  - Mobile platform surveys
  - U.S. EPA methods for Early Action Risk Reduction Plans

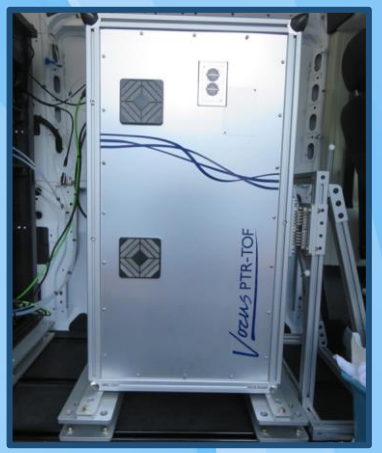
Courtesy: www.steris-ast.com

Methodical EtO Monitoring Approach

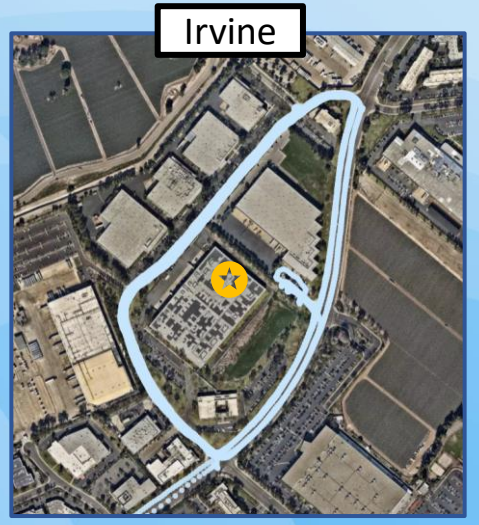


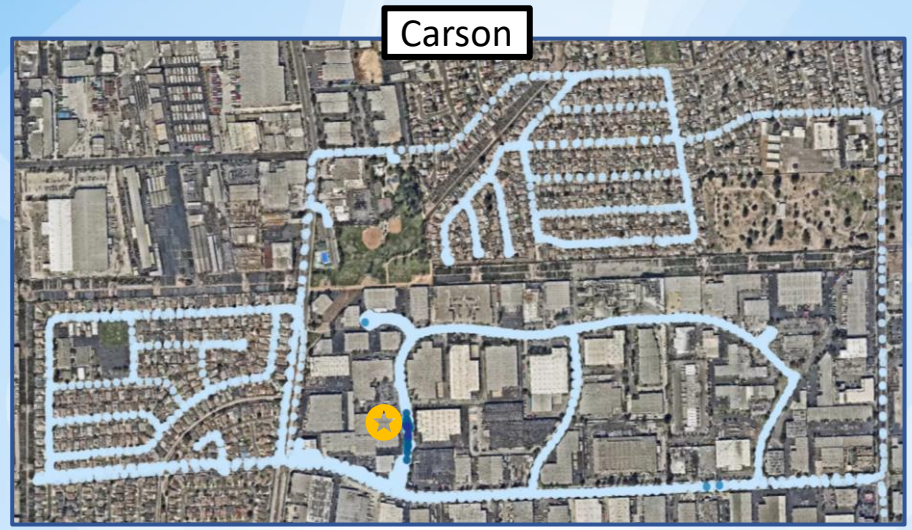
Exploratory Mobile Measurements

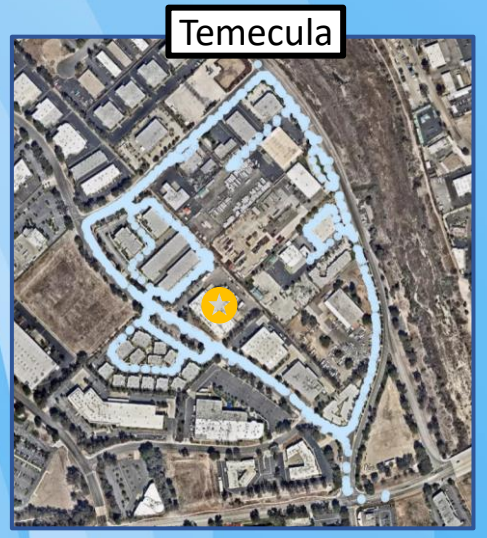
- Proton Transfer Reaction – Time-of-Flight
  Mass Spectrometer (PTR-MS) Mobile Platform
  - Real-time detection of Volatile Organic Compound (VOC) signals, including signals associated with EtO
- Measure near the facility, in upwind and downwind areas, and in nearby communities
- If enhanced EtO-related signals are detected, grab samples are collected for confirming and quantifying EtO levels using laboratory analysis

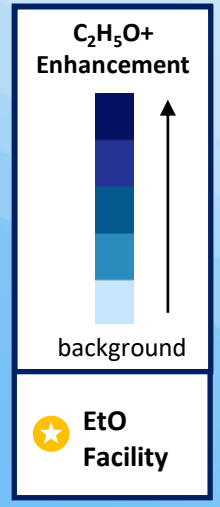


Initial Mobile Measurements

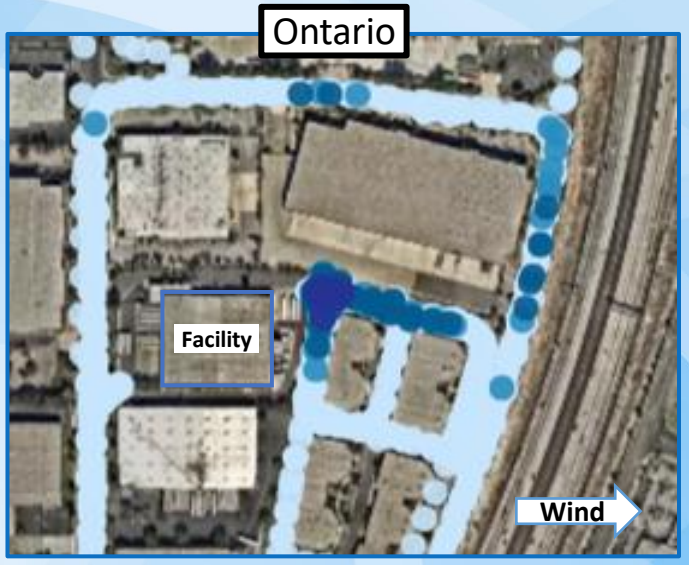


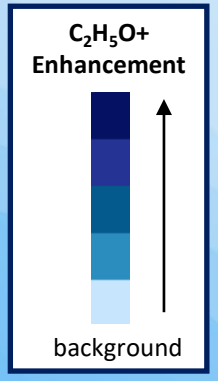


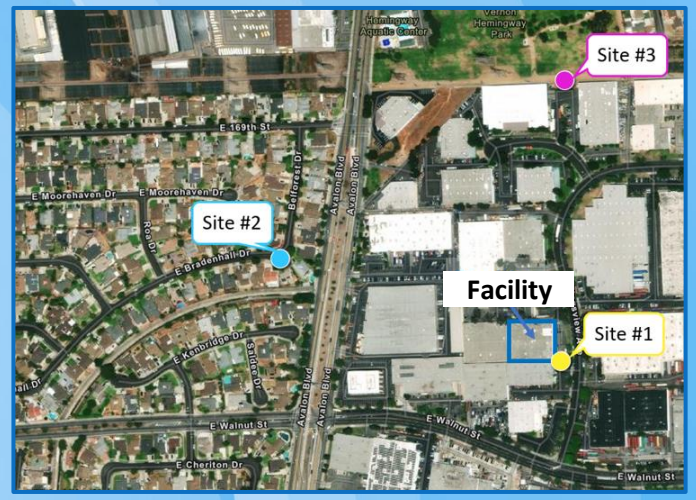


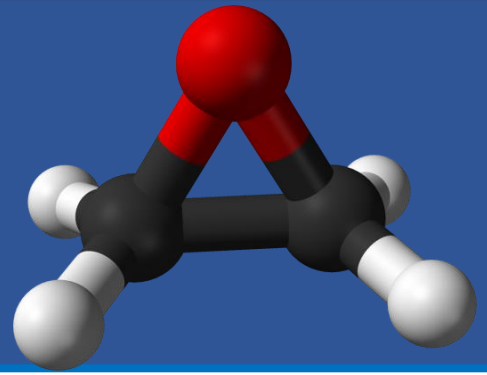


Monitoring Site Identification









Ethylene Oxide Sterilizer Facilities

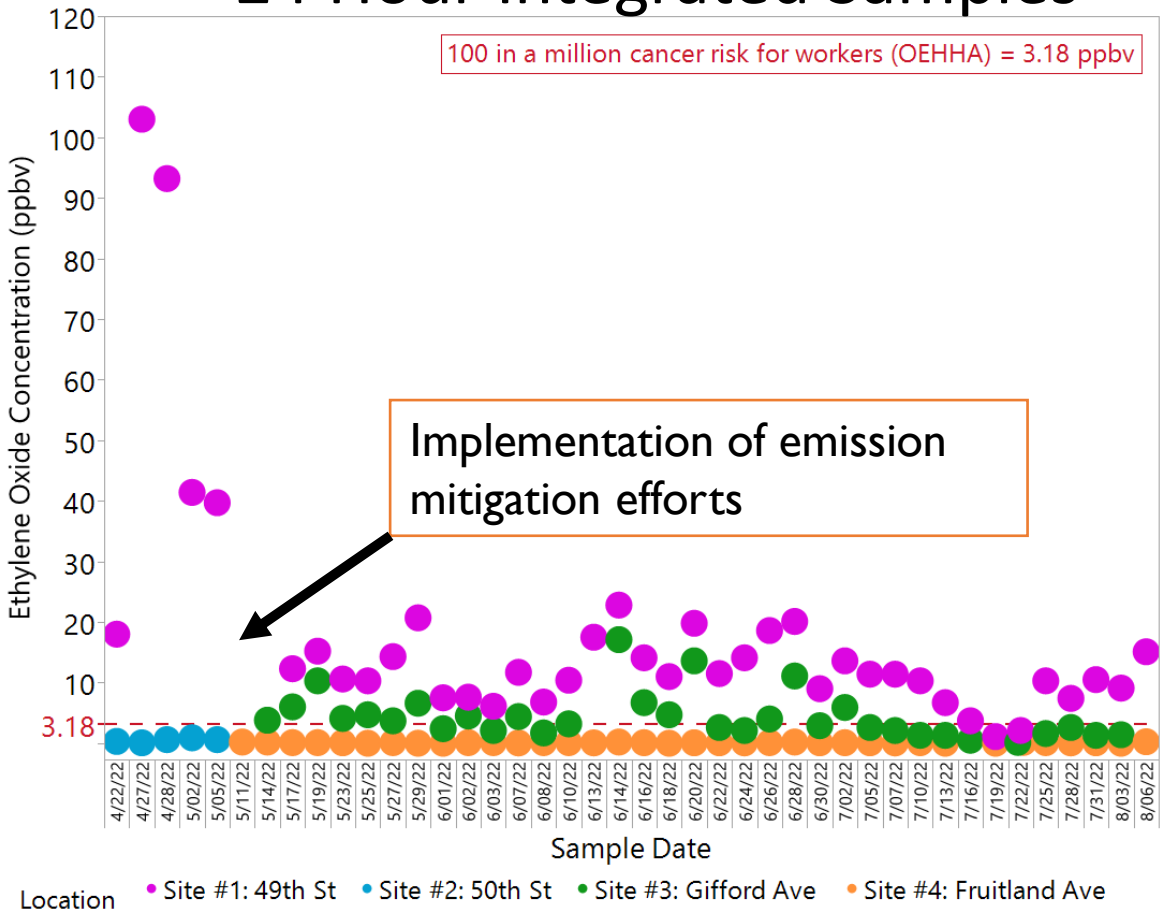
Wilmington, Carson, West Long Beach & East Los Angeles, Boyle Heights, West Commerce Communities

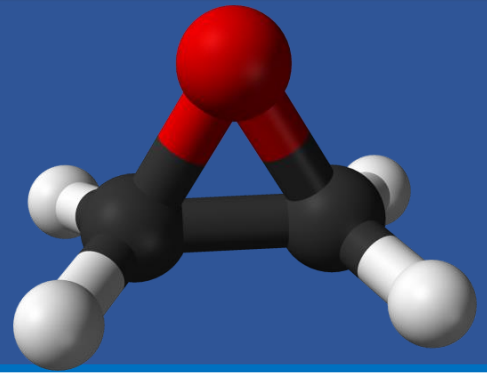
Sampling Locations

Background EtO: less than 0.17 ppbv

- http://www.aqmd.gov/home/eto

24 Hour Integrated Samples

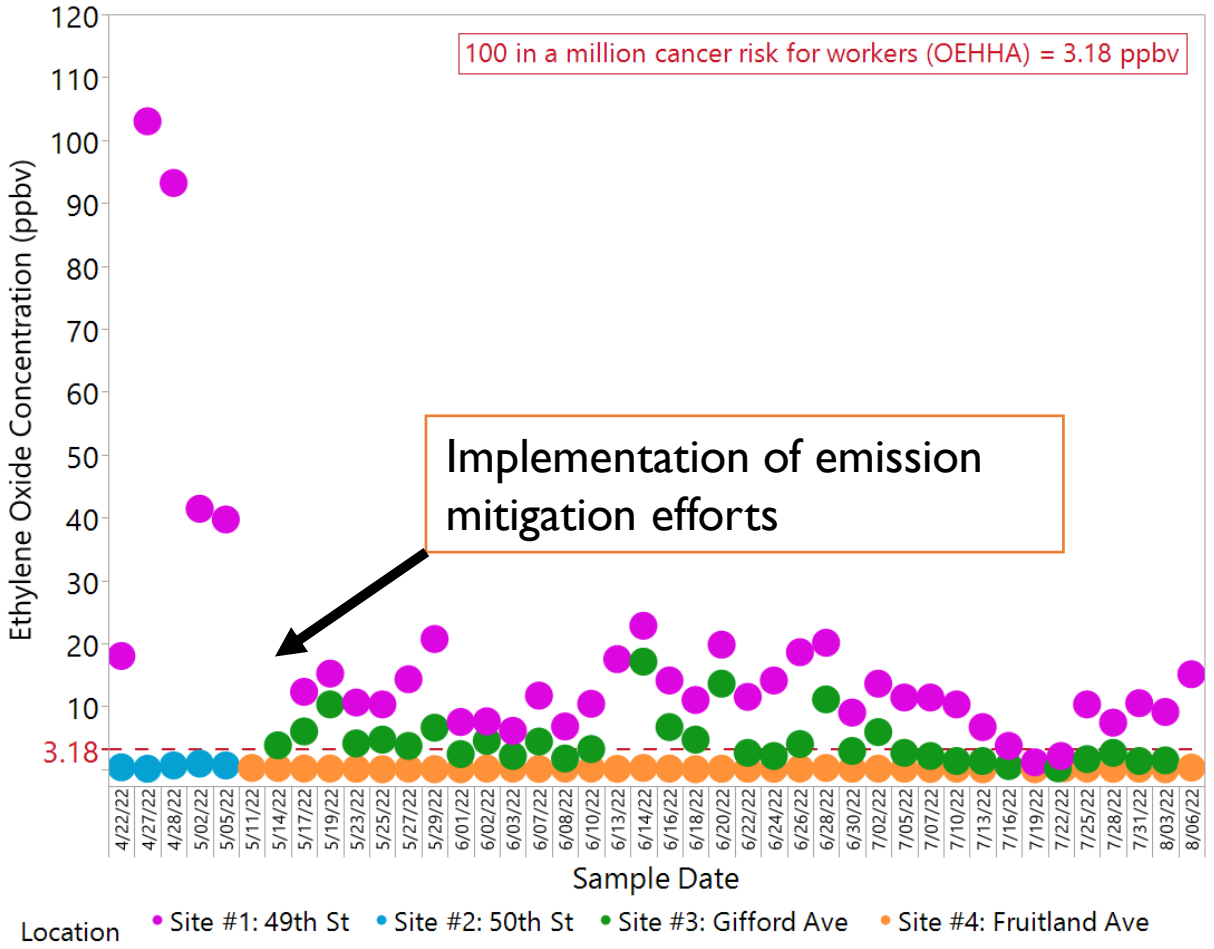




Ethylene Oxide Sterilizer Facilities

Wilmington, Carson, West Long Beach & East Los Angeles, Boyle Heights, West Commerce Communities

- Sampling and analysis based upon U.S. EPA TO-15 methods
- Air monitoring results show that EtO levels drop off significantly a few hundred feet away from the source
- EtO levels at near the residential community (~600 feet away) is at background levels
- Elevated health risk at neighboring off-site worker locations
- Multiple actions taken to reduce emissions



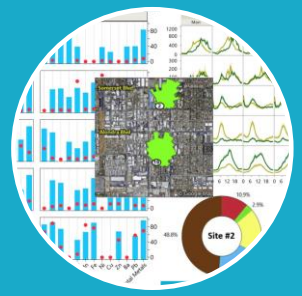
Salton Sea

Eastern Coachella Valley

MONITORING STRATEGIES TO ADDRESS PM/DUST

PM Monitoring Network

Air Quality Sensor Network



PM/Dust Characterization and Source Apportionment

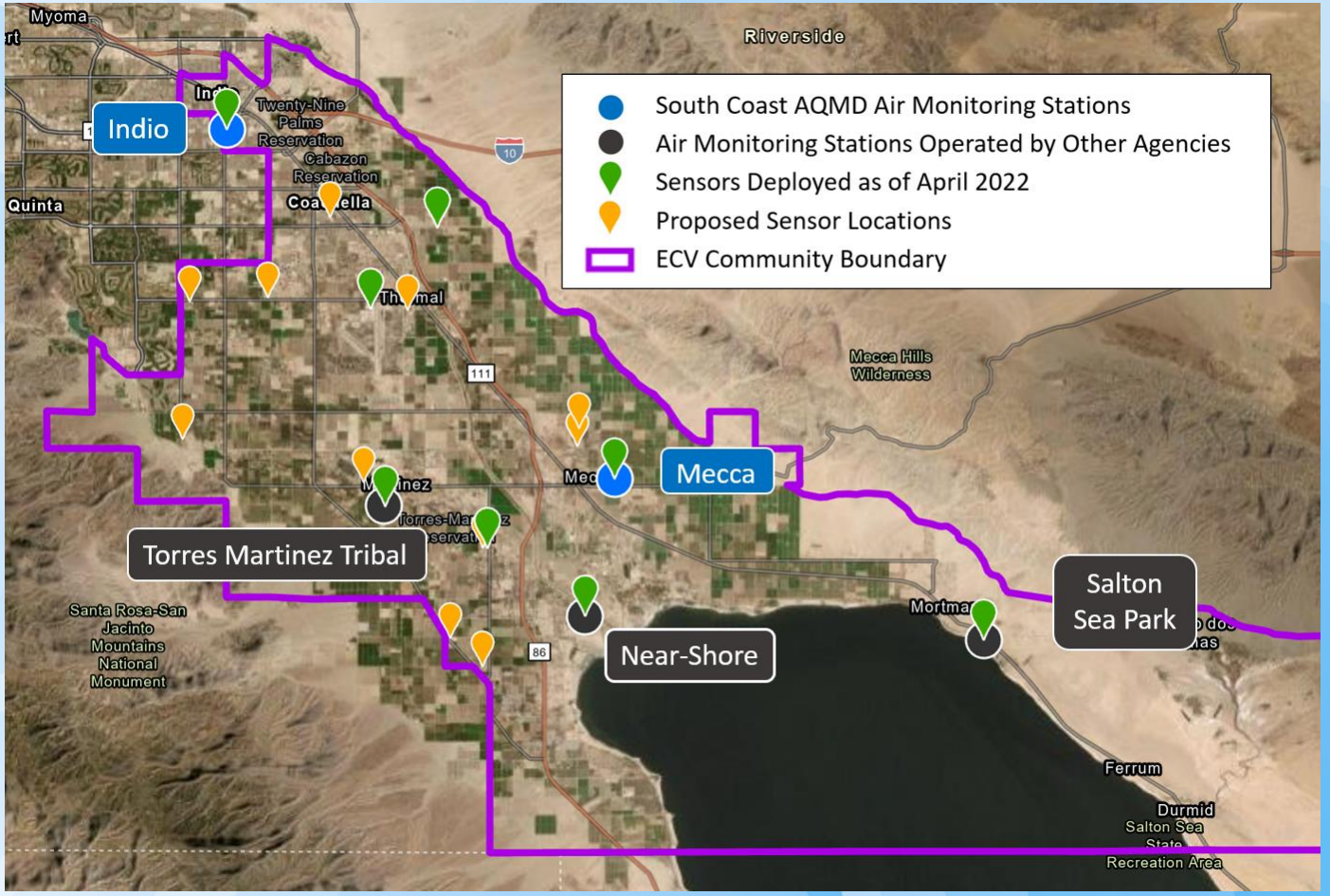
Salton Sea

Eastern Coachella Valley

Location of Monitoring Stations And Air Quality Sensors

Station Name	Operated By	Monitored Pollutants	Added Monitors
Indio	South Coast AQMD	Ozone, PM2.5, PM10	H2S
Mecca (Saul Martinez Elementary School)	South Coast AQMD	H2S, PM10	PM2.5, BC, TC, POC,O3, NO2, NH3
Torres-Martinez Tribal	Torres-Martinez Cahuilla Indians	PM10	
Salton Sea Near Shore	Imperial Irrigation District	H_2S*, PM2.5, PM10	
Salton Sea Park	Imperial Irrigation District	PM2.5, PM10	

BC = Black Carbon
TC = Total Carbon
POC = Particulate Organic Carbon
* H2S monitor operated by South Coast AQMD

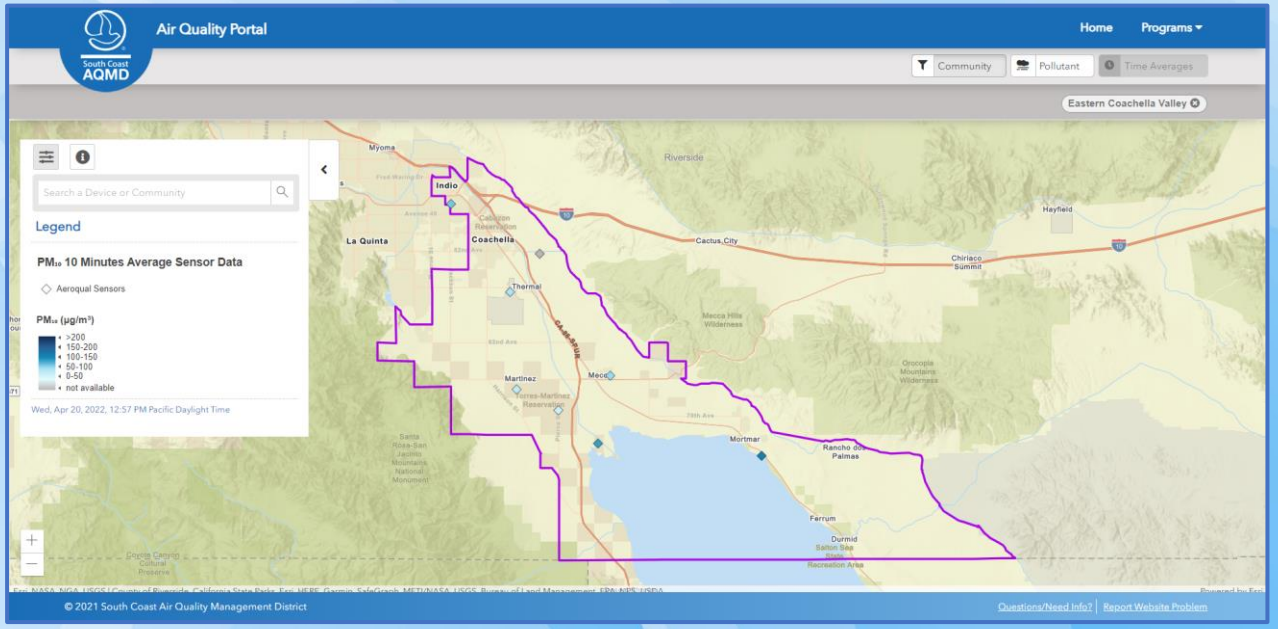


AB 617 monitoring page for ECV: http://www.aqmd.gov/ab617/monitoring/ecv
Access to real-time air monitoring data: http://www.aqmd.gov/ab617-data-display-tool/ecv
Access to real-time air quality sensor data: https://aqportal.aqmd.gov/

Salton Sea

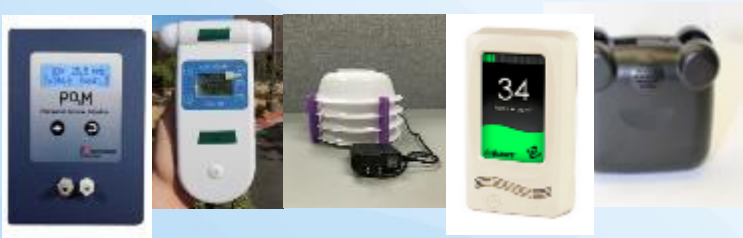
Eastern Coachella Valley

- Collaborating with CSC monitoring working group to deploy air quality sensors
- Outreaching to partner in community science
- Creation of sensor data platform



https://aqportal.aqmd.gov/

Air Quality Sensor Performance Evaluation Center (AQ-SPEC)



- Internationally renowned program for field and laboratory evaluation of “low-cost” sensors
- Sensor network development and deployment in communities
- Development of educational and visualization tools (e.g. air sensor toolbox for communities)
- Upcoming sensor library program in AB 617 communities

Competitive Grants Awarded for Advancing Air Monitoring

Agency / Program	Title	Year Awarded	Amount
U.S. EPA / Community Scale Air Toxics	Evaluation of Next Generation Air Monitoring Methods and Techniques for Characterizing Hazardous Air Pollutants Around Large-scale Industrial Facilities and In Surrounding Communities	2015	$569,682
U.S. EPA / STAR*	Engage, Educate, and Empower California Communities on the Use and Applications of "Low-cost" Air Monitoring Sensors	2016	$749,820
NASA (RTI Pass through)	NASA Roses Citizen Science	2018	$452,776
DOE (Newport Partners Pass through)	Develop Test Standard-Indoor AQ Sensors	2018	$56,106
U.S. EPA / Community Scale Air Toxics	Design and Development of a Novel Mobile Platform for Time-resolved Air Toxics Measurements	2020	$749,624
U.S. EPA / STAR* (Virginia Tech Pass through)	Enabling Real-time, Low-cost Measurement of Hazardous Air Pollutants	2022	$208,187
U.S. EPA / STAR* (UCLA Pass through)	Development of a Reference Method for Open-path Remote Sensing of Air Toxics	2023	$199,949
U.S. EPA / ARP**	Enhanced Measurements of PM2.5 Chemical Composition and Size Distribution in Wilmington, CA	2023 (pending)	$500,000
U.S. EPA / ARP**	Empowering Community-based AQ Monitoring through the South Coast AQMD Sensor Library Program	2023 (pending)	$500,000

*Science To Achieve Results **American Rescue Plan

Concluding Remarks

- Multi-tiered, purposeful, and integrated approach for scientifically evaluating air quality concerns through air measurements
- Emphasizing transparency, access and understanding of air measurement data
- Empowering appropriate community science participation

Environmental Justice and Title VI Background

Martha Guzman
Regional Administrator
U.S. EPA Region 9

2023 South Coast AQMD Board Retreat
May 11, 2023

Martha Guzman

Martha Guzman was sworn in as EPA Regional Administrator for the nation's Pacific Southwest Region (Region 9) on December 20, 2021. In this role she is leading EPA efforts to protect public health and the environment for the region spanning Arizona, California, Hawaii, Nevada, the U.S. Pacific Islands territories, and 148 Tribal Nations. Her focus is on advancing President Biden and Administrator Regan's priorities in the areas of climate change, environmental justice and scientific integrity, and more broadly on achieving progress in making the air, land and water cleaner and safer for the residents of the Pacific Southwest. Notable in a region with a significant Hispanic/Latino population, Guzman is the first Latina to serve as Regional Administrator.

Martha Guzman came to this EPA position after having served as a Commissioner at the California Public Utilities Commission (CPUC) for the previous five years. Her portfolio included fiscal oversight of utilities, broadband for all, water affordability, access to clean energy programs for disadvantaged communities, and prevention of disconnections of basic utilities. She spearheaded the Interagency Solar Consumer Protection Taskforce, the Tribal Land Policy, and Covid Arrears Response. She also represented the CPUC on the California Broadband Council and the Lithium Valley Commission.

Prior to joining the CPUC Guzman served as Deputy Legislative Affairs Secretary in the Office of the Governor of California, where she worked on the legislative passage of the Human Right to Water and the Sustainable Groundwater Management Act, reorganized the Safe Drinking Water Program, and advanced climate goals related to short-lived climate pollutants and renewable energy legislation. Earlier in her career, she was Sustainable Communities program director for the California Rural Legal Assistance Foundation. She also worked for Swanton Berry Farm on human resource issues, and before that, she was the legislative coordinator for United Farm Workers.

Guzman earned a Master of Science degree in Agricultural and Resource Economics from the University of California, Davis, and a Bachelor of Science in International Economics from Georgetown University.

Environmental Justice Background at EPA Region IX

Martha Guzman
Regional Administrator

Executive Orders Addressing Environmental Justice

Executive Order 12898

Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1994)

Executive Order 14008

Tackling the Climate Crisis at Home and Abroad (2021)

Executive Order 13985

Advancing Racial Equity and Support for Underserved Communities through the Federal Government (2021)

New Executive Order 14096

Revitalizing Our Nation's Commitment to Environmental Justice for All (April 2023)

Expands definition of Environmental justice

"Environmental justice" means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

(i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.

Office of Environmental Justice and External Civil Rights - Sept 2022

Environmental Justice in Region 9

Grants

Community Liaisons

EPA EJ Integration

Supporting Gov't Partners

IRA Overview

- **The Inflation Reduction Act (IRA) makes historic investments in climate action** that are expected to reduce U.S. emissions ~40% by 2030 while supporting disadvantaged communities and the clean energy industrial base.
- **IRA investments will drive significant emissions reductions** over the next decade while also laying the groundwork for long-term decarbonization of hard-to-abate sectors.
- **EPA will play a major role in delivering these programs.** The Agency received $41.5 billion in appropriated funds and expects to receive an additional $11.7 billion in future revenue from reinstating the Superfund Tax on oil and gas production.

Inflation Reduction Act -EPA Programs

EPA received $41.5 billion in appropriations to support 24 new and existing programs. This makes EPA the second largest recipient of discretionary funding after the U.S. Department of Agriculture.

Six new EPA programs account for 98% of this total funding:

- **Greenhouse Gas Reduction Fund ($27 billion)** – Provide capital to greenhouse gas mitigation projects not currently able to access private capital, particularly in low-income and disadvantaged communities.
- **Climate Pollution Reduction Grants ($5 billion)** – Provide grants at the state, local, and Tribal level to develop plans to reduce greenhouse gas emissions and implement those plans. >one grant will go to an eligible entity in every state.
- **Environmental and Climate Justice Block Grants ($3 billion)** – Fund community-based nonprofit organizations to support a wide range of climate and environmental justice activities.
- **Reduce Air Pollution at Ports ($3 billion)** – Award rebates and grants for ports to purchase and install zero-emission technology and develop climate action plans.
- **Methane Emissions Reduction Program ($1.55 billion)** – Fund grants and technical assistance to accelerate emissions reduction from petroleum and natural gas systems. Also establish a methane waste emissions charge starting at $900 per ton in 2024 and increasing to $1,500 per ton by 2026.
- **Clean Heavy-Duty Vehicles ($1 billion) –** Provide grants, rebates, and contract support to replace heavy duty vehicles with zero emission alternatives. $400 million is specifically for nonattainment areas.

ADDITIONAL programs total $906 million

National Program Office and Program	Funding ($)
Office of Air (OAR)	**491,000,000**
Funding to Address Air Pollution - Fenceline Air Monitoring & Screening Air Monitoring	235,500,000
Low Emissions Electricity Program	87,000,000
Diesel Emissions Reductions	60,000,000
Funding to Address Air Pollution at Schools	50,000,000
Funding for Implementation of the American Innovation & Manufacturing Act on HFCs	38,500,000
Funding for Section 211(o) of the Clean Air Act (Renewable Fuels)	15,000,000
Greenhouse Gas Corporate Reporting	5,000,000
Office of Chemical Safety and Pollution Prevention (OCSPP)	**350,000,000**
Environmental Product Declaration Assistance	250,000,000
Low-Embodied Carbon Labeling for Construction Materials	100,000,000
Permitting (Multiple Offices)	**40,000,000**
Efficient, Accurate, and Timely Permitting Reviews	40,000,000
Office of Enforcement and Compliance Assurance (OECA)	**25,000,000**
Funding for Enforcement Technology & Public Information	25,000,000

KEY TAKEAWAYS

- **Many of these programs build on existing programs** and can proceed quickly through established relationships with state, local, and tribal partners.
- **OCSPP's embodied carbon programs will inform other infrastructure projects** such as roads, bridges, and ports.
- **A major investment in permitting will bolster EPA's capacity** to provide quality, timely environmental reviews and permitting for critical projects.

Environmental Justice Grant Programs

- **Thriving Communities Technical Assistance Centers (TCTAC)** - selections made, expected operational by late summer ‘23
- **Collaborative Problem-Solving Cooperative Agreement (CPS)** and **Government to Government (G2G)** - competitions closed, under review
- **Environmental Justice Thriving Communities Grantmaker (Pass–Through) Program** – competition open, Deadline June 30th, 2023
  - Subaward **Environmental Justice Grants** – once Grantmakers are established
  - https://www.epa.gov/environmentaljustice/environmental-justice-thriving-communities-grantmaking-program
- **Environmental and Climate Justice Grants Program** – request for information closed, program being designed, expected open late summer ’23
  - https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-environmental-and-climate-justice-program

EJ Thriving Communities Technical Assistance Centers

- Expected to be operational by late summer ’23:
  - University of Arizona
  - San Diego State University
- **Who can receive services from centers:**
  - All community stakeholders, including underserved communities
  - Community residents
  - Nonprofit organizations
  - Grassroots organizations
  - Local and State government entities
  - Tribal government entities

EPA Region 9 TCTACs

SDSU | San Diego State University

- SDSU Community Climate Action Network (academic)
- Environmental Protection Network (industry)
- Center for Creative Land Recycling (non-profit)
- University of San Diego's Energy Policy Initiatives Center (academic)
- Institute for Tribal Environmental Professionals (tribal)
- Desert Research Institute (non-profit)
- Climate Science Alliance (non-profit education)
- Pacific RISA (research)
- University of Guam's Center of Island Sustainability (academic)
- Public Health Alliance (non-profit)
- Arizona State University (academic)

THE UNIVERSITY OF ARIZONA

- Sonoran Environmental Research Institute (SERI) (AZ non-profit)
- Public Health Institute (PHI) (CA non-profit)
- University of Southern California (USC) (CA academic)
- Larson Institute for Health Impact and Equity (NV academic)
- Hawaii Public Health Institute (HIPHI) (HI non-profit)

IRA Environmental & Climate Justice Grant Program

- ~$2 billion available
- Program Guidance expected mid-Summer 2023

Eligible Entities:

- A partnership between—
  - an Indian tribe, a local government, or an institution of higher education; and
  - a community-based nonprofit organization;
- A community-based nonprofit organization; or
- A partnership of community-based nonprofit organizations.

https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-environmental-and-climate-justice-program

IRA Environmental and Climate Justice Grant Program: Eligible Activities

- Community-led air and other pollution monitoring, prevention, and remediation, and investments in low- and zero emission and resilient technologies and related infrastructure and workforce development that help reduce greenhouse gas emissions and other air pollutants;
- Mitigating climate and health risks from urban heat islands, extreme heat, wood heater emissions, and wildfire events;
- Climate resiliency and adaptation;
- Reducing indoor toxics and indoor air pollution; or
- Facilitating engagement of disadvantaged communities in State and Federal public processes, including facilitating such engagement in advisory groups, workshops, and rulemakings.

IRA Climate Pollution Reduction Grants

- $250 million for Climate Pollution Reduction (CPR) Planning Grants with at least one grant to an eligible entity in every state; noncompetitive.
- Eligible entities: States, air agencies, municipalities, Tribes. In South Coast:
  - County of Los Angeles
  - San Bernardino County Transportation Authority (SBCTA)
  - At least 6 Tribes in the South Coast area have notified EPA of interest
- Plans shall include programs, policies, measures, and projects that will achieve or facilitate the reduction of greenhouse gas air pollution.
- $4.6 billion for competitive CPR implementation grants. Activities must be covered in a plan developed with funding from a CPR planning grant. Program Guidance coming this Fall!

www.epa.gov/inflation-reduction-act/climate-pollution-reduction-grants

IRA Greenhouse Gas Reduction Fund

- Zero Emission Technologies Competition
- $7 billion in competitive grants to states, tribes, municipalities, and eligible non-profit entities
- For deployment of residential rooftop solar, community solar and associated storage and upgrades in low-income and disadvantaged communities

- General and Low-Income and Disadvantaged Communities Competition
- $20 billion for competitive grants to eligible non-profit entities
- Enable investments in projects that reduce pollution and lower energy costs – particularly in low-income and disadvantaged communities.

https://www.epa.gov/inflation-reduction-act/greenhouse-gas-reduction-fund

IRA Mobile source programs overview

- Clean Heavy-Duty Vehicles: $1B for zero-emission Class 6 and 7 vehicles, infrastructure, and workforce development.
  - https://www.epa.gov/inflation-reduction-act/clean-heavy-duty-vehicle-program
- Ports: $3B for zero-emission port equipment, related planning and permitting, or to develop climate action plans
  - https://www.epa.gov/inflation-reduction-act/clean-ports-program
- Technical Request For Information: Open Through June 5, 2023

BIL Clean School Bus Funding

Summary: Clean School Bus Rebate Program

- In 2022, R9 awarded over $106 million as part of the Clean School Bus Rebates - This funding enabled the purchase of 308 clean school buses across 30 school districts
- South Coast Area Awardees Included: Compton Unified School District (25), Palisades Charter High District (10), Montebello Unified (25), Los Angeles County Office of Education (10), Hesperia Unified (12), Morongo School (4), Noli School (2)

Recently Announced: Clean School Bus Grants

- EPA recently announced a Notice of Funding Opportunity for the CSB Program Grants
- $400 million is available nationally, over $52 million in Region 9
- Competitive funding for the replacement of existing school buses with clean and zero-emission school buses
- Applications due to Grants.gov by Tuesday, August 22, 2023

IRA Methane emissions program overview

- Petroleum and Natural Gas Systems
- $850 million for incentives for methane mitigation and monitoring
- $700 million for incentives for methane mitigation from marginal conventional wells
- Establishes a waste emission charge ($900 to $1,500 per metric ton depending on the year) for emissions greater than 25,000 metric tons CO2e. Begins in 2024

IRA Community Air Pollution overview

- Authorized under Sections 103 and 105 of the Clean Air Act:
  - Fenceline Monitoring and Screening Air Monitoring: $117.5 million to deploy, integrate, support, and maintain fenceline air monitoring, screening air monitoring, national air toxics trend stations, and other air toxics and community monitoring. Includes Competitive Grants
  - Multipollutant Monitoring Stations: $50 million to expand the national ambient air quality monitoring network with new multipollutant monitoring stations; and to replace, repair, operate, and maintain existing monitors.
  - Clean Air Act Grants: $25 million general funding for research, development, and grants program. Guidance is out – for existing 105 grantees.
  - Other funding for sensors, wood heater emissions, methane monitoring

- Funding to Address Air Pollution at Schools: $50 million Grants to monitor and reduce air pollution and greenhouse gas emissions at schools.

Regulatory actions

Criteria Pollutant Emissions Standards for Heavy-Duty Engines and Vehicles (HD 2027)
This rule established more stringent criteria pollutant emissions standards for MY27+ heavy-duty on-highway engines and vehicles.

Phase 3 Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles (HDP3)
- This proposal includes new GHG emissions standards for MY28-32 heavy-duty on-highway vehicles, and seeks to revise existing MY27 standards to be more stringent.
- This proposal also addresses locomotives; ensuring states have the full authority allowed under the Clean Air Act to regulate emissions from in-use locomotives.

Multi-Pollutant Emissions Standards for Light and Medium-Duty Vehicles (LMDV 2027)
This proposal includes more stringent criteria pollutant and GHG emissions standards for MY27-32 light and medium-duty vehicles.

Together, the HDP3 and LMDV 2027 proposals are estimated to reduce CO_2 emissions by over 9 billion metric tons through CY2055 vs. no action.
EPA is currently requesting comments on both proposals.

Region 9: EJ in Permitting & Title VI

- We are enhancing EJ in permit work by continuing to work with state and local agencies to adopt enhanced public participation processes and to increase the accessibility of permitting information
- New interim FAQs on Title VI and permits that provides information to federal, state, and local environmental permitting programs to help them meet their responsibilities to integrate environmental justice and civil rights into relevant environmental permitting processes.
  - https://www.epa.gov/system/files/documents/2022-08/EJ%20and%20CR%20in%20PERMITTING%20FAQs%20508%20compliant.pdf
- Evaluating how to incorporate Title VI concepts into State Implementation Plan submittals

Update: Ethylene Oxide

- In April 2023, EPA proposed:
- More Stringent National Emission Standards for Hazardous Air Pollutants (NESHAP) for Commercial Sterilizers
- Comprehensive new mitigation measures that will decrease risk for workers who use EtO to sterilize products and for other people in communities near sterilization facilities
  - EPA is proposing pesticide risk reduction requirement
  - EPA is also reviewing standards for other EtO-emitting source categories
- If finalized, the NESHAP proposal would:
  - Require air pollution control technologies, practices, and procedures which have been demonstrated to reduce EtO emissions from commercial sterilizers.
  - Require continuous air pollution monitoring at the facility to ensure that pollution control equipment is operating effectively
- If finalized, Projected to cut EtO emissions from commercial sterilization facilities by 80%.
- **Thank you to AQMD for your diligence in monitoring emissions from regulated facilities and raising awareness!**

EPA Region 9 and Cal EPA EJ Enforcement Memorandum of Understanding

2023 Action Plan

- Enhanced Community Engagement
- Rapid Response Task Force
- Coordination Tool Box
- Locally-Focused Enforcement

Examples in South Coast

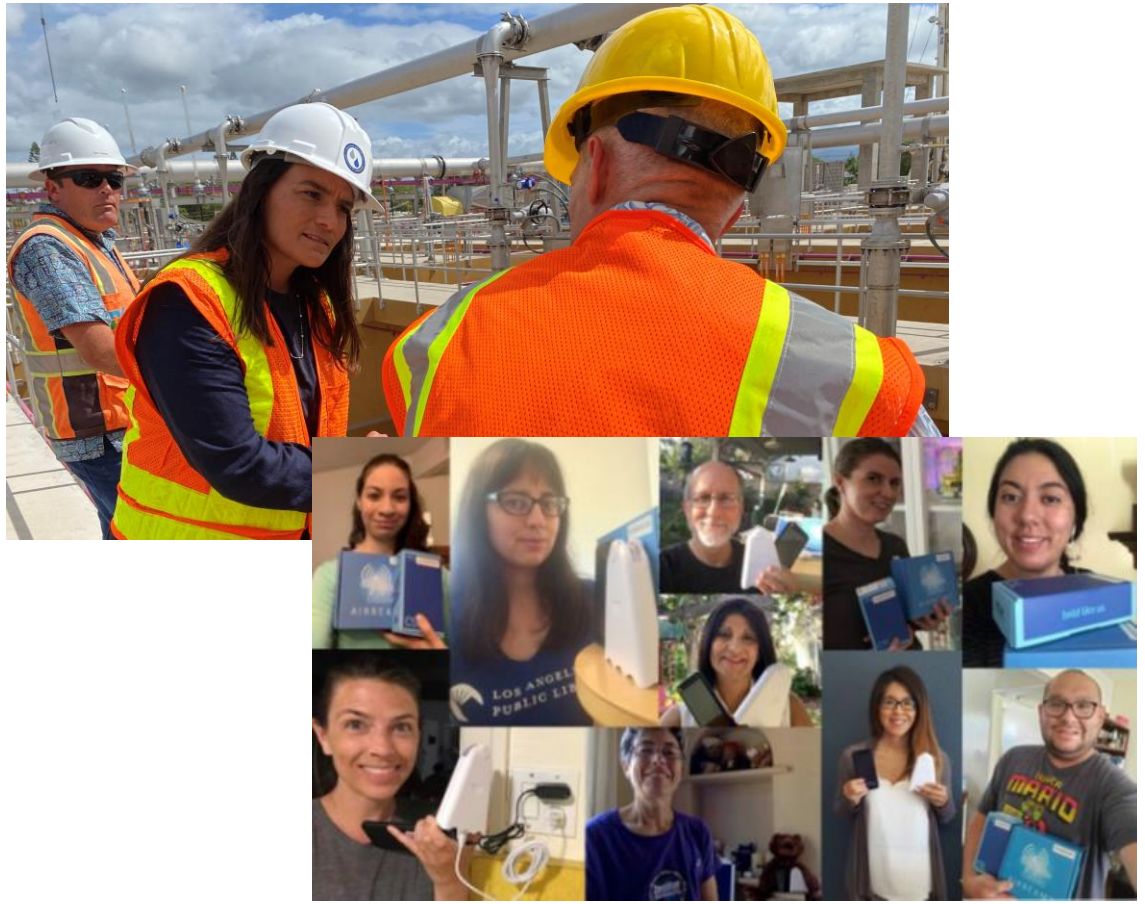
- Enhancing involvement LA EJ Enforcement Network
- Interagency factsheet on facility in Watts
- Multimedia inspection of Torrance Facility
- Eastern Coachella

Community Work in South Coast AQMD Region

- Conduct an Environmental Justice Analysis and implement enhanced outreach for EPA-issued permits in Coachella Valley
- The Community Involvement team will prioritize efforts in the disproportionately affected community near the Central Metal site in Huntington Park.
- The Air and Radiation Division will provide $100k in Regional Project Funding to SCAQMD for household air filtration in the San Bernardino near-railyard community.

Collaborations with External Partners in South Coast AQMD Region

- Remove vapors affecting residences and businesses at the Waymire site in **Los Angeles**
- Collaboration with local health departments, community groups, and others to promote a comprehensive approach to address potential residential lead contamination in **Central Metal** site in Los Angeles
- With SCAQMD, fund an electricity-powered BreathMobile in the **Inland Empire**
- Air Sensor Loan Program partnership with LA Public Libraries, making air sensors measuring PM2.5 available for checkout by **LA communities** in 20 different library branches



Agenda Item 1g. Working with Communities - Panel Discussion

Working with Communities

Panel Discussion
2023 South Coast AQMD Board Retreat
May 11, 2023

Background

- Important that we elevate the voices from community and environmental leaders
- Panel of environmental and community group leaders that have been working on air quality issues
- Purpose
  - Identify common ground on communicating as we continue to work to achieve air quality goals
  - Understand environmental and community group's air quality priorities
  - Listen to ways to enhance our communication

Community Panel

Jacquelyn Badejo

Watts Clean Air & Energy Committee
CEO Watts Clean Air

Lillian Garcia

United for Justice Inc.
Executive Officer

Yassi Kavezade

Sierra Club
Senior Campaign Representative

Mary Valdemar

San Bernardino Valley College

Question for Discussion
Community Air Quality Priorities

What do see as the highest air quality priorities for your organization and the communities you represent?

Question for Discussion
Community Air Quality Priorities

What are your ideas on how South Coast AQMD can communicate and collaborate with your organization to address air quality issues that important to the communities you represent?

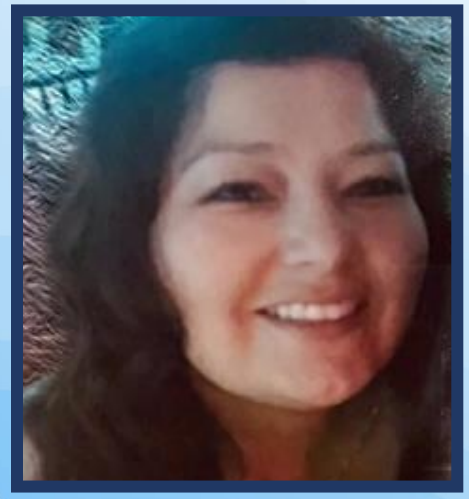
Jacquelyn Badejo

Jacquelyn Badejo is a South-Central Los Angeles native with southern and Nigerian roots. Badejo has served as a social and environmental activist and City of Los Angeles elected official for seven years and a California State Assembly (AD64) Women's Commissioner for four years. She is committed to organizational and environmental issues on a global scale. She is also well-versed in community organizing, advocacy, nonprofit industry, economic and human capital development and program and policy impact strategizing. She has provided a unique scope of transformative leadership and innovative practices and technologies that will help improve the overall quality of life. To her, the slogan, "Let's make the world great together," encompasses principles of integrity, transparency and accountability.

With a passion to empower people and create sustainable environments, Badejo looks forward to serving as a newly appointed commissioner for the Los Angeles Mayor's Climate Emergency Mobilization Office to advocate for a just transition to green industry for all amid climate change.

Badejo holds a Bachelor of Arts degree in Cinema & Television Arts and a master's degree in public administration from California State University Northridge, as well as Pursuing a doctorate in Education in Organizational Leadership from Grand Canyon University.

Lillian Garcia



Lillian Garcia was born and raised in the Coachella Valley. She is the first of her family to have completed college with a bachelor's degree and is an Environmental Justice Advocate for the Southern Border-Calexico, Imperial County to the Coachella Valle and, Riverside County. Her focus is on the Salton Sea, New River, Alamo River, Water Quality, Air Quality and Pesticides within our Region. Her research and knowledge of the environmental issues within the Region covers the health issues of community exposure and the law portion as well. She serves as a key person advocating for the Eastern Coachella Valley (ECV) for the AB 617 program and serves as a Community Steering member. One of her recent accomplishments was assisting the National Border Patrol Council Local 2554 with Locality Pay. Locality Pay was granted this year to all Federal Employees in the Imperial County within all the federal agencies, now being paid $12,000 more a year. Her diverse work not only has been empowering, community engagement with residents, but also with Federal Agents that are affected with the same issues. One of her main goals is for residents and there coming generations to be informed of the uniqueness of our Salton Sea Basin.

Yassi Kavezade

As a lifelong southern Californian, Yassi loves to protect air quality while growing green jobs and improving public health for all. She believes everyone has the right to breathe clean air and tackles policy to stop emissions from large heavy duty sources like warehouses, railyards, and the port nationally. As a national Senior Campaign Representative, she supports the Sierra Club's My Generation Campaign's team with strategies that implement zero emission solutions to grow clean air benefits sooner rather than later. In her free time she enjoys taking walks with her dog Jabba, riding her bike exploring nature, and hanging out with her very large group of friends and family.

Mary Valdemar

Mary Valdemar has been organizing in the Inland region for over 20 years. She began her journey as a student at San Bernardino Valley College (SBVC) where she learned grassroots organizing through MEChA, La Raza Unida Caucus, Parent Club, and Associated Students.

In 2012, she co-founded ChICCCAA, the Chicano Indigenous Community for Culturally Conscious Advocacy and Action, the only grassroots service cooperative in Inland territory, where she is the lead for the Village & Child Co-op. Mary works towards building the strength of several co-ops in partnership with local organizers and hosts the ChICCCAA Women's & Unity Talking Circles. She has been on the frontline for decades fighting for Environmental Justice, Indigenous rights, Abolition, Anti-racism, and land/water resistance in solidarity with many grassroots led movements through regional coalitions including Ethnic Studies IE, Kasamas Y Carnales, Indigenous D.R.U.M., Environmental Education Collaborative (EEC), AB617 Steering Committee and the Native American Community Council of San Bernardino & Riverside (NACC).

Mary currently works in the SBVC Library where she also serves the campus community within the Latino Faculty, Staff and Administrators Association, API Association, as the Chapter Political Action Coordinator of California School Employees Association (CSEA) Chapter #291 and as a delegate in the IE Labor Council. She sits on Equal Employment Opportunity, Arts Lectures & Diversity, Safe Spaces, HSI, DEIA and other committees where Equity & Inclusion are at the core of her work. She advocates with San Bernardino students, youth, parents, teachers, caregivers, and families on the issues that impact them the most. Mary also helps marginalized students with scholarships, internships and youth led advocacy projects. For more information about any of the projects mentioned, please contact Mary at mvaldema@valleycollege.edu.

Agenda Item 1h. State's Path to Zero-Emission

State's Path to Zero-Emission

Steven S. Cliff, PhD
Executive Officer
California Air Resources Board

2023 South Coast AQMD Board Retreat
May 11, 2023

Steven S. Cliff, Ph.D.

Dr. Cliff was appointed by the California Air Resources Board (CARB) as Executive Officer (EO) in Summer 2022. As EO, Cliff works with the Board to enact programs to reduce air and climate pollution. Cliff oversees the work of approximately 1,800 employees and a budget of $2.694 billion of which $564 million in State Operations and $2.130 billion in Local Assistance.

Dr. Cliff was most recently the 16th Administrator of the National Highway Traffic Safety Administration (NHTSA), where he oversaw the nation's vehicle safety agency that sets vehicle safety standards, identifies safety defects and manages recalls, and educates Americans to help them travel safely. NHTSA's work also includes establishing fuel economy regulations and helping facilitate the testing and deployment of advanced vehicle technologies including Automated Driving Systems. Cliff was appointed to NHTSA by President Biden in January 2021 and was confirmed by the U.S. Senate in 2022.

Cliff brings an extensive scientific and regulatory background to his leadership role at CARB. Prior to his appointment to NHTSA, Cliff served as the deputy executive officer at the CARB, where he first joined the staff in 2008 as an air pollution specialist. Since then, he held a variety of positions at CARB, eventually overseeing its climate program. From 2014 to 2016, Cliff was appointed by then Governor Brown to the California Department of Transportation as the assistant director for sustainability. He returned to CARB in 2016 when Governor Brown appointed him senior advisor to CARB's Board Chair.

Cliff played an active role at the University of California, Davis for nearly two decades. In 2001, he joined the school's Department of Applied Sciences as a research professor, later becoming affiliated with the school's Air Quality Research Center. Through the years, he has supported independent air quality and climate research programs while balancing his time at CARB and Caltrans, including being an approved program coordinator at the Lawrence Berkeley National Laboratory's Advanced Light Source.

Cliff received a bachelor's degree and doctorate in chemistry from the University of California, San Diego. He then completed a postdoc on atmospheric sciences at the University of California, Davis' Department of Land, Air and Water Resources.

CALIFORNIA
AIR RESOURCES BOARD

The Path to Zero Emission Technology

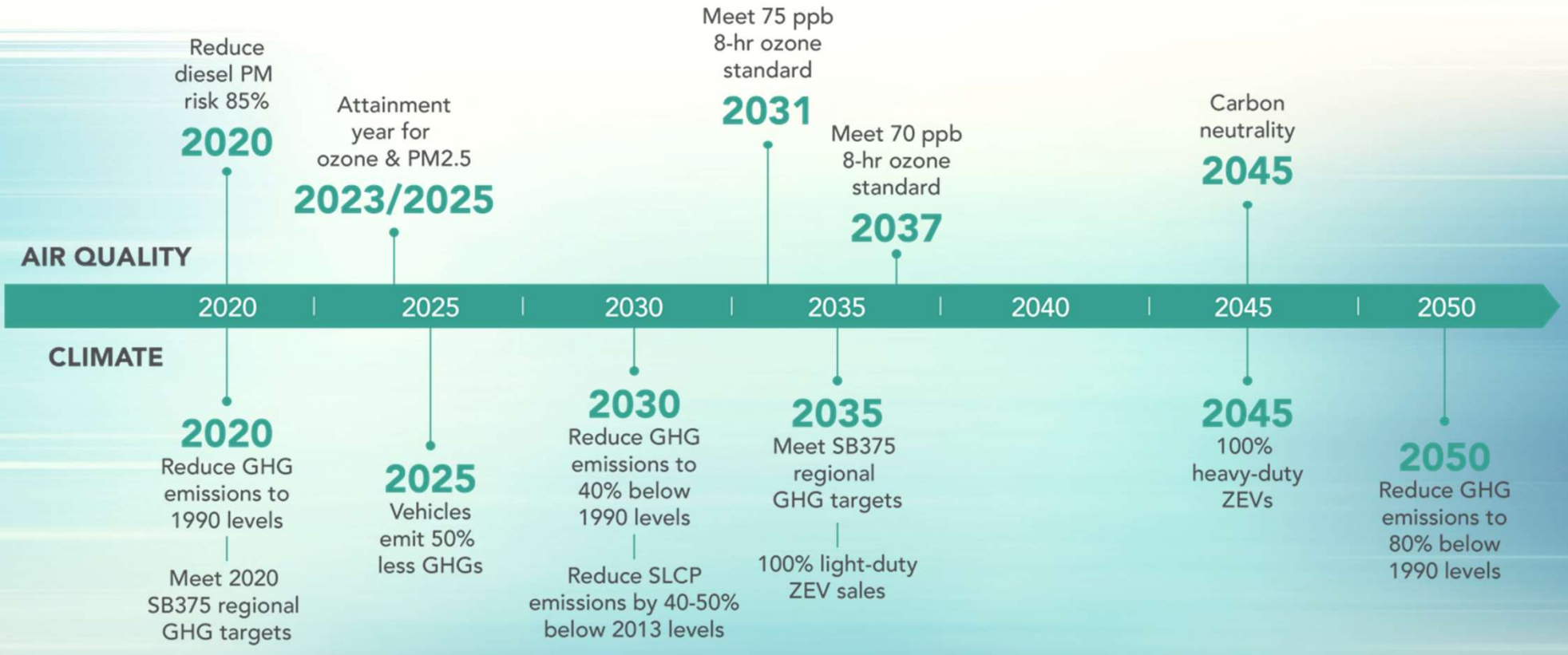
South Coast Governing Board Retreat

Dr. Steve Cliff, Executive Officer

May 11, 2023

Goals and Standards Driving towards Zero

Air Quality & Climate Change Goals



CARB

Key Targets for Transportation Sector

100% ZEV sales by 2035

Full transition to
ZEV short-haul/drayage trucks
by 2035

Full transition to **ZEV buses** &
heavy-duty long-haul trucks
by 2045*

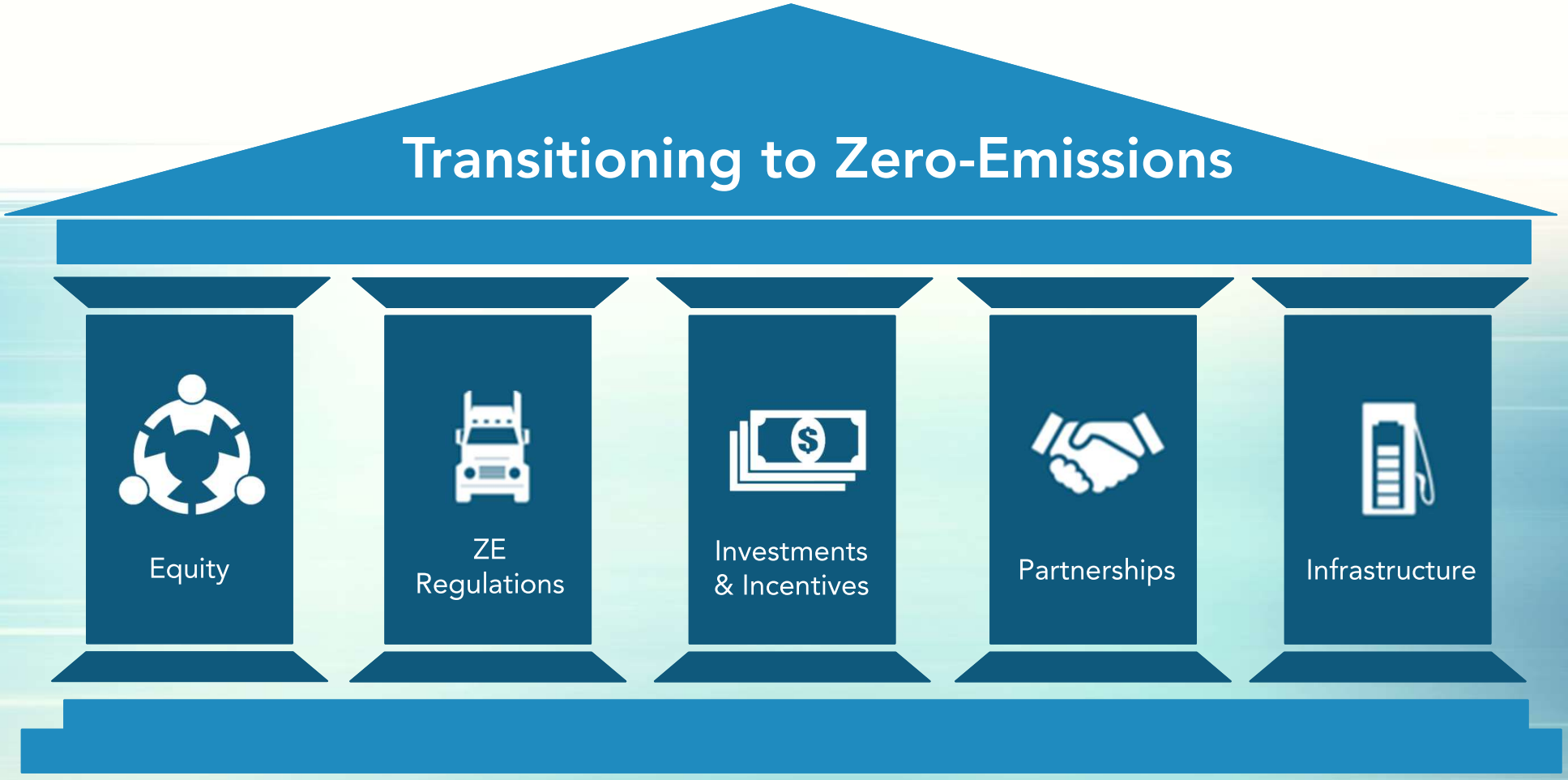
Full transition to
ZE off-road equipment
by 2035*

*where feasible

Reduced vehicle travel:
30 percent lower per capita by 2045 from 2019

CARB

Transitioning to Zero-Emissions



CARB

Investing in Zero-Emission Transportation

Proposed 2023-24 Budget

$125 million
Low-Income ZEVs

$227 million
Drayage & Transit Buses

$60 million
Communities & Clean Mobility


Equity and Engagement
CALIFORNIA
CLEAN VEHICLE
REBATE PROJECT℠

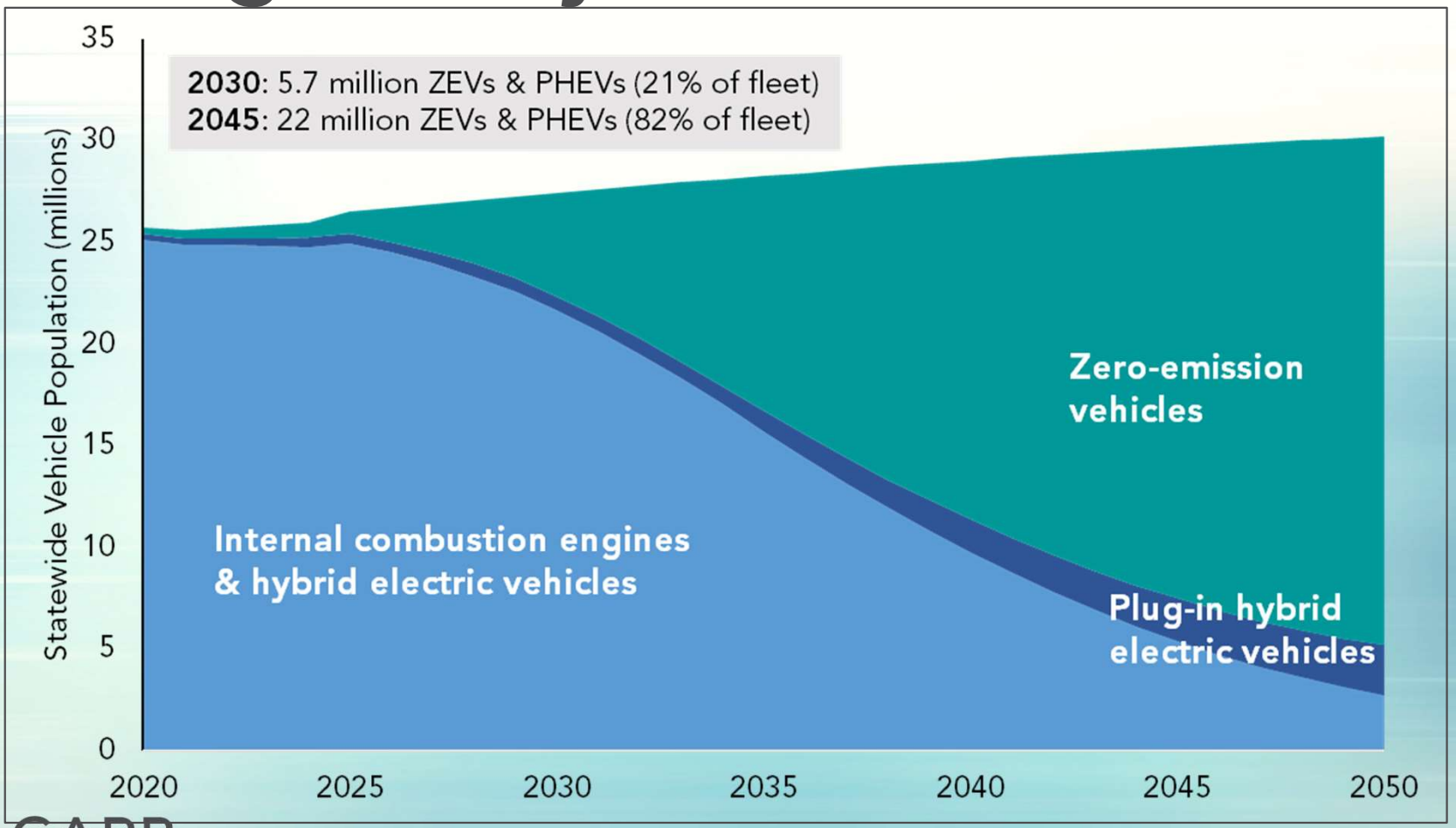
Equity and Environmental Justice

- CARB commits to prioritize and embedding equity and EJ in its zero-emissions transition

- Occurs through community engagement and outreach, incentives, development of racial equity tools, and regulatory programs

CARB Regulations towards Zero

Light-Duty Fleet Transition



CARB

Reducing Passenger Vehicle Miles Traveled is Key

Even with latest Advanced Clean Car regulations, 30 percent of cars will still burn gasoline in 2045

CARB 2022 State SIP Strategy Measure:

- Comprehensive list of new innovative VMT-reducing strategies
- Methods to evaluate cost-effectiveness of transportation-related air quality projects

CARB

Measures to Clean Up Heavy-Duty Vehicles

2018
Innovative Clean Transit

2020
Advanced Clean Trucks

2021
Heavy-Duty Inspection and Maintenance

Future
Zero-Emission Truck Measure

2019
Zero Emission Airport Shuttle

2020
Heavy-Duty Omnibus

2023
Advanced Clean Fleets

CARB

FY22-23 Heavy-Duty Project Allocations

$1.787B for Clean Truck and Bus Vouchers (HVIP)

Vouchers for zero-emission truck and buses

$273M for Clean Off-Road Equipment Vouchers Incentive Project (CORE)

Vouchers for zero-emission off-road equipment

$75M for Demos and Pilots

Funding for emerging opportunities

$60M for Demos and Pilots Projects-Commercial Harbor Craft

Funding for commercial harbor craft

$28.64M for Truck Loan Assistance

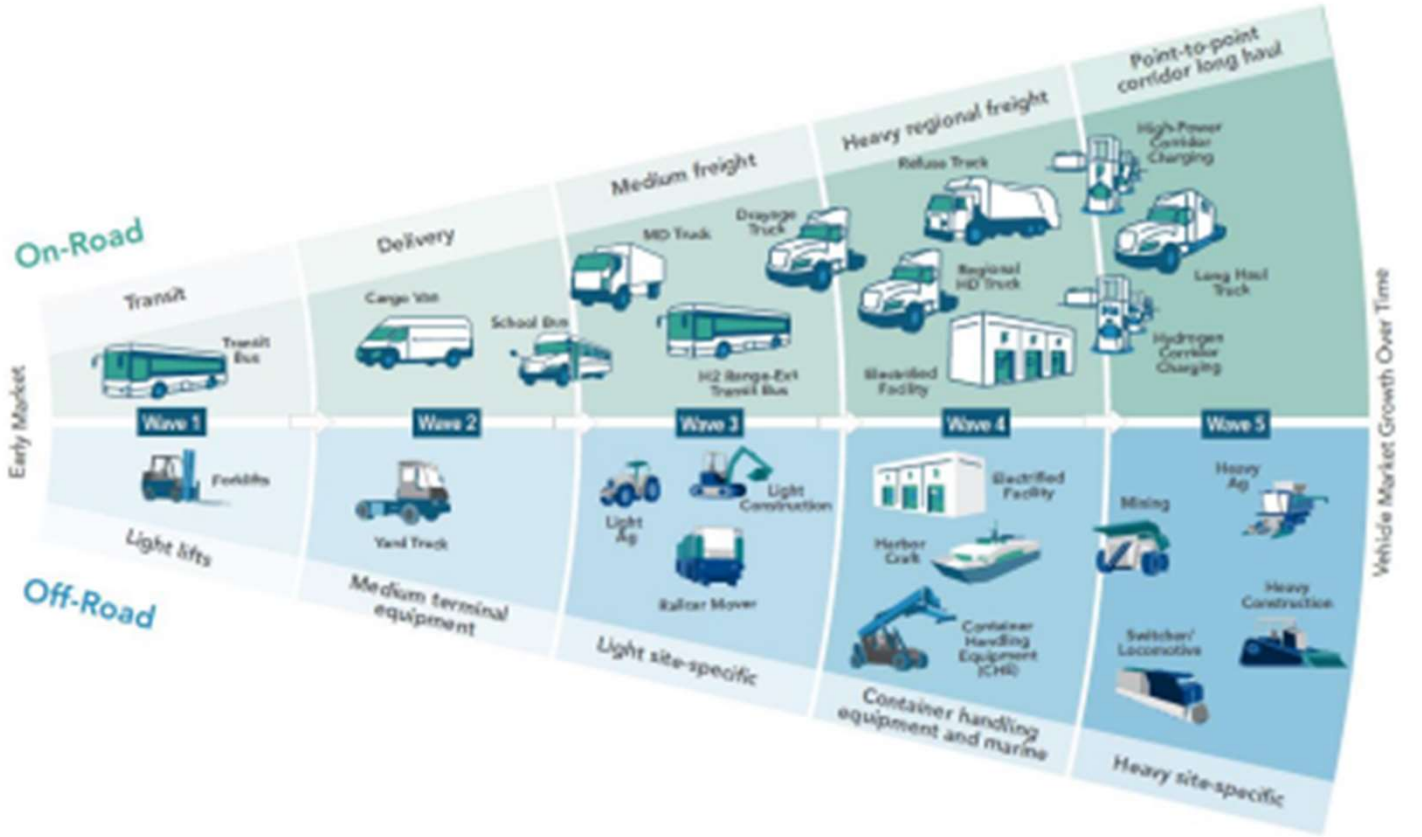
Financing for small-business fleet owners

- Includes over **$2B** for heavy-duty and off-road equipment investments
- Supports Innovative Clean Transit, Advanced Clean Fleets, and Commercial Harbor Craft Regulations
- Focus on small fleets and communities

$5M for New Zero-Emission Truck Loan Pilot

Financing for both heavy-duty ZEVs and charging/fueling infrastructure

Zero-Emission Beach-heads



Market Progress Over Time

Similar drivetrain and component sizing can scale to early near applications

Expanded supply chain capabilities and price reductions enable additional applications

Steadily increasing volumes and infrastructure strengthen business case and performance confidence

CARB

Today's ZEV Progress

VELOZ®

ELECTRIC VEHICLE MARKET REPORT

3,612,433
U.S. EV Sales

1,523,966
CA EV Sales

87,707
CA EV Chargers

63
CA Hydrogen Stations

115
CA Light-Duty Models Available

306
CA Medium/Heavy-Duty EV Trucks

1,369
CA EV Buses

268
CA EV Delivery Vans

Source: VELOZ

Measures to Clean Up Off-Road Equipment

2021
Small Off-Road Engines

2022
Commercial Harbor Craft Regulation

2023
Zero Emission Off-Road Forklift

Future
Cargo Handling Equipment

2022
TRU Part I

2023
In-Use Locomotive Regulation

Future
TRU Part II

Future
Spark-Ignition Marine

CARB

CARB's Zero-Emission Appliance Standards

- 2022 State SIP Strategy measure to require new appliance sales to be zero-emission starting in 2030
  - Focus on space and water heaters for residential and commercial buildings
  - Board consideration in 2025
- Close coordination with Districts, local governments, and communities

Partnership is Key

Infrastructure Collaboration

Matching ZEV infrastructure with vehicle deployments

- CARB-CEC funding/incentive collaboration
- CARB, CEC, CUPC and utility collaboration supports planning and forecasting
- ZEV Infrastructure Joint Statement of Intent
  - Robust data sharing and analysis – feeds into infrastructure planning
  - Joint planning and funding alignment
  - Communication and stakeholder engagement
  - Equity

CARB

CARB Infrastructure webpage

National Actions

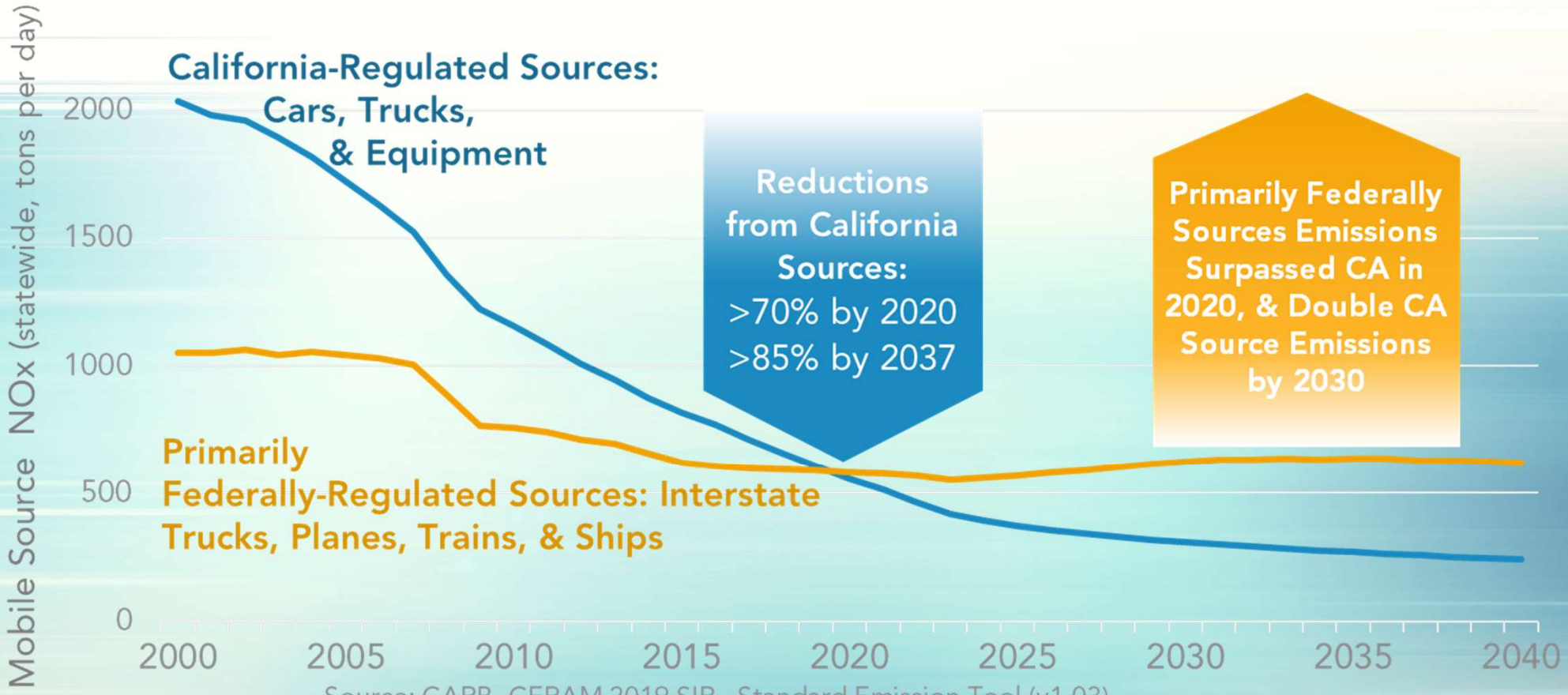
EPA proposed light and heavy-duty vehicle rules

- LDV: 2027-2032 GHG, NOx, and PM
- HDV: GHG rule through 2032

Federal investments (IRA and IIJA):

- Expanding $7,500 EV rebate and encouraging North America jobs
- $B's for EV chargers and H2 "Hubs" for economic scale

Federal Action is Critical



Source: CARB, CEPAM 2019 SIP - Standard Emission Tool (v1.03),

CARB

Success Depends on Local Partners




Indirect Source Rules (ISR)

- Maximize public health benefits, addresses air quality, targets federal sources, benefits EJ communities
- CARB regulations include comprehensive suite of equipment categories
- South Coast ISR
  - New Intermodal Rail Yard Facilities
  - Commercial Marine Ports

CARB

Community Air Protection Program Blueprint 2.0 Update

- Reimagine ways to support communities through a two-part updated Blueprint (Sept 2023)
  - Five-year strategic plan with goals, guiding principles, and priority actions
  - Implementation guidance

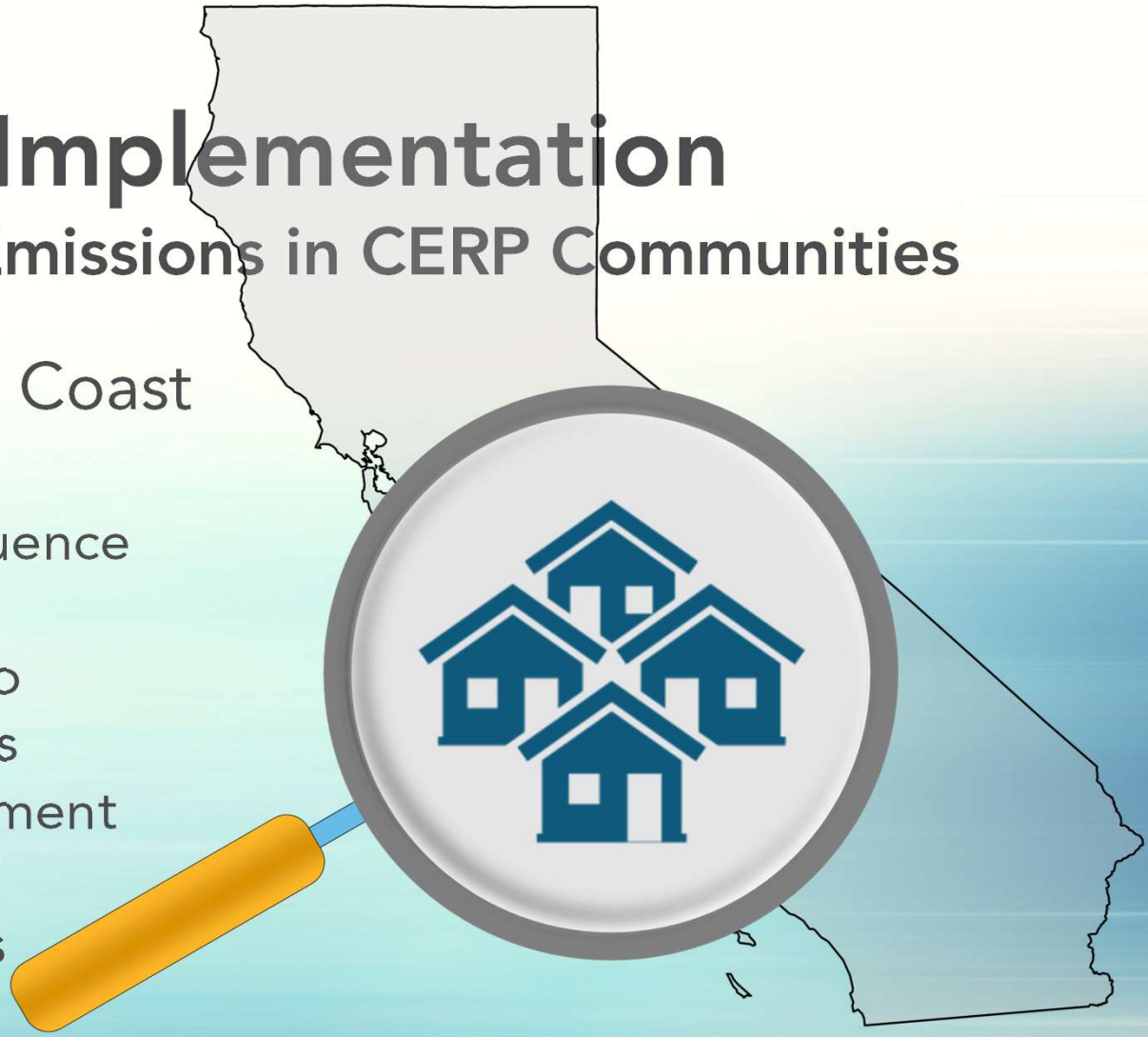
CARB

AB 617 Implementation

Accelerating Zero-Emissions in CERP Communities

CARB Partners with South Coast

- Enable communities to influence zero emission policies
- Focus incentive funding into disadvantaged communities
- Community-focused enforcement ensures compliance in overburdened communities



CARB

California's Future is Zero Emission

Building the Infrastructure for Zero-Emissions

Panel Discussion
2023 South Coast AQMD Board Retreat
May 11, 2023

Agenda

- Introduce Panel Members
- Presentation with Questions for Discussion
- Board Member Questions
- Public Comment

Zero-Emission Infrastructure Panel

Michael Backstrom

Southern California Edison

Hillary Hebert

HMH Energy Consulting Inc.

Tanya Peacock

California Hydrogen Business Council

Hannon Ransool

California Energy Commission

Alice Busching Reynolds

California Public Utilities Commission

Push Towards Zero-Emission Relies Heavily on the Electrical Grid

2022 Air Quality Management Plan

- Push to zero-emission technologies across all sectors wherever feasible

California Governor Executive Order N-79-20

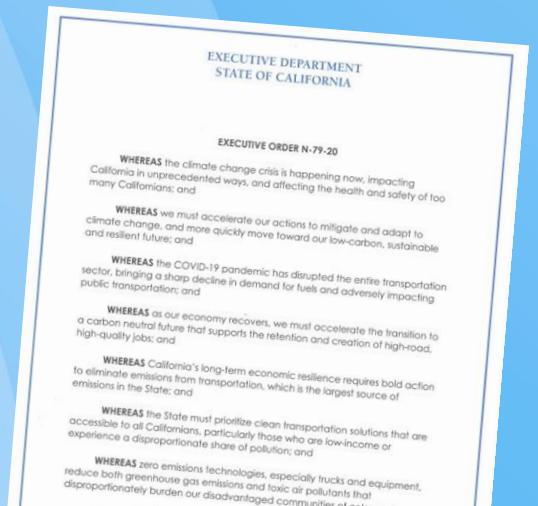
- Goal for 100% sales of new cars and Trucks by 2035
- 100% drayage trucks by 2035
- 100% medium- and heavy-duty truck sales by 2045

Advanced Clean Trucks (June 2020)

- 100,000est. ZE by 2030
- 300,000est. ZE by 2035

Advance Clean Fleets (April 2023)

- New trucks in drayage truck registry ZE only starting 2024
- 100% ZE drayage trucks by 2035
- 100% refuse trucks by 2040
- 100% ZE capable utility fleets by 2040


EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-79-20

WHEREAS the climate change crisis is happening now, impacting California in unprecedented ways, and affecting the health and safety of too many Californians; and

WHEREAS we must accelerate our actions to mitigate and adapt to climate change, and more quickly move toward our low-carbon, sustainable and resilient future; and

WHEREAS the COVID-19 pandemic has disrupted the entire transportation sector, bringing a sharp decline in demand for fuels and adversely impacting public transportation; and

WHEREAS as our economy recovers, we must accelerate the transition to a carbon neutral future that supports the retention and creation of high-road, high-quality jobs; and

WHEREAS California's long-term economic resilience requires bold action to eliminate emissions from transportation, which is the largest source of emissions in the State; and

WHEREAS the State must prioritize clean transportation solutions that are accessible to all Californians, particularly those who are low-income or experience a disproportionate share of pollution; and

WHEREAS zero emissions technologies, especially trucks and equipment, reduce both greenhouse gas emissions and toxic air pollutants that disproportionately burden our disadvantaged communities of color;

California Renewable Generation Targets

California Renewable Portfolio Standard

- 2030 50% renewables (SB350, 2015)
- 2030 60% renewables (SB100, 2018)
- 2045 100% carbon free (SB100, 2018)

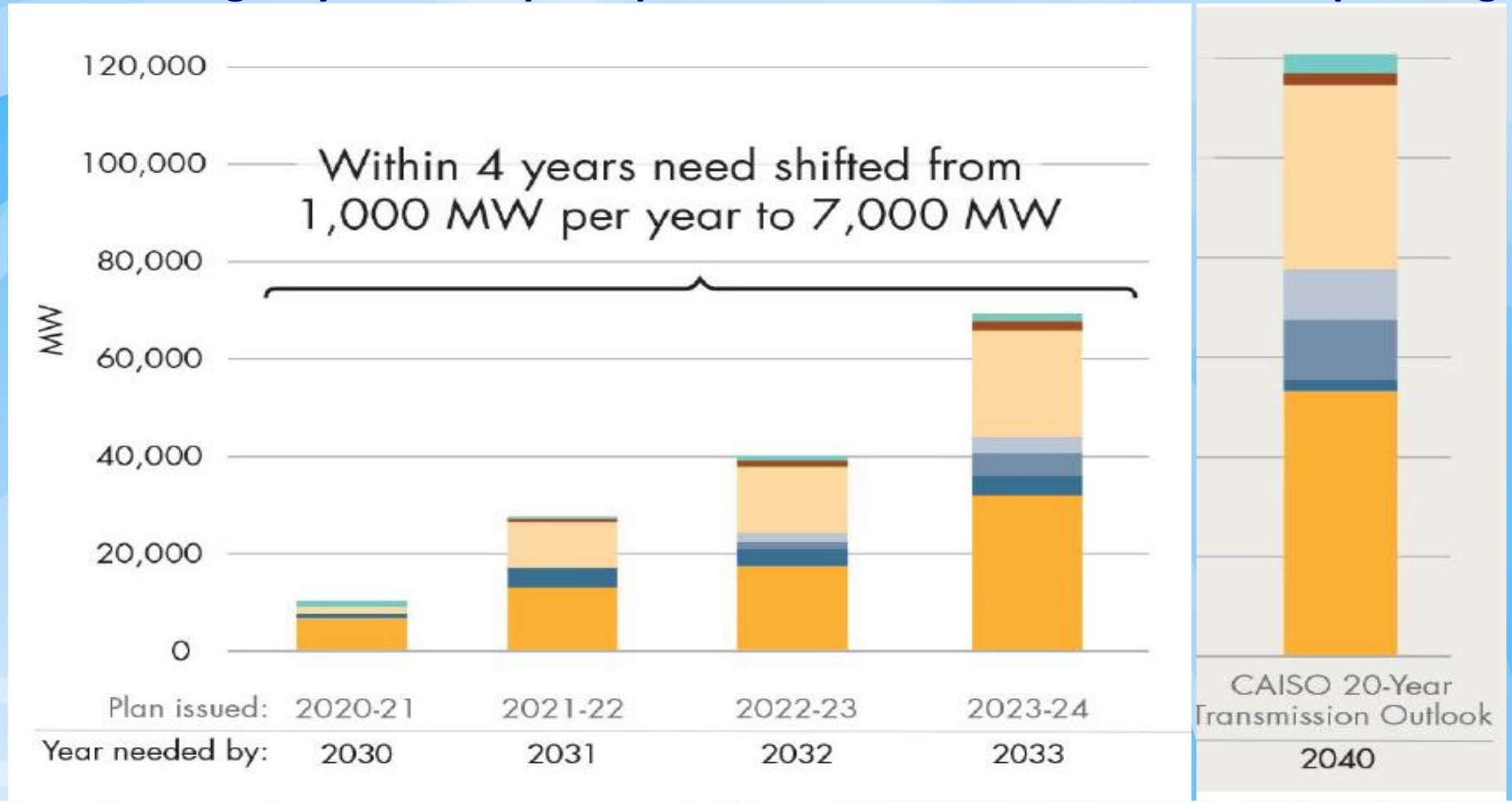
2021 California Grid Power Mix

Conventional	**66%**
Coal	3%
Natural Gas	37.90%
Oil	0.20%
Nuclear	9.30%
Large Hydro	9.20%
Unspecified	6.80%
Renewable	**34%**
Biomass	2.30%
Geothermal	4.80%
Small Hydro	1.00%
Solar	14.20%
Wind	11.40%

[2021 Total System Electric Generation (ca.gov)]

Unprecedented Grid Resources Needed

based on state agency resource plans provided to Cal ISO for transmission planning

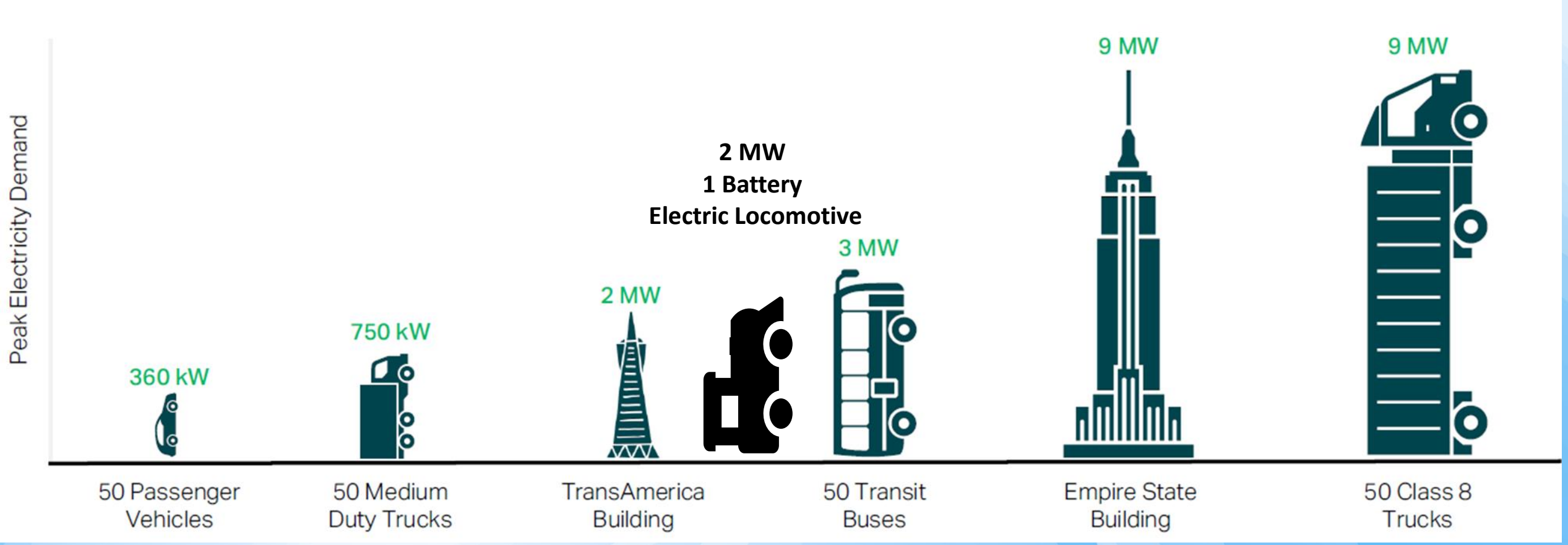


Neil Miller: Presentation-2022-2023-Transmission-Planning-Process-Apr112023.pdf (caiso.com)

Question for Discussion
Needs to Meet Targets

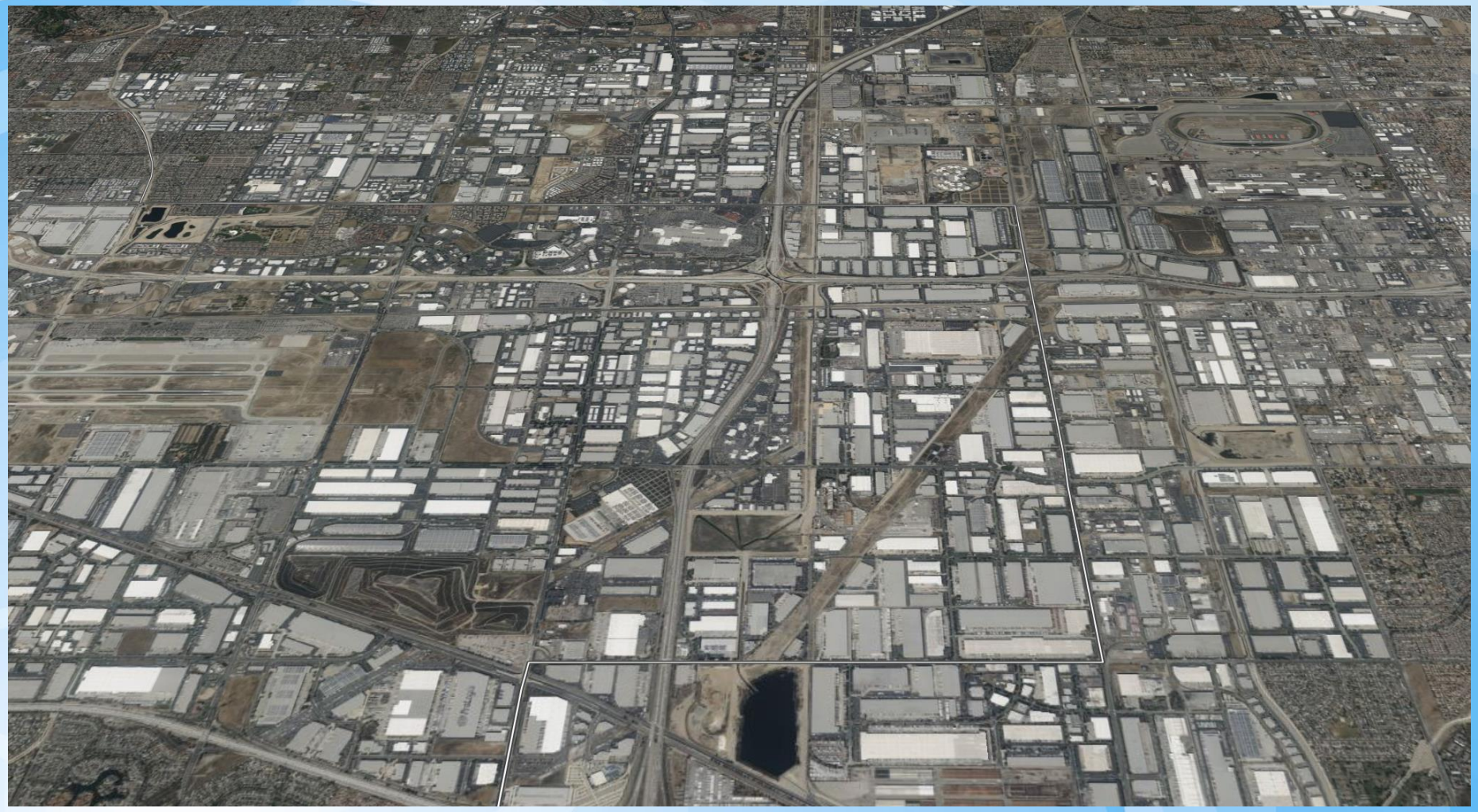
Taking into consideration new loads for buildings and transportation, what is needed for California to be on track to have enough renewable generating and flexible resources to meet these targets?

Bringing Zero-Emission Transportation onto the Grid

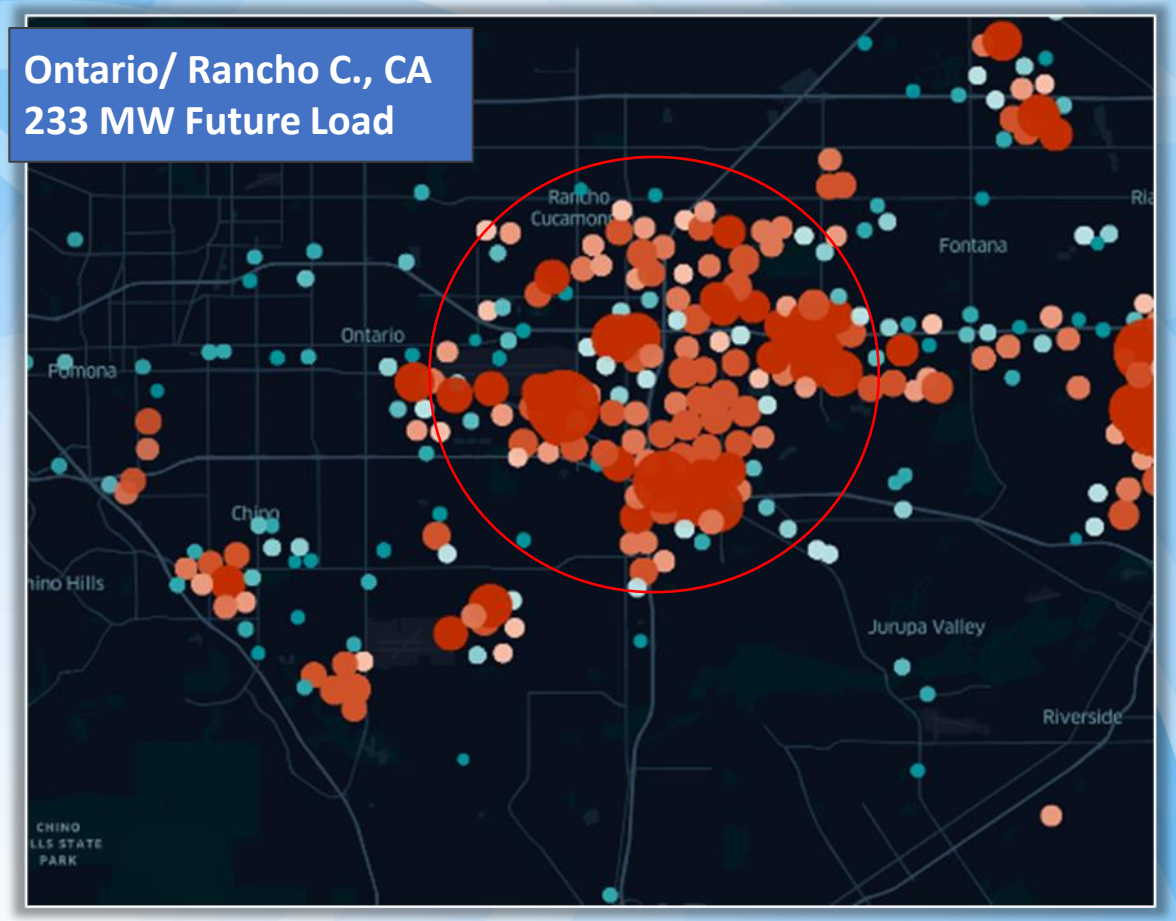


Driving EV Adoption - Program Recommendations for the Next Generation of EV Charging Deployment, Peter Olmsted & Renee Samson, FreeWire Technologies, White Paper, April 2022

Ontario, California



Planning for ZE Infrastructure – Vehicle Telematics Data



Shared with Permission from Daimler Truck

Charging Infrastructure Needs

AB2127 CEC report

- 157,000 MD/HD chargers by 2030 (180k trucks)
  - 141,000 50kW and 16,000 350kW
- 700,000 LD chargers by 2030 (5-8million ZEVs)

Electric Vehicle Charging Infrastructure Assessment - AB 2127 | California Energy Commission

Charging Infrastructure Challenges

- Matching infrastructure construction with truck delivery
- High power requirements of trucks (several megawatts)
- Distribution grid capacity
- Potential delays - Designing and permitting infrastructure including charging equipment
- Resiliency - backup generation
- Need for opportunity charging
- Importance of mitigating demand charges – solar, storage
- Costs

Daimler truck plant customer BETs “holding lot”

Schneider South El Monty April 20th

Questions for Discussion Deploying Infrastructure

What efforts are underway to help fleets and others reduce the time to install EV chargers?

Are there policies or regulatory changes needed to better support deployment of zero-emission transportation infrastructure?

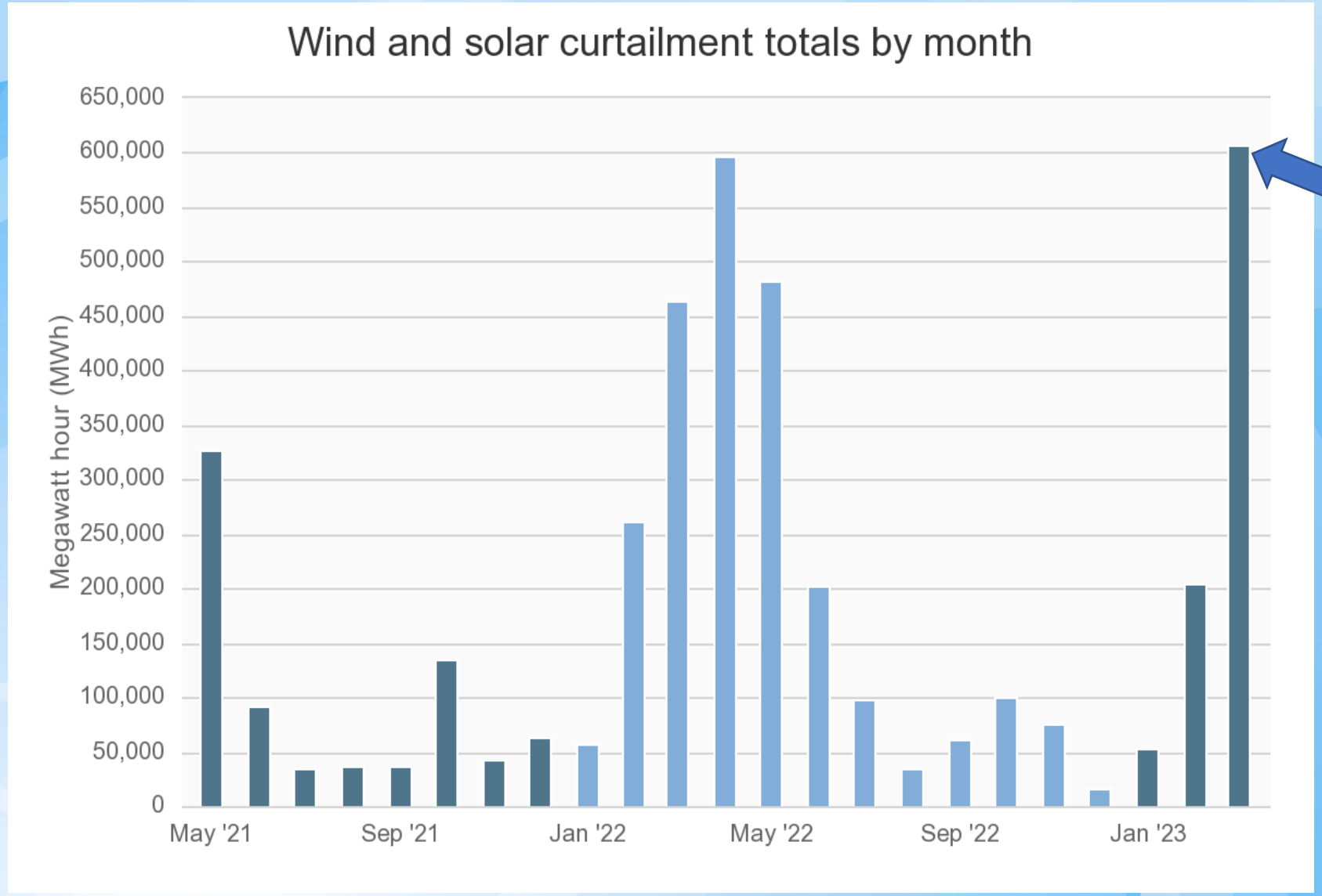
Hydrogen and the Grid

California renewable resources frequently generate more electricity than is needed. Renewable generating resources are often curtailed to maintain supply and demand.

<u>Creates opportunities to add load to grid:</u>

- Battery storage
- Charge EVs
- Produce hydrogen through electrolysis

California Wind and Solar Curtailment Totals by Month



Enough H2 to fill over 180,000 Class 8 Trucks

California ISO - Managing Oversupply (caiso.com)

Question for Discussion
Role of Hydrogen

What role does hydrogen play in supporting the electrical grid and zero-emission transportation as more renewable generation is added?

Question for Discussion
Trained Workforce

How do we ensure a sufficient workforce is trained and available to undertake the grid and charging/fueling infrastructure needs?

Question for Discussion
Addressing Impacted Communities

How do ensure that the most impacted communities are equally benefitting with the transition to zero-emission technologies?

Michael Backstrom

Michael Backstrom is vice president of Regulatory Affairs for Southern California Edison, one of the nation's largest electric utilities. He is responsible at the national and state levels for the company's regulatory strategy and operations, resource planning and environmental affairs.
Backstrom joined SCE in 2005 as an attorney in the legal department, responsible for regulatory proceedings before the California Public Utilities Commission. He has held several leadership positions, including vice president of Regulatory Policy, managing director of Energy and Environmental Policy, director of Customer Experience and director of the Office of the CEO. In addition, he was a manager of federal policy in SCE's Washington, D.C. office.
Previously, Backstrom was an associate in the Los Angeles office of Howrey LLP, where his practice focused on commercial litigation.

Backstrom serves as a board member of the Alliance for Transportation Electrification and executive committee member of the Los Angeles County Economic Development Corporation.
He earned a bachelor's degree in English from Pepperdine University and a Juris Doctor from the University of Southern California.

Hillary Hebert

Hillary Hebert is founder of HMH Energy, a consulting firm supporting energy providers, developers and stakeholders to resolve the most complex California energy issues. She started her career as an attorney representing renewable energy developers and has since been entrenched in the California regulatory stakeholder process specializing in resource planning, clean energy procurement, energy efficiency and demand response. During her 14 years in the utility industry, she built a reputation as an effective collaborator and advocate with a passion for practical solutions.

Tanya Peacock

Tanya Peacock is Managing Director for California and Hydrogen at EcoEngineers, an international clean energy consulting firm with deep expertise in carbon life-cycle analysis. Based in Los Angeles, Tanya is responsible for expanding EcoEngineers' energy transition practice in California. She is simultaneously leading the fast-growing hydrogen sector.

A well-known clean energy champion, Tanya currently serves as chairperson of the California Hydrogen Business Council. She has held board and leadership roles at the American Biogas Council, Coalition for Renewable Natural Gas, California Stationary Fuel Cell Collaborative, among others. Additionally, she is an expert in California's cap-and-trade program and played a key role in the development of policies to support the production and use of clean energy in California.

Prior to joining EcoEngineers, Tanya led the California Policy and Government Affairs team at Bloom Energy focusing on decarbonization pathways, clean hydrogen opportunities, and distributed energy policy priorities. Before that, she led rates and policy teams at Sempra Energy and its subsidiary, SoCalGas. Tanya earned a Master of Regional Planning degree from Cornell University in Ithaca, New York, and a Bachelor of Arts from Mills College in Oakland, California. She is a current board member at the Los Angeles League of Conservation Voters.

Hannon Rasool

Hannon Rasool is the Director of the Fuels and Transportation Division at the California Energy Commission. The Energy Commission leads the state in zero-emission vehicle infrastructure deployment for electric vehicles and hydrogen fuel cell vehicles. It makes key investments in infrastructure for passenger cars, trucks, and buses, and invests in manufacturing, workforce development, and fuel production.

The Fuels and Transportation Division is comprised of over 70 multi-disciplinary staff members focused on grant funding, policy, and modeling and analysis. The division has invested over a $1 billion to decarbonize the transportation industry, with a strong focus on equity investments. The most recent Clean Transportation Program Investment Plan Update includes $2.9 billion in investments in the coming years.

Rasool, who joined the Energy Commission in July 2020, has more than 13 years of experience in the energy industry, including the regulated utility space and government. He has an extensive background in regulatory affairs and electric vehicle infrastructure. His work history includes clean transportation, renewable energy, net metering, energy storage, and distributed energy technologies.

Alice Busching Reynolds, President

Alice Busching Reynolds was appointed to the California Public Utilities Commission (CPUC) as President by Governor Gavin Newsom on Nov. 22, 2021, effective Dec. 31, 2021. She was confirmed as a CPUC Commissioner by the State Senate on August 17, 2022.

Prior to her appointment, President Reynolds served for three years as Governor Gavin Newsom's senior advisor for energy. From 2011 to January 2019, she served in the administration of Governor Edmund G. Brown Jr., most recently as the Governor's senior advisor for climate, the environment and energy and previously as chief counsel and deputy secretary for law enforcement at the California Environmental Protection Agency. During her time at CalEPA, she coordinated statewide multi-agency environmental enforcement actions and led the creation of the agency's environmental justice task force and refinery safety task force. President Reynolds began her public service career in 2002, serving approximately 10 years as a deputy attorney general in the California Attorney General's Office, where she litigated cases involving protection of public trust lands, coastal resources and public access, and other environmental issues. Prior to entering public service, President Reynolds was a lawyer in private practice in San Francisco.

President Reynolds holds a bachelor's degree from Stanford University and a juris doctor degree from Santa Clara University School of Law where she graduated magna cum laude.

Federal Grants

Lisa Tanaka O'Malley
Assistant Deputy Executive Officer
Legislative, Public Affairs, and Media
South Coast AQMD Board Retreat
May 12, 2023

Federal Funding Goal

Secure as much of the resources necessary to meet National Ambient Air Quality Standards considering equity and environmental justice, science and technology

Federal Funding Opportunities

Annual Appropriations

Policy – Affect and/or Create Programs Through Legislation

Grants

Annual Appropriations

Authorized Programs

(In Millions)	Fiscal Year (FY) 2020	FY 2021	FY 2022	FY 2023	FY24 President's Budget
Targeted Airshed Grants (TAG)	$56.3	$59	$62	$69.9	$69.9
DERA Grants	$87	$90	$92	$100	$150
Section 103/105	$228.2	$229.5	$231.5 plus $100M	$249	$423

Annual Appropriations

Community Directed Spending Requests

FY 2022

Submitted first Community Directed Spending Request

FY 2023

Submitted and **received** first Community Directed Spending Request

$500K to contribute to replacement of one line-haul locomotive engine with a zero-emission fuel cell engine

Annual Appropriations

2024 Community Directed Spending Requests: All Projects Included in Priority Lists Submitted to Appropriations Committee

Energy & Water

- **$500K** - Plug-in hybrid tugboat and to install an innovative vessel charging system with batteries and hydrogen fuel cell power generation to supply zero emission power.

Transportation, Housing and Urban Development

- **$2M** - Enhance disaster preparedness and incident response program.
- **$1M** - Partner with a Class I railroad to demonstrate a battery-electric locomotive.
- **$2M** – Charging infrastructure to support zero-emission passenger rail vehicle demonstration project to support Metrolink (LOSSAN Corridor).

Interior, Environmental Protection Agency (EPA), and Independent Agencies

- **$2M** - Enhance an emergency operations center, including training and equipment for field and analytical operations.

Policy

Affect and/or Create Programs Through Legislation

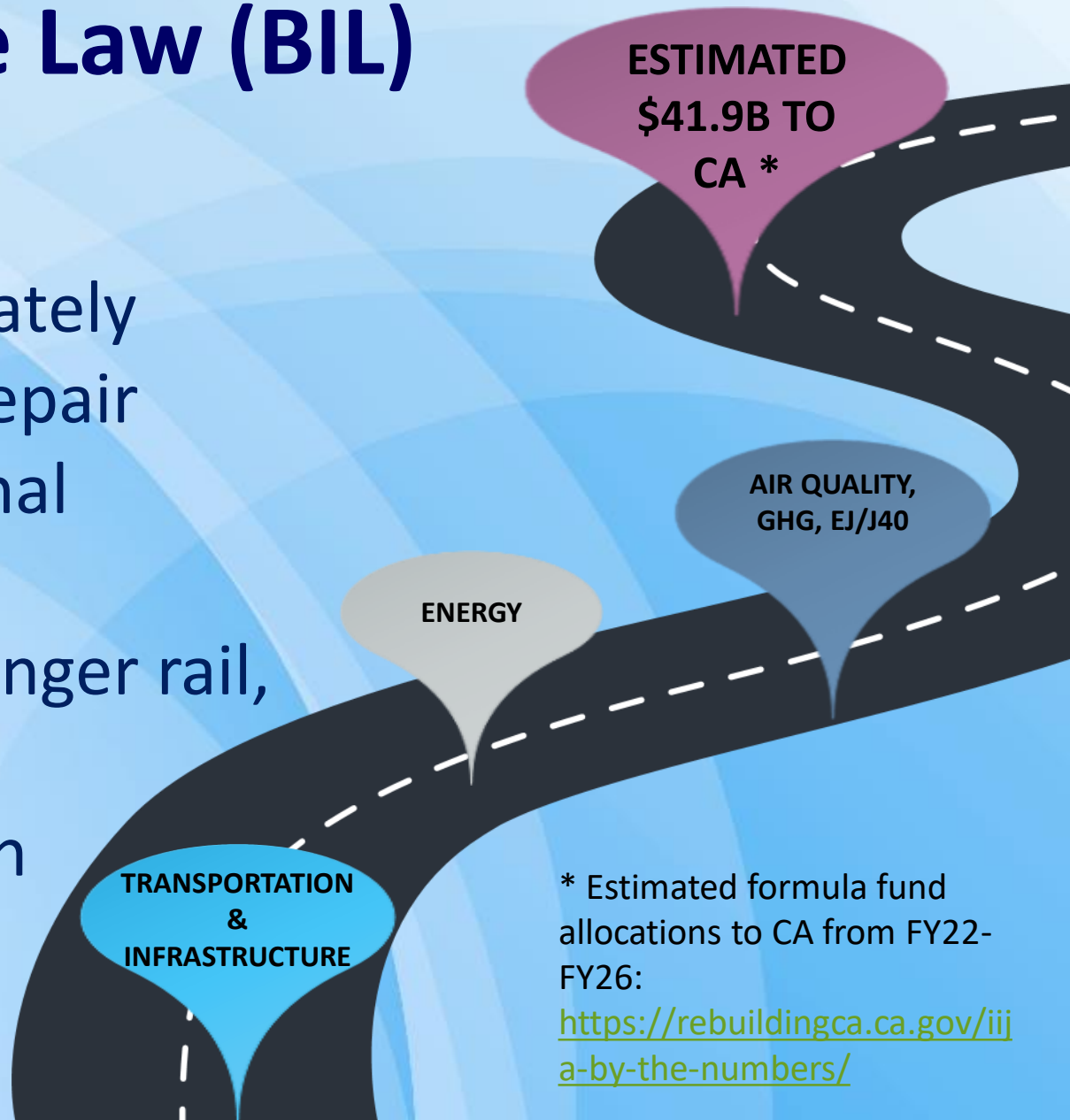
Examples: DERA, Section 103/105

Specific funding and/or prioritization for non-attainment areas, prioritization for environmental justice / Justice 40

Examples:
H.R. 2012 (DeSaulnier) Clean Corridors Act
H.R. 501 (Barragan) Climate Smart Ports
H.R. 862 (Blunt-Rochester) Climate Action Planning for Ports Act
H.R. 8775 (Ruiz) Salton Sea Public Health & Environmental Protection Act
H.R. 6759 (Blunt Rochester) EJ Air Monitoring Act

Investment in Infrastructure and Jobs Act (IIJA) or Bipartisan Infrastructure Law (BIL)

- 5-year surface transportation reauthorization bill plus approximately $110B in additional programs to repair roads, bridges, and transformational projects
- Investment in public transit, passenger rail, and airports
- $65B for clean energy transmission and grid



* Estimated formula fund allocations to CA from FY22-FY26: https://rebuildingca.ca.gov/iija-by-the-numbers/

Inflation Reduction Act (IRA) Highlights

Environmental Justice / Justice 40

- Transportation & Infrastructure
- Climate & Air Quality
- Clean Air Act
- Energy

Grants Strategy

Whole of Government

Engage members of Congress & stakeholders

Proactively seek funding opportunities

Work to shape funding program development – Requests for Information / Public Comment

Joint Office of Energy and Transportation

Grants Strategy

Partner where possible and/or required with other agencies, community-based organizations, industry, and academia

Capture all opportunities for non-competitive funding and look for programs with non-competitive prerequisites

Share information and support other governmental and CBOs efforts to maximize awards to the region in support of air quality

Engage in efforts to influence use of formula funds to state and local government to support reductions in air pollution

Status of Federal Grants

Non-Competitive / Prerequisite

Agency	Program	Description	Allocation	Awarded or Pending
U.S. EPA	Section 103 PM2.5 Funding	Annual grant for PM2.5 activity.	$835,316	Pending
U.S. EPA	Clean Air Act Grants under IRA	South Coast AQMD will purchase FLIR camera and air monitoring equipment.	$653,000	Pending
U.S. EPA	Climate Pollution Reduction Grants	Program has 2 phases: 1st Phase: Non-competitive planning grants to complete Preliminary Climate Action Plan (PCAP) and Comprehensive Climate Action Plan. 2nd Phase: Competitive implementation grants based on PCAP. ($4.6B)	($3M to State and $1M for each LA-OC and Riv-SB Metropolitan Statistical Areas)	Pending

Status of Federal Grants

Competitive

Agency	Program	Description	Available Funding / Request	Awarded or Pending
U.S. EPA	EJ Government to Government	Support government activities that lead to measurable environmental or public health impacts in communities disproportionately burdened by environmental harms. Requires CBO partner).	$70M (Specific allocations for eligible applicant categories) Request = $1M	Pending
MARAD	Port Infrastructure Development Program	Improve the safety, efficiency, or reliability of the movement of goods through ports and intermodal connections to ports.	$662M Request = $68M	Pending
FHWA	Charging and Fueling Infrastructure Program	Deploy publicly accessible electric vehicle charging and alternative fueling infrastructure.	$350M Request = $100M	Pending

Status of Federal Grants

Examples of Open & Upcoming Competitive

Agency	Program	Description	Available Funding / Request	NOFO*
FHWA	Reduction of Truck Emissions at Ports	Study and provide grants to reduce idling at port facilities, including through the electrification of port operations.	$160M (FY22 & 23 combined announcement) 35 awards expected = $4.5M each	Application Due 6/28
U.S. EPA	CPRG: Implementation Grants	Grants to implement greenhouse gas reduction strategies while reducing air pollution, addressing EJ, and promoting jobs and workforce training.	$4.6B	Expected end of 2023
U.S. EPA	DERA	Reduce diesel emissions.	FY22 & 23 combined announcement	TBD – 2023
FHWA	INFRA & MEGA	Infrastructure for Rebuilding America (INFRA) – freight and highway projects of regional and national significance. National Infrastructure Project Assistance (MEGA) – multijurisdictional or regional significance and may be multimodal.	$8B (INFRA) $5B (MEGA)	TBD

*Notice of Funding Opportunity

Status of Federal Grants

Examples of Open & Upcoming Competitive

Agency	Program	Description	Available Funding / Request	NOFO*
FHWA	Reconnecting Communities and Equity Grants	Reconnecting communities cut off from economic opportunities by transportation infrastructure. Funding supports planning grants and capital construction grants, as well as technical assistance, to restore community connectivity through the removal, retrofit, mitigation, or replacement of eligible transportation infrastructure facilities.	$1B	Late Spring
FRA	Consolidated Rail Infrastructure & Safety Program	Improve the safety, efficiency, and reliability of intercity passenger and freight rail.	$5B	TBD – possibly Summer/ Fall 2023

*Notice of Funding Opportunity

Status of Federal Grants

Examples of Open & Upcoming Competitive

Agency	Program	Description	Available Funding / Request	NOFO
U.S. EPA	Clean Heavy-Duty Vehicle Program	Offset costs to replace heavy-duty Class 6 and 7 commercial vehicles with zero-emissions technology; deploy infrastructure needed to charge, fuel, or maintain vehicles as well as develop and train workforce. (New RFI issued, due 6/5/23)	$600M plus an additional $400M for nonattainment areas	TBD – possibly end of 2023 or early 2024
U.S. EPA	Grants to Reduce Air Pollution at Ports	Zero-emission port equipment and technology, conduct associated planning or permitting activities for equipment/technology, and develop climate action plans.	$2.25B plus an additional $750M for nonattainment areas	TBD – possibly end of 2023 or early 2024

Status of Federal Grants

Examples of Open & Upcoming Competitive

Agency	Program	Description	Available Funding / Request	NOFO
U.S. EPA	Environmental and Climate Justice Block Grants	Provide grants and technical assistance to CBOs, alone or in partnerships, to reduce indoor and outdoor air pollution including GHGs, air monitoring, and other. CBO is lead and could partner with local government or academia.	$3B	TBD – RFI closed at end of April
U.S. EPA	Greenhouse Gas Reduction Fund	Financing to leverage private capital for clean energy and climate projects that reduce greenhouse gas emissions with an emphasis on projects that benefit low-income and disadvantaged communities.	$27B	TBD
FHWA	RAISE	Road, rail, transit, and other surface transportation of local and/or regional significance. (FY24 cycle)	$7.5B	TBD

Looking Ahead

Goods Movement: Mobile Sources

Clean Energy

Clean Air Act: monitoring, rules, research, compliance & enforcement, outreach

- Plan Legislative Committee DC Advocacy Trip
- Aggressively continue Legislative and Administrative efforts – independently and as part of/leading coalitions
- Support grant opportunities within South Coast AQMD to support goals with available resources
- Information sharing and support for governmental and community-based organizations on programs where partners are required/advantageous and/or South Coast is not an eligible entity
- **Build on grant successes and partnerships to strategically position for next multi-year transportation authorization bill and/or other legislation**

Technology Advancement

Aaron Katzenstein, Ph.D.
Deputy Executive Officer
Technology Advancement Office

South Coast AQMD Board Retreat
May 12, 2023

Technology Advancement Office

Technology Demonstration

Manages over $168M to fund technology demonstration projects to advance new cleaner technologies

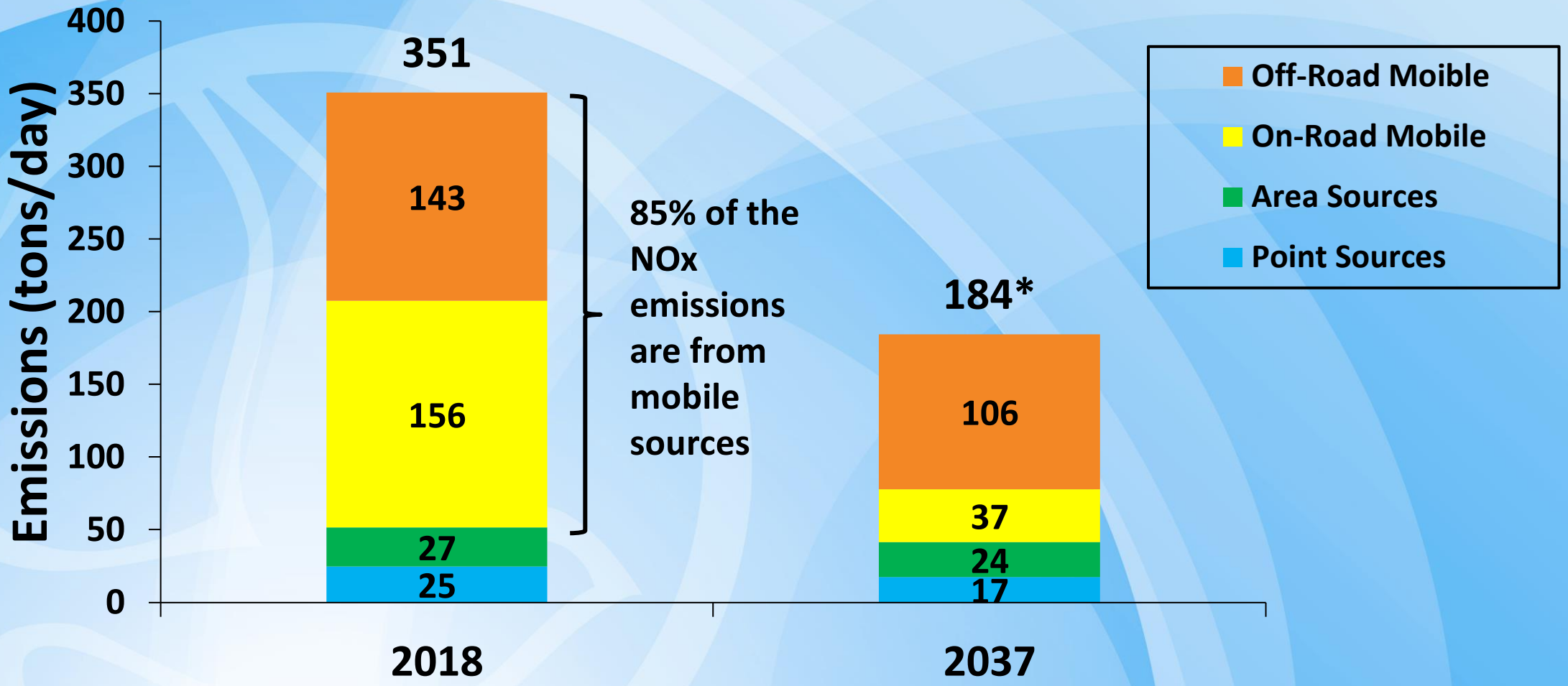
Incentives

Manages over $1.27B to fund incentive projects to accelerate emission reductions

Infrastructure

Manages over $84M of infrastructure projects that support NZE and ZE technology deployments

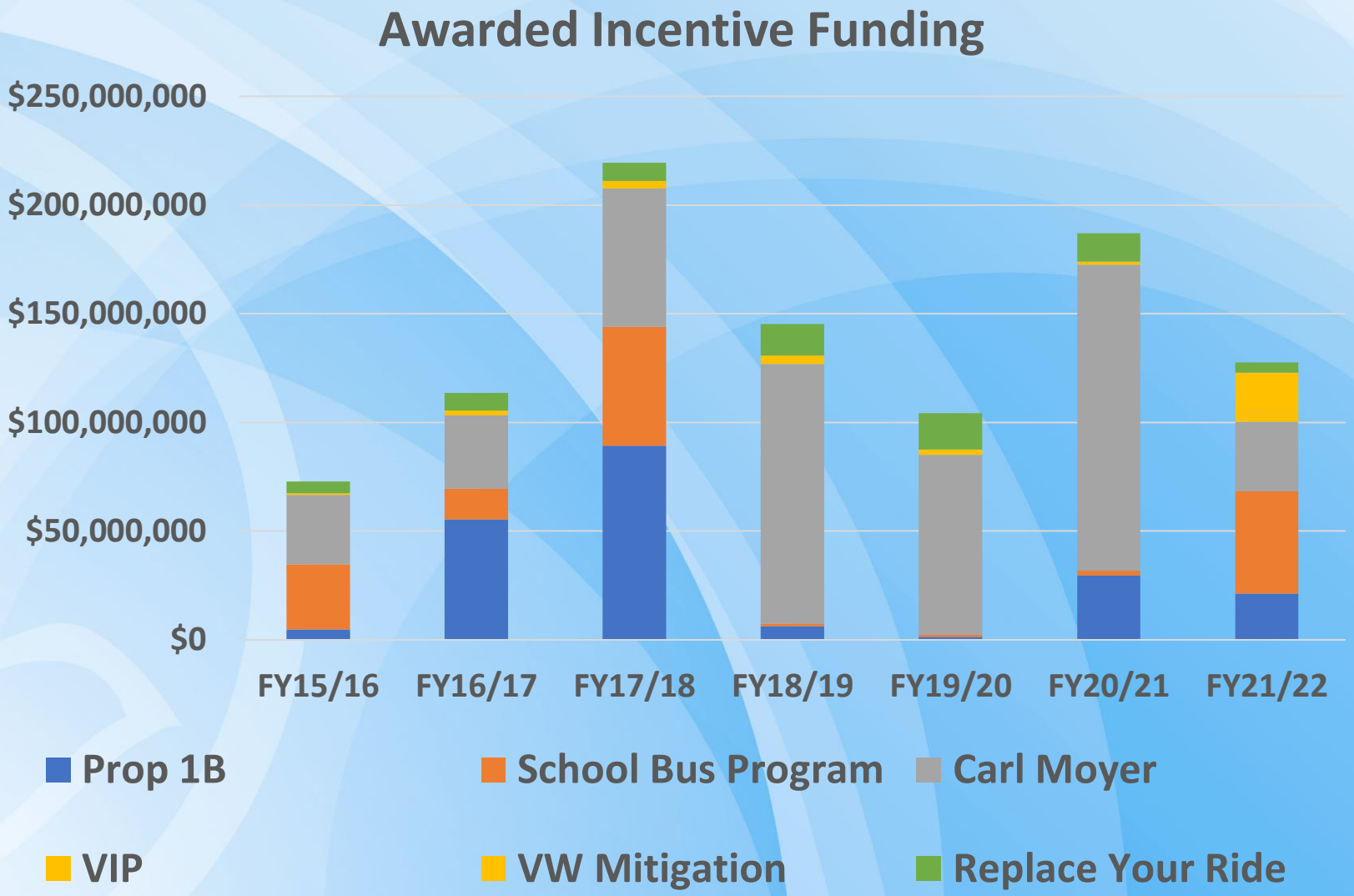
NOx Emissions by Source



*Baseline emissions reflect growth and control from existing rules and regulations

Major Incentive Programs and Funding

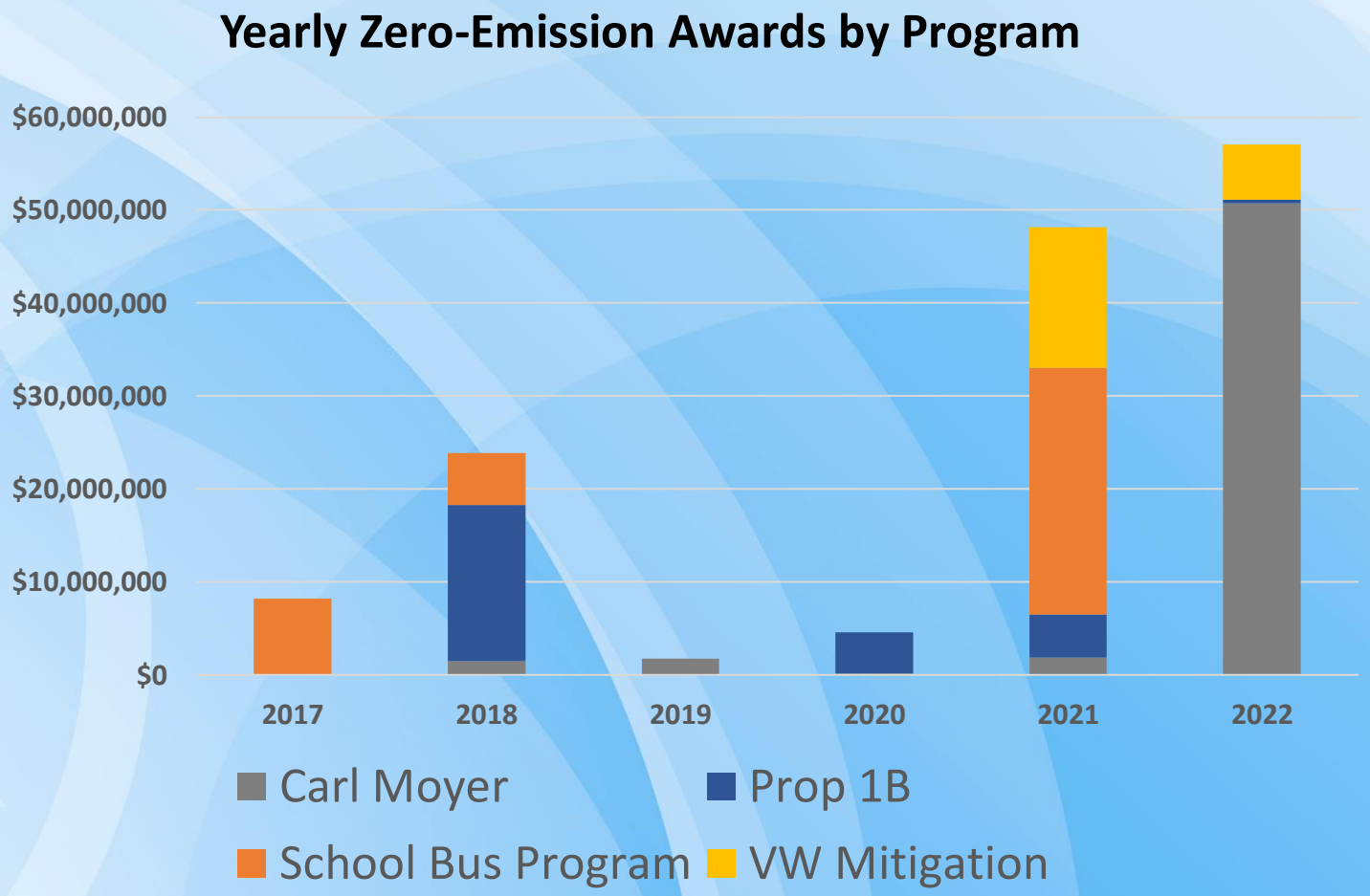
- Since 2015, over $1.2B in incentive funds have been awarded
- FY22/23 $280M estimated for incentives (not shown)



Major Incentive Program Zero-Emission Awards

Milestones last year

- ZE Truck Applications
- ZE Switcher locomotives



Zero-Emission Truck Incentive Program Challenges

- Manufacturers delays caused by supply chain Issues
- Elevated truck prices due to inflation, taxes, warranty, high insurance rates
- Infrastructure for Zero-Emission trucks
- Need to educate fleets and individual owners on new technologies
- Fuel cell truck commercial readiness

Volkswagen (VW) Mitigation Program

Program Overview

- Result of a VW settlement for illegal use of defeat devices in certain Volkswagen diesel vehicles
- Program to fully mitigate excess NOx emissions from defeat devices
- CARB responsible for implementing California's allocation of VW funds

VW Funding Categories Statewide

Statewide Funding

- May 2018, CARB approved a Beneficiary Mitigation Plan identifying program criteria for the state and five funding categories
- Program is administered by three Air Districts statewide

VW Funding Category	Available Funds	Administering Air District
Combustion Freight and Marine Projects	**$60M**	**South Coast AQMD**
Zero-Emission Class 8 Freight and Port Drayage Trucks	**$90M**	**South Coast AQMD**
Zero-Emission Freight and Marine Projects	$70M	Bay Area AQMD
Light-Duty Zero Emission Vehicle Infrastructure	$10M	Bay Area AQMD
Zero-Emission Transit, School, and Shuttle Buses	$130M	San Joaquin APCD
Total VW Funds Available Statewide	**$ 423 million**	

VW Program Implementation – South Coast AQMD

Program Challenges and Improvements Needed

- Low funding limits for project categories and other funding constraints
- Only 2010-2012 engine model year trucks can participate
- Working with CARB on program improvements, such as:
  - Allowing fund leveraging with other state incentive programs
  - Increasing maximum funding awards per equipment/engine
  - Re-evaluating equipment definitions

VW Funding Category (Implemented by South Coast AQMD)	Number of Trucks and Engines Funded	NOx Emission Reductions (tons/year)	Funding Awarded	Remaining Funds
Combustion Freight and Marine Projects	180	116	$14,994,307	$15,005,693
Zero-Emission Class 8 Freight and Port Drayage Trucks	79	10	$15,700,000	$11,300,000
Total VW Funds Awarded by South Coast AQMD	**259**	**126**	**$30,694,307**	**$26,305,693**

Carl Moyer Program

- Scrap and Replace program for on-road and off-road sectors

- 2022 additional $30 million in State appropriated funds in 2022 for on-road trucks
  - 279 Near-Zero truck projects and 67 ZE projects awarded in 2022
  - oversubscribed- used other programs and funds to cover applications

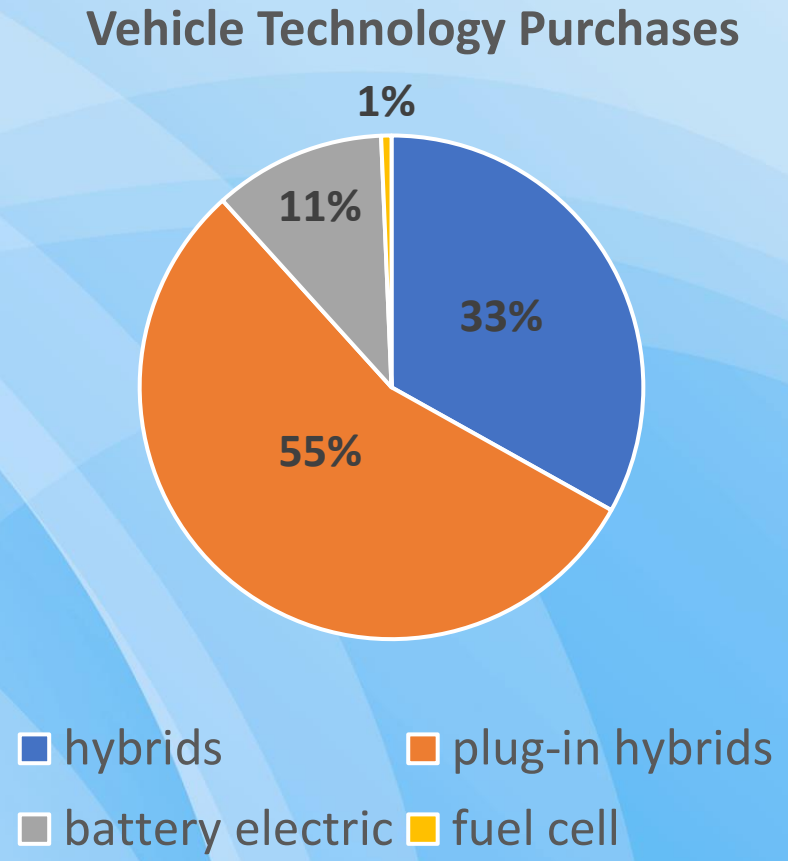
- Close to $50M program funding announcement closed this week

Lower Emission School Bus Program

- Last solicitation awards in 2021
  - 178 school buses awarded ($46.8M total funds)
  - 89 ZE school buses
  - 34 TPY NOx and 3.4 TPY PM
- Added School Bus Project to State Supplemental Environmental Project funding list
  - Last year three settlements used to fund school bus projects
- Anticipate releasing next solicitation late winter
  - Potential change to program to all ZE

Replace Your Ride

- Started in 2015 and over 9,700 replaced ($76M in incentives)
- 93% reside in disadvantaged communities
- 12 e-bikes funded this past year
- Annual reductions: 27 tons NOx, 1.5 tons PM, over 37,000 tons GHG



Replace Your Ride – Upcoming

- Approximately $40M in upcoming funding
- Phase out hybrid vehicle purchase option
- Increased incentive funding to $12,000
- Change in allowable federal poverty levels

Community Air Protection Program (CAPP) Incentives

Funding Overview

- $364.5M allocated to South Coast AQMD from CAPP
  - $220.5M – Mobile Source Projects
  - $52M –AB617 Community Identified Projects
  - $190M – Undesignated Project Funds, staff to work with communities to identify additional emissions and exposure reduction projects

Mobile Source Projects

- Existing incentive categories reflecting Community Emission Reduction Plan (CERP) priorities
- Emissions ng and exposure reduction projects for trucks, locomotives, marine and construction equipment

Community-Identified Projects

- New incentive categories reflecting CERP priorities and require program development
- Emissions and exposure reduction projects for plating facilities, zero-emission trucks, paving, and residential and school air filtration

AB 617 Clean Technology Truck Loaner Program

Program Overview

- Program will provide truck operators in AB 617 Communities opportunities to utilize zero-emission trucks

Outreach:

- Held four public workshops with AB 617 Communities, vendors, and interested parties to develop the project plan
- Ongoing outreach to communities and vendors

Timeline

- March 2023, CARB Approved Project Plan
- Spring and Summer 2023, develop RFP with community input
- Fall 2023 finalize RFP and PA for Board consideration
- Winter 2023 start of program with partners
- Early 2024 program open for AB617 truck operators

Participating Communities	Available Funding
East Los Angeles, Boyle Heights, West Commerce	$1.84M
San Bernardino, Muscoy	$7M
Southeast Los Angeles	$5M
Wilmington, Carson, West Long Beach	$2.75M

AB617 Residential Air Filtration Program

Program Overview

- Reduces residential exposure to Particulate Matter (PM) in participating AB 617 Communities
- Staff is working with communities on program development to ensure application accessibility and to optimize outreach

Timeline

- Early-Summer 2023, open application period
- Mid-Summer 2023, work with vendors to deliver air filtration units

Available Funding

- Funding prioritized by communities through a participatory budgeting process

Participating Communities	Funding
East Los Angeles, Boyle Heights, West Commerce	$1.8M
Eastern Coachella Valley	$1M

AB 617 School Air Filtration Program

Program Overview

- Reduces school children's exposure to Particulate Matter (PM) in participating AB 617 Communities
- Staff is coordinating with LAUSD and other school districts to develop program
  - Identifying solutions to challenges such as site access, filter replacement schedules and other logistics
  - Developing an RFP and PA for program implementation

Timeline

- Early-2023, RFP and PA for Board consideration
- Mid-2023, begin air filtration installations

Available Funding

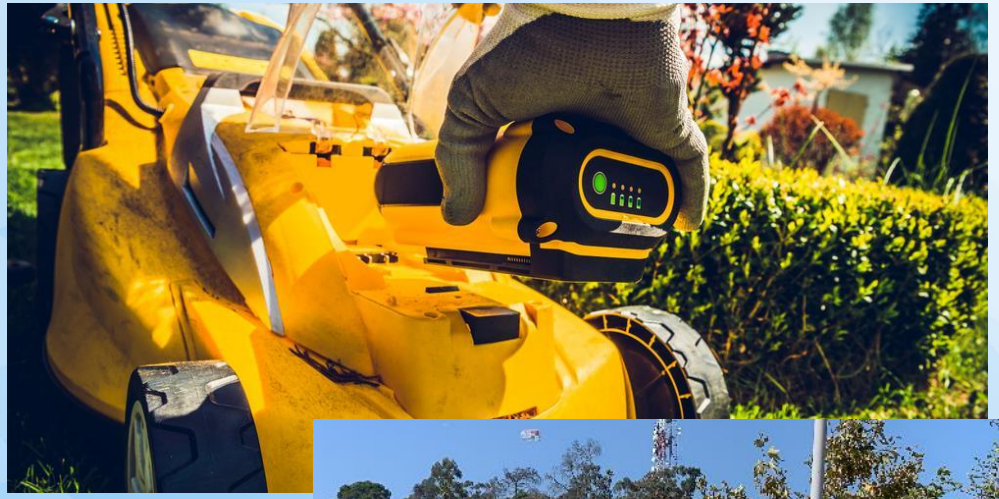
- Funding prioritized by communities through a participatory budgeting process

Participating Communities	Available Funding
East Los Angeles, Boyle Heights, West Commerce	$ 3.8M
San Bernardino, Muscoy	$4.9M
Southeast Los Angeles	$2.5M
Wilmington, Carson, West Long Beach	$2.4M

Commercial eL&G Program

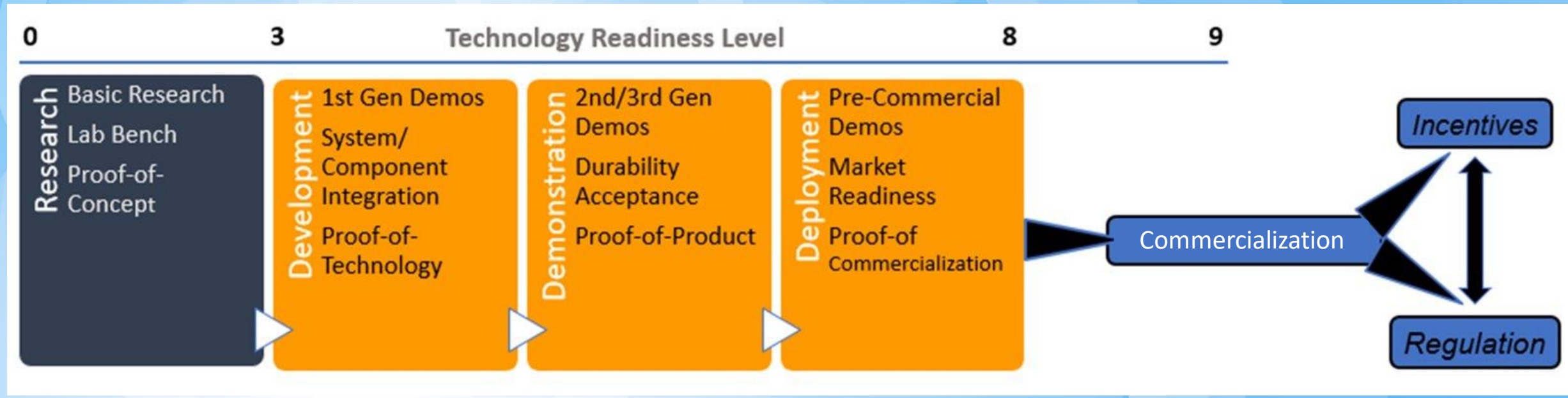
- **Eligibility:**
  - Commercial Gardeners and Landscapers
  - Government Agencies
  - Schools, Colleges, and Universities
  - Non-Profit Organization
  - Private Entities with Full-Time In-House Gardening Staff
  - Must have operable gasoline or diesel-powered commercial lawn and garden equipment to scrap (like-for-like replacement)
- Voucher process, up to 85% discount with additional batteries
- Over 100 retailers will be participating in the program
- 12 manufacturers providing with over 300 products in program
- Over $4M for South Coast jurisdiction
- Additional $3M available for Coachella Valley through EPA grant

Commercial Lawn and Garden Equipment (aqmd.gov)



Technology Research, Development, and Demonstration

- Need for technology development to achieve emission reductions



Origin of Clean Fuels Fund Program

- Established in 1988
- $1 fee DMV registration ($12M/year)
- Stationary source ($400k/year)
- Research, develop, demonstrate and deploy clean technologies
- Focused on On-Road sector

South Coast AQMD Clean Fuels Program- History of Fuel Cell Vehicle Projects

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021-22

100mi

150mi

200mi

Early Demo

Honda FCX Mercedes F-cell

Data analysis

Toyota Highlander
Hyundai Tucson

ZECT II

Fuel Cell
/CNG Hybrid
$20M($2.5M*)

CTE-OCTA

Fuel Cell Bus
$45M ($1M)

ZANZEFF

Toyota-KW
Fuel Cell Truck
$84M ($1M)

CEC ARFVTP

Cummins
Fuel Cell truck
$5M($0.6M)

Hyundai

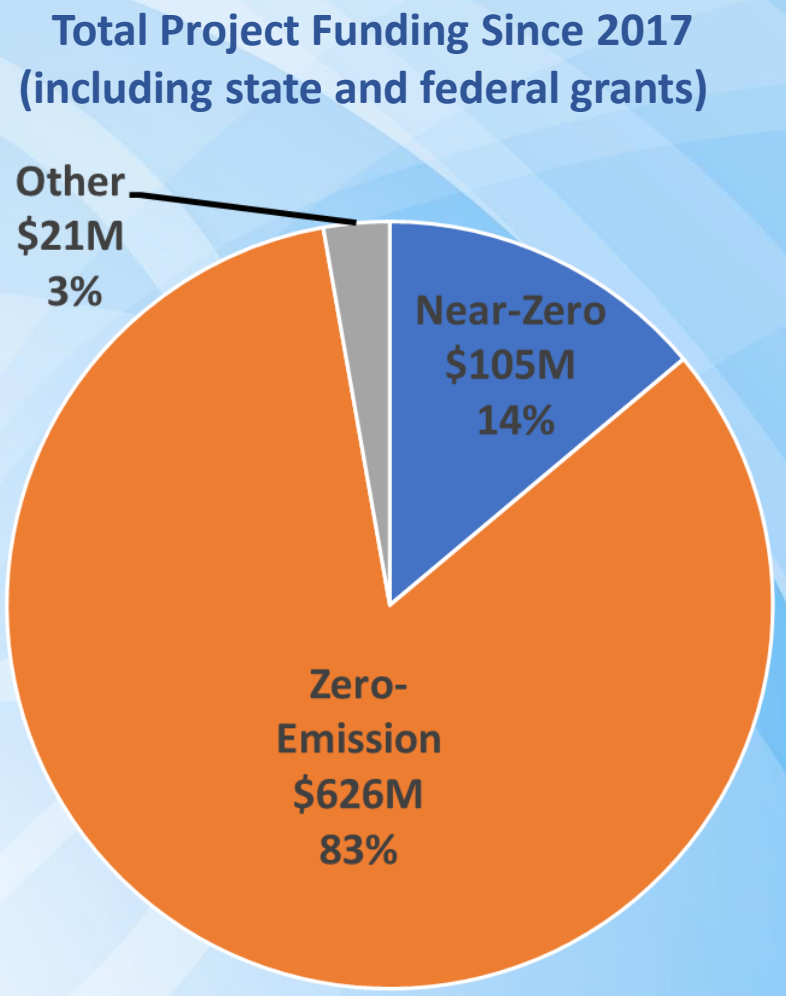
Fuel Cell Truck

Unloaded (500mi)

ZECT II: Zero Emission Cargo Transport II
ARFVTP: Alternative and Renewable Fuels and Vehicle Technology Program
ZANZEFF: Zero- and Near Zero-Emission Freight Facilities

** $ Total Project Cost (South Coast AQMD Cost-share)*

Focus on Zero-Emission Technology Demonstration Projects



South Coast AQMD Private Public Partnerships Maximizes Project Cost-Share

Projects started in 2022

Clean Fuels Fund Cost Share $7.4 Million

South Coast AQMD

+

Other Funding Sources $66.7 Million

→

Total Project Costs $74.1 Million

Zero-Emission Truck Projects

South Coast AQMD has the largest number of battery electric and fuel cell development and demonstration projects in the country

Battery Electric Projects

- Volvo LIGHTS (30 Class 8,recently completed)
- JETSI (100 Class 8)
- EPA TAG (35)
- Volvo Switch-On(70 Class 8)
- Zero-Emission Drayage Trucks (37 Class 8)
- Prop1B (16 Class 8 trucks)

Fuel Cell Projects

- Hyundai (7 class 8)
- A-1 (2 buses)
- Sunline Transit (6 buses)
- Daimler (6 Class 8)
- Kenworth- Toyota (10 Class 8)

2022 EPA Targeted Air Shed Program Awards

Battery plug-in hybrid tugboat

- Innovative charging infrastructure using scalable modular hydrogen power generation and battery energy storage

Six Daimler (Freightliner) Class 8 hydrogen fuel cell trucks

- Leased through Penske Truck Leasing to various Southern California fleets

- Validate reliability and effectiveness of fuel cell technology

Three prototype electric asphalt

-Utilize in real-world applications

- Test performance, explore energy storage capacity and charging infrastructure options, understand operator feedback

Mobile Hydrogen Refueler

- Demand of off-road fuel cell equipment growing
  - No access to hydrogen fueling stations
- Mobile hydrogen refueling stations needed to support fuel cell off-road equipment and on-road vehicles
- Toyota Tsusho America Inc. with industry stakeholders developing fuel cell powered mobile hydrogen refueler for fuel cell cargo handling equipment

Off-Road Demonstration Projects

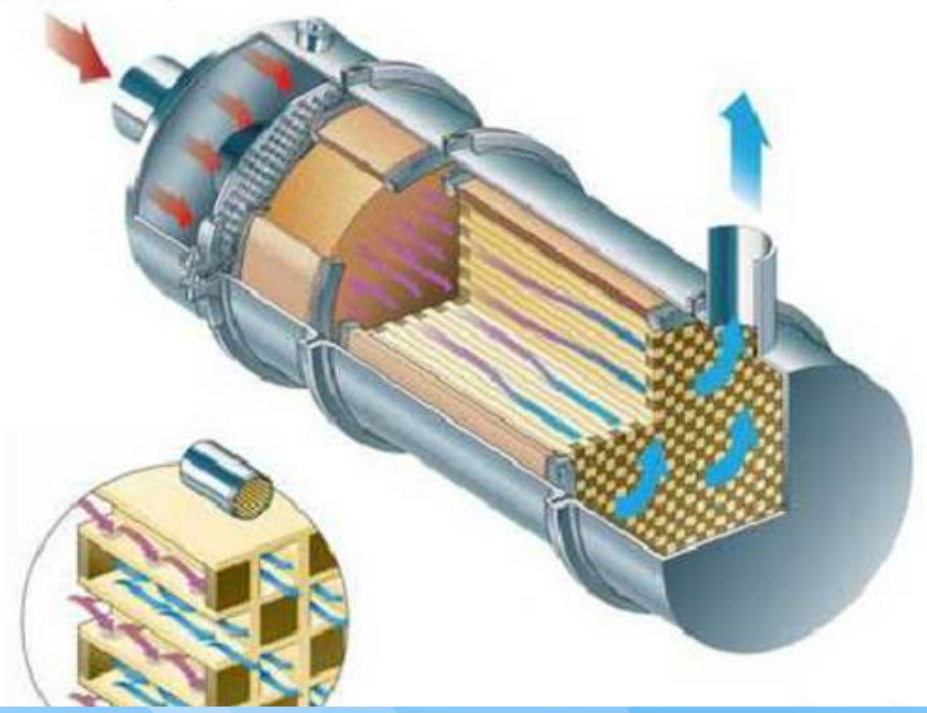
- Water-in-Fuel Retrofit
- Project Cost: $3.2 million (cost-shared by ports)
- MAN Energy Solutions developed and demonstrated Water-in-Fuel technology on a 9000 TEU ocean-going vessel's 2-stroke engine
- Emission benefits: 10-20% NOx reductions in coastal operation
- Quick installation and no dry dock time

Off-Road Demonstration Projects

OGV Multiple Fuel Flexible Injection System

- Project Cost: $17 million (cost-shared by Ports, EPA, MSC and Wartsila)
- Retrofit a 13,000 TEU vessel with a multiple fuel flexible injection platform and gas supply system
- Emission benefits: 70% NOx, PM and 25% CO2 reductions from a Tier II OGV
- Project completion Q4 2025

Off-Road Demonstration Projects



OGV Low-Pressure Exhaust Gas Recirculation (LP-EGR) Retrofit

- Project Cost: $4 million (cost-shared by Ports and EPA)
- Retrofit a 13,000 TEU vessel with LP-EGR
- Emission benefits: 75% NOx and 90% PM reductions from a Tier II OGV
- Project completion Q4 2025

Off-Road Demonstration Projects

- Emissions Capture and Control System for Oil Tankers
- Project Cost: $13 million (cost-shared by CARB)
- STAX Engineering developed and demonstrated Emission control system for oil tankers
- Self-propelled spud barge powered by hydrogen fuel cell and renewable diesel
- Emission benefits: 90% NOx, PM2.5 and ROG reductions from both auxiliary engines and boilers
- Project completion Q3 2024

Off-Road Demonstration Projects

- Battery Electric Line-Haul Locomotive with Charging Infrastructure
- Project Cost: $8.9 million (cost-shared by BNSF, Progress Rail ,Caterpillar Company and EPA)
- Replace a BNSF Tier 1+ freight line-haul with an 8 MWh battery-powered zero-emission locomotive
- Two 1.4MW chargers with at Barstow and Watson
- Annual remission reductions: 8.54 tons of NOx, 0.32 tons of PM2.5 and 1,125 tons of CO2
- Project completion Q4 2025

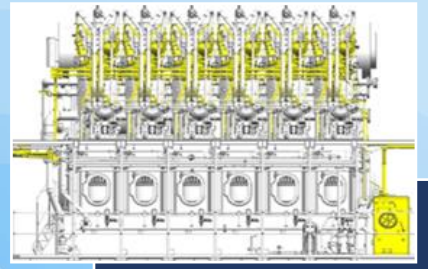
Upcoming Demonstration Projects

Projects Approved

- Mobile Refueler
- Rocket Truck Fuel Cell Generator
- Breathmobiles

Upcoming Projects for Consideration

- Plug-in Hybrid tugboat with innovative charging
- Battery Electric Asphalt Compactor
- Daimler Class 8 Fuel Cell Truck Development



Projects Not Awarded

- OGV Methanol Conversion
- Battery Electric Refuse Trucks

Recent Grant Proposals Awaiting Decisions

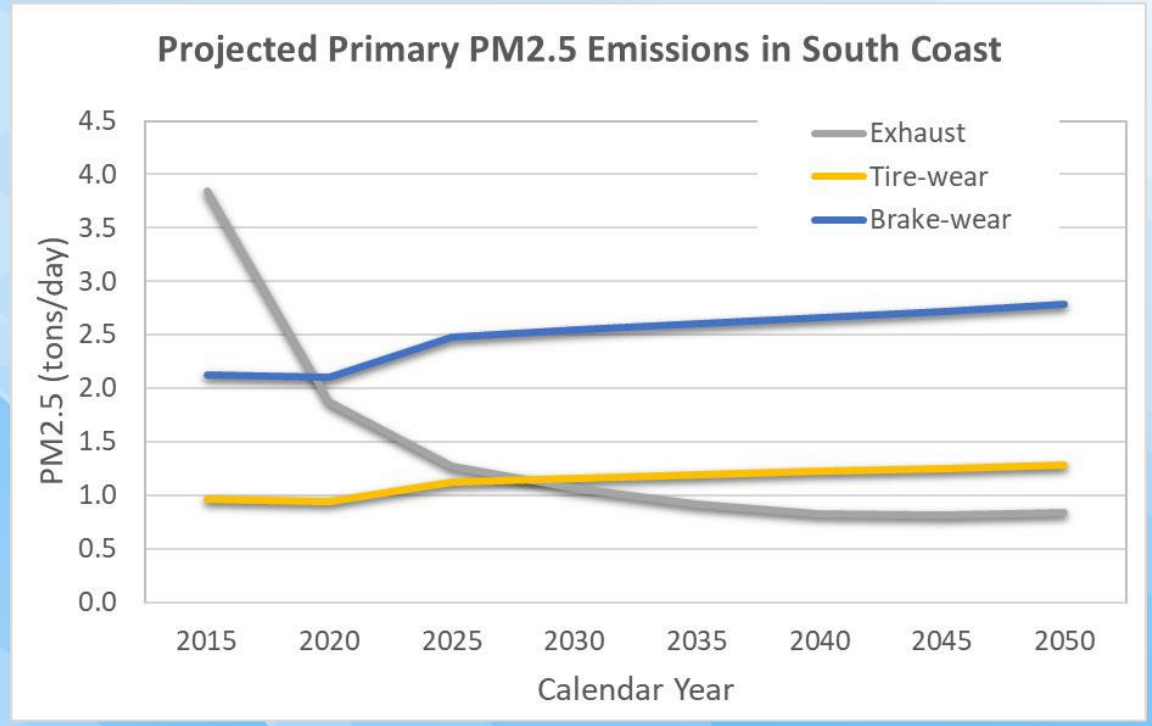
- **CalSTA Application – Freight Air Quality Solutions (FAQS)**
  - Partners Wabtec and Prologis ($165M total cost, $76M requested)
  - Hydrogen Fuel Cell Short line Locomotive
  - 376 heavy duty charging stations and 19 hydrogen refueling dispensers at seven locations to support ZE truck drayage fleets

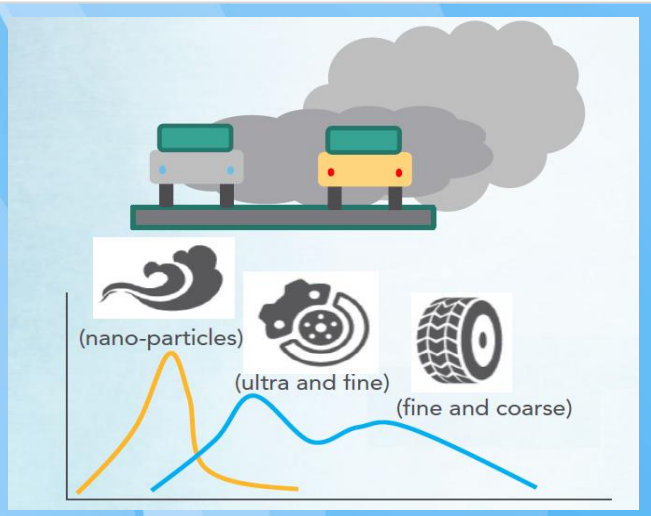
- **Port Infrastructure Development Program (PIDP)**
  - Zero Emission Freight Investment in Resilient Sustainable Transport – ZE FIRST
  - Partner Long Beach Container Terminal ($85M total cost, $68M application)
  - Phase 1 - design and installation battery electric charging equipment
  - Phase 2 -deploy over 200 pieces of zero emission equipment and vehicles (Phase II)

- **CFI**- Charging and Hydrogen Fueling station on I5 and I710, working with regional and state agencies

Future Work – Non-Exhaust Particulate Matter Research

- Non-exhaust PM are projected to make up 80% of PM2.5 in 2050
- Brake wear PM
  - Ultra-fine particles, high metal content
- Tire wear PM
  - Fine/coarse particles, micro-plastic and metal content





Summary

- Infrastructure: Innovative solutions and big push to incentivize infrastructure
- Increased focus on offroad technology development
- Grant Applications: Working with regional partners and community organizations on state and federal funding opportunities for infrastructure, incentives, and technology development

Update on the South Coast AQMD's Diversity, Equity, and Inclusion (DEI) Programs

Anissa "Cessa" Heard-Johnson, Ph.D.
Deputy Executive Officer
DEI and Community Air Programs
South Coast AQMD Board Retreat
May 12, 2023

Fabulous Female Friday

Vanessa Nakate

November 15, 1996

Ugandan Climate Activist

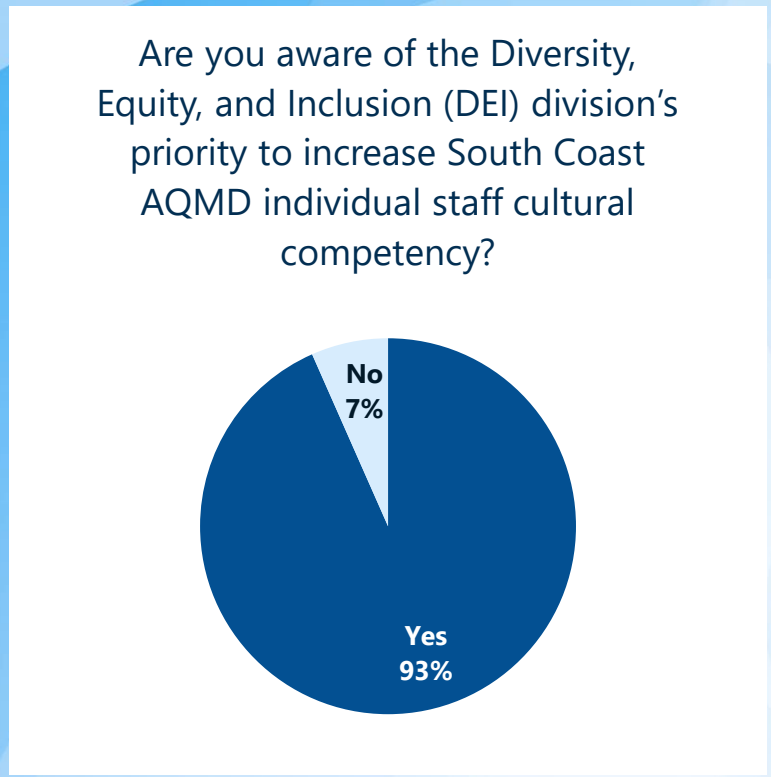
- Born in the capital of Uganda, Kampala
- In 2018, Graduated from Makerere University Business School – Business Administration
- Began researching different issues impacting her country and found that climate change to be the source of numerous issues (i.e. long droughts, high prevalence of landslides, and floods)
- In 2020, she joined other climate activist at the World Economic Forum – was cropped out and left out of the Associated Press' article
- Ugandan Ambassador
  - Rise Up Movement
  - Vash Green Schools Project
  - Initiative to stop the deforestation of African rainforests

VIDEO LINK

Presentation Overview

- Fabulous Female Friday
- DEI Goals and Accomplishments
- Overall DEI Survey Results
- 2022-2023: Infographics
- 2022-2023: Events
- 2022-2023: J.E.D.I. Think Tanks
- 2022-2023: J.E.D.I. Book Clubs
- Individual Employee Resource Groups (ERG)
- Joint DEI/ERG Working Groups

DEI Survey



To measure the effectiveness of DEI initiatives in increasing staff cultural competency

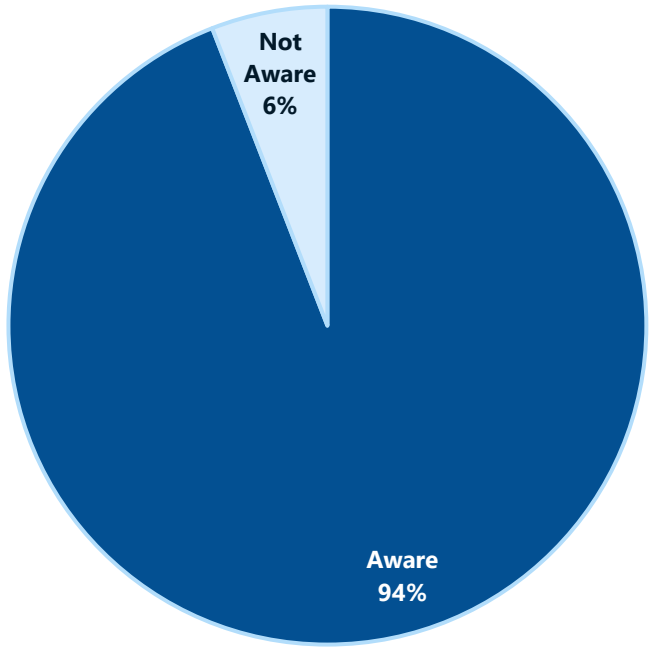
- 10 question DEI Survey was conducted April 21-28, 2023

272 responses out of 800 employees

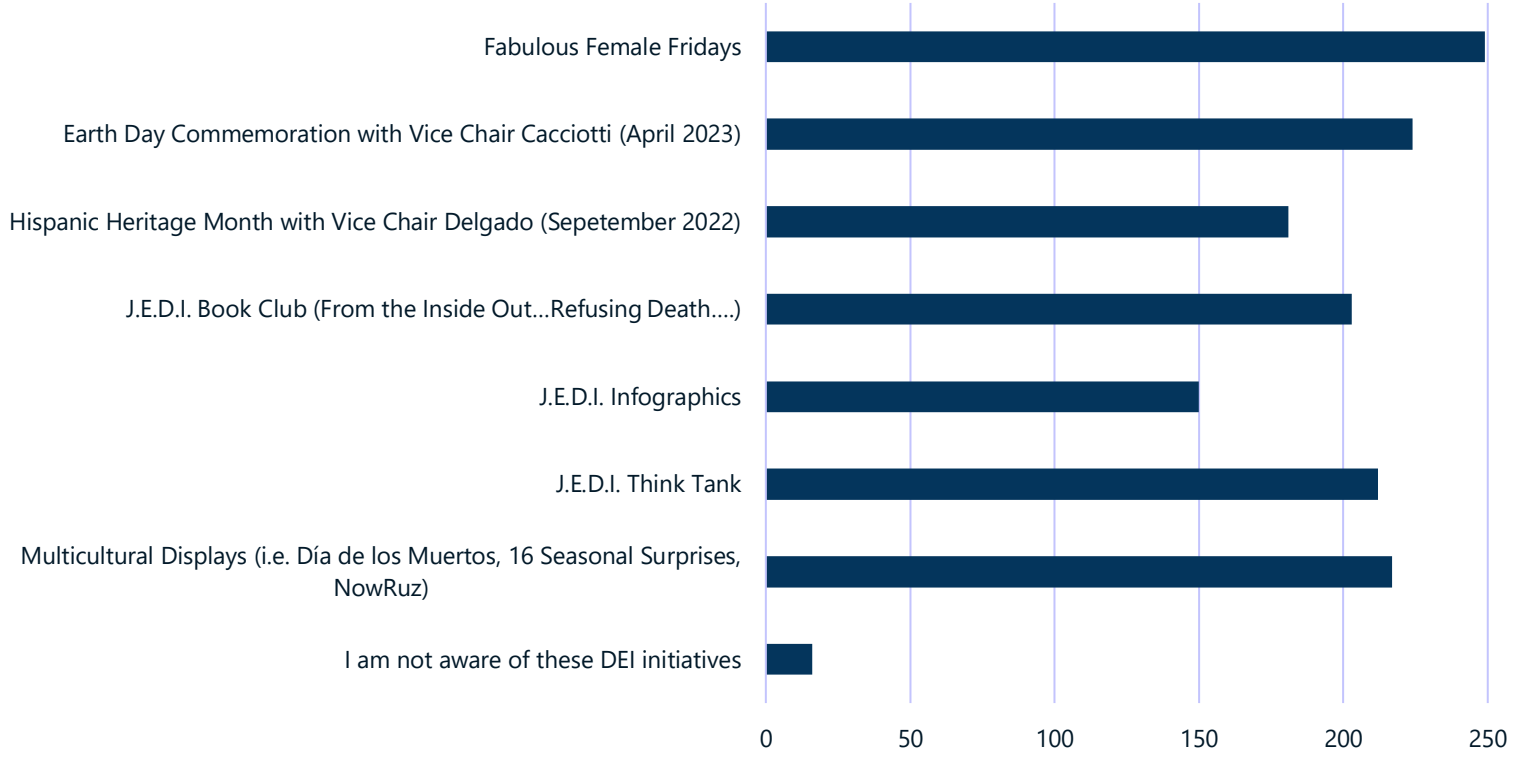
- Response rate of 34%

DEI Survey

Staff that are aware of one or more DEI programs



Are you aware of the following DEI initiatives that have taken place since July 2022? (Select all that apply)



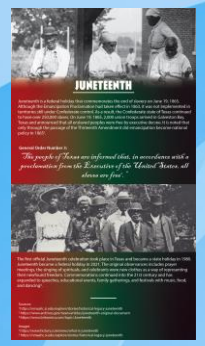
DEI Goals and Priorities 2022-2023

	Equity Related Staff Resources	Employee Resource Groups Initiatives	Staff Training and Development
FY 22-23 Annual Goals	**12**	**14**	**4**
FY 22-23 Year to Date	**25**	**36**	**7**
FY 23-24 Annual Goals (modified for the upcoming year)	**24** DEI events **12** monthly infographic	**12** monthly joint DEI/ERG workgroups **6** bimonthly joint DEI/ERG meetings **7** ERG repository of ERG resources	**2** agency-wide trainings **10** J.E.D.I Think Tanks **4** J.E.D.I. Book Clubs

- Quarter Three Updates
- We've exceeded all DEI goals and priorities
- Can attribute it to the ongoing addition of staff members and engagement with employees
- Modified the goals and indicators for success for the upcoming fiscal year

D.E.I. Infographics

Juneteenth



Flag Day

Hispanic Heritage Month

Moon Festival

Mehregan

Diwali

Veterans Day

Indigenous Peoples Day

Winter Holidays

Lunar New Year

Japanese Internment Remembrance

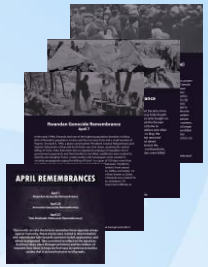
African American Heritage Month

Women's Herstory Month

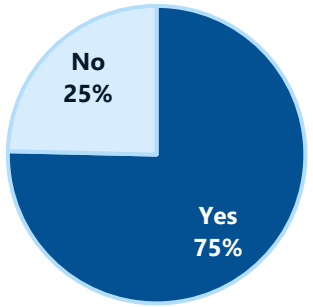
Nowruz

César Chávez

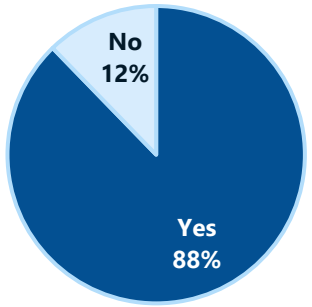
April Remembrances



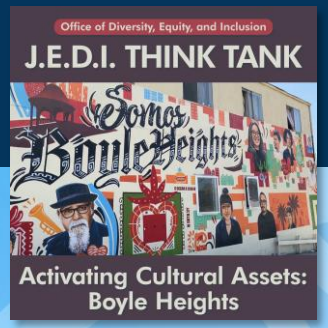
Have you have read a J.E.D.I. infographic this year?

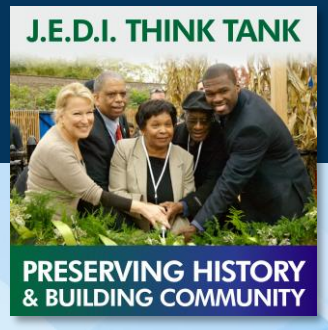


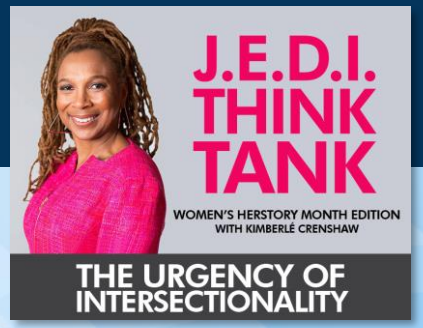
Did you learn something DEI related from J.E.D.I. infographic?



J.E.D.I. Think Tanks 2022-2023







- 9/20 • Boyle Heights
- 1/17 • DEI Community Engagement
- 2/21 • Preserving History & Building Community
- 3/21 • The Urgency of Intersectionality
- 4/20 • Community Healing

"It's really important for our agency to understand how multiple inequities compound health outcomes, and we should be aware of that when we do our work."

“Engagement with communities where there is historical trauma like redlining is difficult, but I like the approaches in this video and resources DEI provides like The Color of Law.”

"There have been times in my work that I came across this issue and didn't know how to define what was going on. This helps me communicate issues I see so we can help our residents."

J.E.D.I. Book Club 2022-2023

November 2022

From the Inside Out: The Fight for Environmental Justice within Government Agencies

Jill Lindsey Harrison

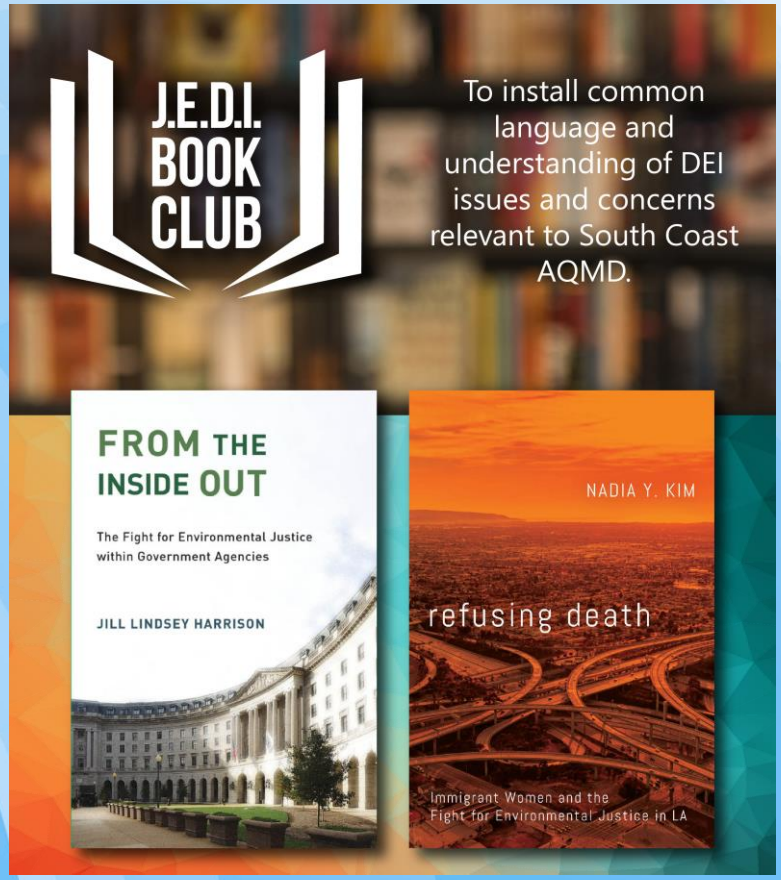
- Feedback
  - Appreciation for the academic EJ research
  - Validated personal experiences with EJ work
  - "It's so true about the culture, built in structures to make it harder for DEI workers"

April 2023

Refusing Death: Immigrant Women and the Fight for Environmental Justice in LA

Nadia Y. Kim

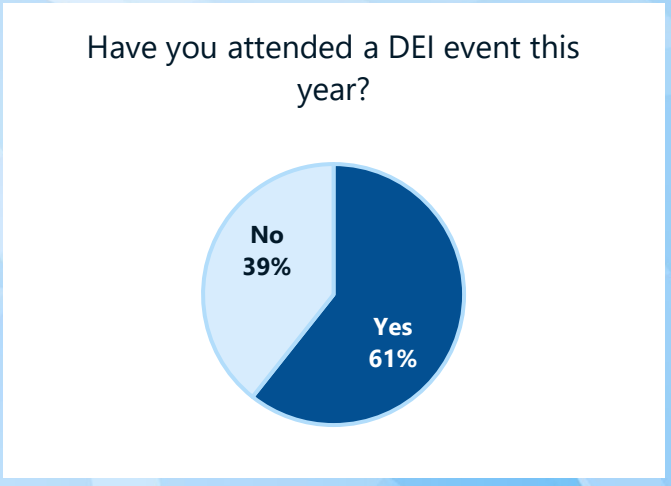
- Feedback
  - Unaware of the context/history behind some of the communities discussed in the book
  - Increasing agency outreach: "people don't know what we do when they see us out on the field"

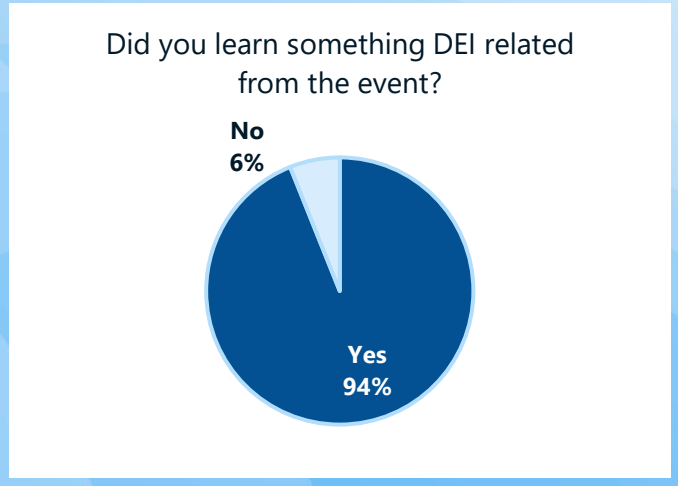


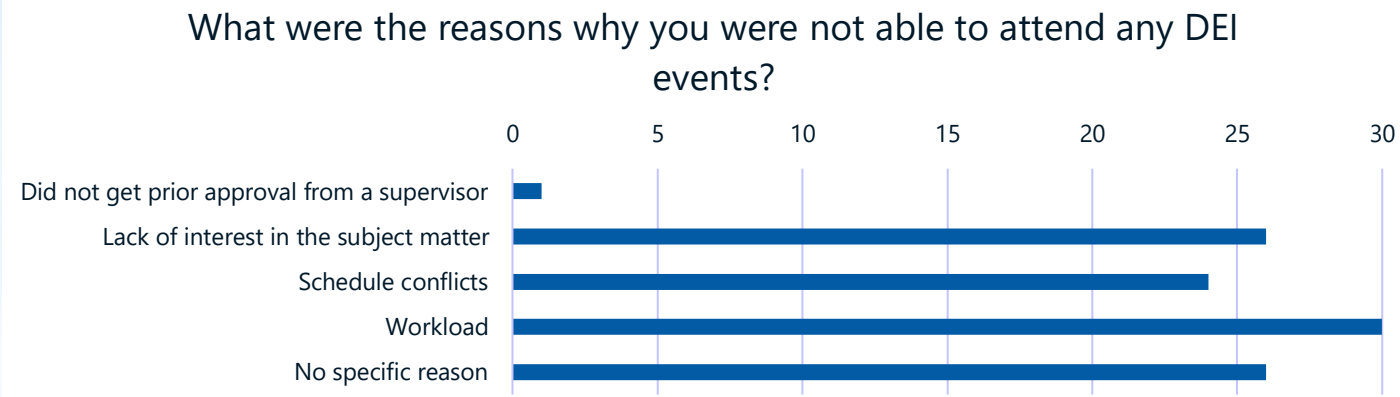
D.E.I. Events 2022-2023

Fabulous Female Fridays

Earth Day Commemoration



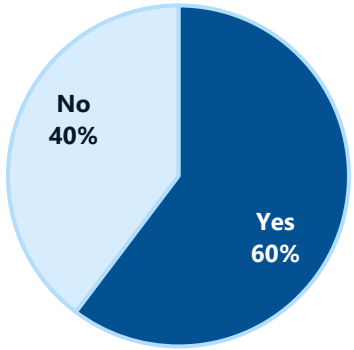




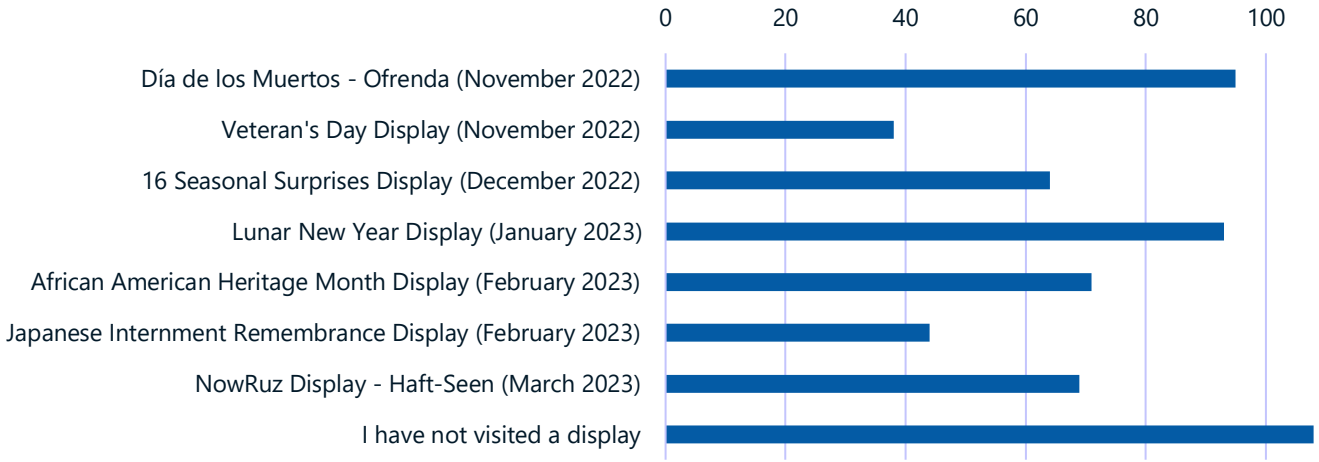
D.E.I. Displays 2022-2023

Multicultural Displays

Have you visited a multicultural display?



What multicultural displays have you visited on campus?



DEI Survey – What We Learned

Infographics

- 75% of respondents read material
- 88% of respondents learned something DEI related

Events

- 94% of respondents learned something DEI related
- 61% of respondents attended an event
- Top reasons for participation:
  - Interest in the Topic (85%) and Virtual Events (68%)

DEI Resources Repository

- 15% of respondents viewed saved event recordings (posted on Airnet)

Employee Resource Groups

Joint DEI/ERG Workgroup Timeline

DEI/ERG Working Groups

Employee Leadership Development
Goals:
- Provide feedback on the inclusion of DEI aspects to mentoring program
- Develop outline for peer ERG leadership development
- Identify DEI resources

ERG Recruitment and Onboarding
Goals:
- Develop DEI recruitment plan ERG membership
- Develop ERG initiatives and resources associated with the onboarding process

ERG Engagement and Retention
Goals
- Develop operational support, resources, and infrastructures for current and future employee resource groups
- Create recommendations for standardized processes for team building and appreciation
- Identify annual calendar, budget and logistics for retention events

Outreach [Community & Educational Equity Organizations]
- Goals
  - Identify/create data base for community and educational equity organization partners
  - Develop a database of professional groups

Ongoing DEI Initiatives