



South Coast
Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov



NOTICE OF SPECIAL MEETING OF THE GOVERNING BOARD Joint Retreat with California Air Resources Board (CARB)

Day One: September 16, 2021
12:30 p.m. to 5:00 p.m.
Day Two: September 17, 2021
8:30 a.m. to noon

HYATT REGENCY INDIAN WELLS RESORT & SPA
Indian Wells Ballroom
44600 Indian Wells Lane, Indian Wells, CA 92210

Meeting will be a hybrid format - both at this location and also via Zoom.
Members of the public may participate either in person or via Zoom or telephone, but virtual participation is encouraged.

Proof of vaccination or a negative COVID test within 72 hours prior to the start of Day One will be required for admittance into the meeting room.

Proof of COVID-19 Vaccination includes:

- COVID-19 Vaccination Record Card (issued by the Department of Health and Human Services Centers for Disease Control & Prevention or WHO Yellow Card1) which includes name of person vaccinated, type of vaccine provided and date doses administered); OR
- A photo of a vaccination card as a separate document; OR
- A photo of the vaccine card stored on a phone or electronic device; OR
- Documentation of vaccination from a healthcare provider; OR
- [Digital record](#) that includes a QR code that when scanned by a SMART Health Card reader displays to the reader: name, date of birth, vaccine dates and vaccine type

REMINDER: Mask wearing is required indoors during the event unless you are actively eating or drinking.

TELECONFERENCE LOCATION

Please follow the instructions below to join the webinar meeting remotely.

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION

Join Zoom Webinar Meeting - from PC or Laptop

<https://scagmd.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 Audio Meeting ID: 963 4776 6150

Teleconference Dial In +1 669 900 6833
One tap mobile +16699006833,,96347766150#

AGENDA

It is expected that item 1 will be completed on Day One. However, items may be taken in any order and items may be heard on either day.

Day One	
Welcome (30 minutes)	<ul style="list-style-type: none">• Mayor Pro Tem Ben J. Benoit, Chair, South Coast AQMD• Liane M. Randolph, CARB Chair• Alejandra Nunez, Deputy Assistant Administrator for Mobile Sources, US EPA
1a. Update on 2022 AQMP/Setting the Stage for Discussion with CARB and EPA (2.5 hours) Staff will provide an overview of: <ul style="list-style-type: none">• progress in meeting attainment standards, including upcoming 2023 deadline• challenges that need to be addressed• key strategies for the 2022 AQMP• Need for federal action on EPA sources	Dr. Sarah Rees Deputy Executive Officer/Planning Rule Development & Area Sources 909.396.2856 Dr. Matt Miyasato Chief Technologist/ Science & Technology Advancement 909.396.3249 Craig Segall, CARB Deputy Executive Officer/Mobile Sources Edie Chang, CARB Deputy Executive Officer/Planning, Freight & Toxics Sarah Dunham, US EPA Director, Office of Transportation and Air Quality

<p>1b. Joint Discussion with CARB Board Members + US EPA (1.5 hours)</p> <p><u>AQMP</u> Strategies for attainment (2023, 2031 and 2038 deadlines)</p> <ul style="list-style-type: none"> • Zero/near-zero vehicles and equipment • Incentive funding guidelines • Federal engagement and need for concrete federal rules (locomotives, trucks, off-road equipment, ships, planes); benefits for EJ communities • Potential joint efforts to advocate for action 	<p>Mayor Pro Tem Ben J. Benoit Chair South Coast AQMD</p> <p>Liane M. Randolph Chair CARB</p> <p>Sarah Dunham, US EPA Director Office of Transportation and Air Quality</p>
---	---

<p>Day Two</p>	
<p>2. Diversity, Equity & Inclusion (DEI) Discussion <i>(1 hour 15 minutes)</i></p> <p>South Coast AQMD staff will provide information related to DEI for Board discussion.</p> <p>CARB staff will summarize DEI efforts at their agency.</p>	<p>Dr. Anissa (Cessa) Heard-Johnson Diversity, Equity & Inclusion Officer/ Deputy Executive Officer/ Executive Office 909.396.3428</p> <p>Chanell Fletcher, CARB Deputy Executive Officer, Environmental Justice</p>
<p>3. AB 617 Update <i>(45 minutes)</i></p> <p>South Coast AQMD and CARB staff will provide an update on implementation of AB 617.</p>	<p>Kathryn Higgins Acting Director, Community Air Programs/Planning, Rule Development & Area Sources 909.396.3309</p> <p>Chanell Fletcher, CARB Deputy Executive Officer, Environmental Justice</p>
<p>4. San Bernardino County Employee Retirement Association (SBCERA) Update <i>(30 minutes)</i></p> <p>SBCERA staff will provide an update on the retirement program.</p>	<p>Debby Cherney, SBCERA Chief Executive Officer</p> <p>Amy McInerny, SBCERA Chief Financial Officer</p>
<p>5. Air Quality Sensor Toolkit <i>(20 minutes)</i></p> <p>Staff will provide an update on the air quality sensor toolkit that has been developed through an EPA grant to improve community use and understanding of these sensors.</p>	<p>Dr. Jason Low Assistant Deputy Executive Officer/ Science & Technology Advancement 909.396.2269</p> <p>Dr. Andrea Polidori Atmospheric Measurements Manager/ Science & Technology Advancement 909.396.2254</p> <p>Dr. Vasileios Papapostolou Program Supervisor/ Science & Technology Advancement 909.396.2283</p>

Public Comment

Members of the public may address the Governing Board concerning any agenda item before or during consideration of that item (Govt. Code Section 54954.3). 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 will be limited to three (3) minutes or less on each agenda item. At a special meeting, no other business may be considered. The agenda for this meeting is posted at South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, CA, and at 44600 Indian Wells Ln, Indian Wells, CA 92210 at least 24 hours in advance of the meeting. Since this is a Special Board meeting, there is public comment on agenda items only, not on non-agendized items.

Adjournment

Americans with Disabilities Act

The agenda and documents in the agenda packet will be made available, upon request, in appropriate alternative formats to assist persons with a disability [Govt. Code Section 54954.2(a)]. Disability-related accommodations will also be made available to allow participation in the Board Retreat. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please contact Clerk of the Boards at 909-396-2500 from 7 a.m. to 5:30 p.m. Tuesday through Friday or send the request to cob@aqmd.gov.

South Coast Air Quality Management District and California Air Resources Board Joint Board Retreat

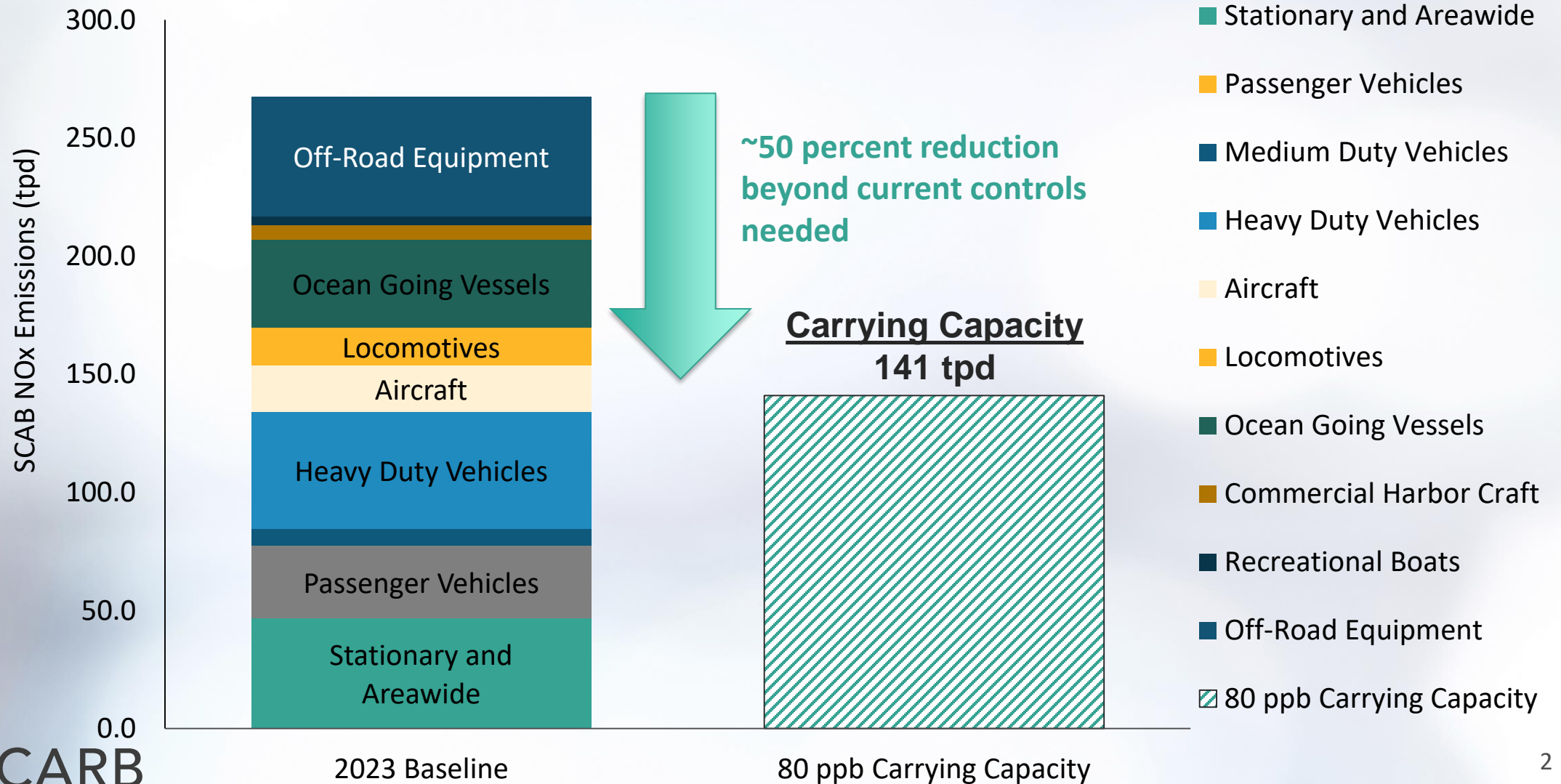
Opening Remarks

Chair Liane M. Randolph

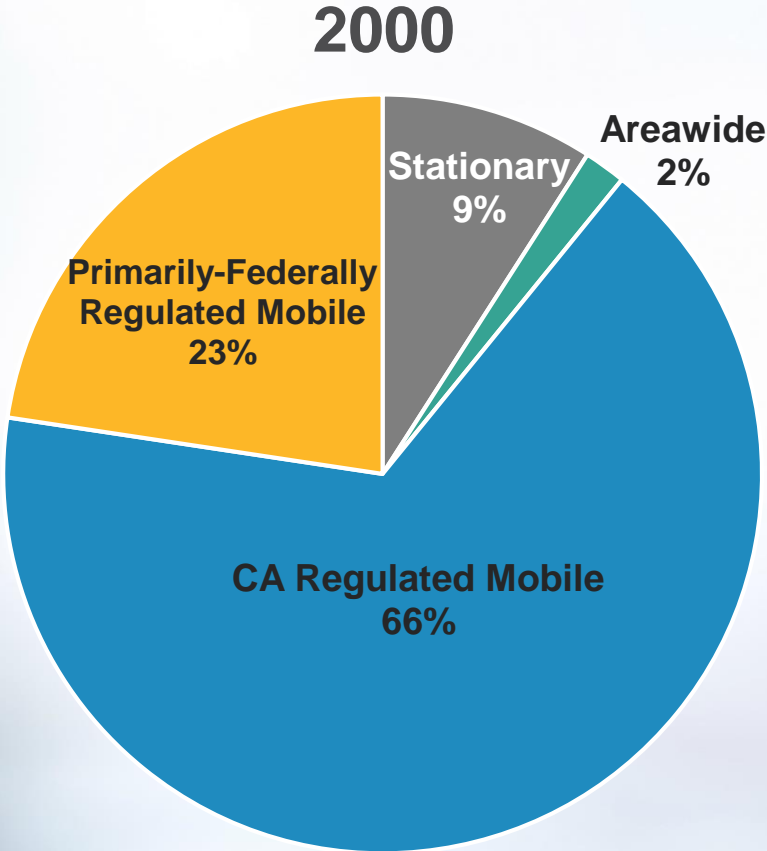
September 16, 2021

South Coast 2023 Attainment

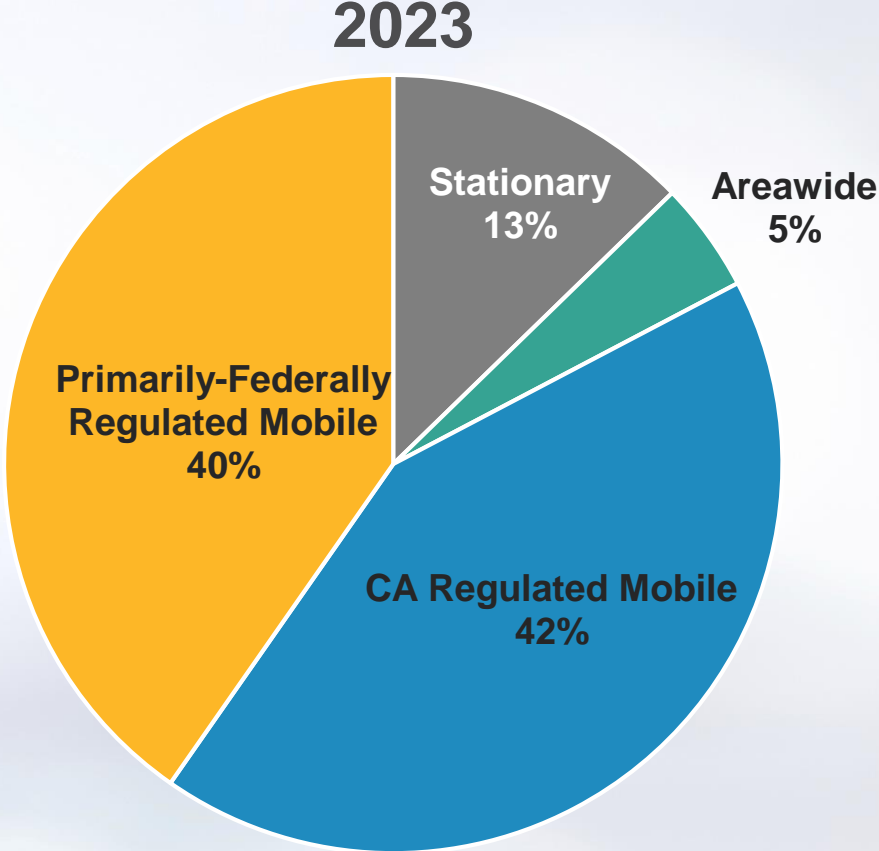
(further reductions needed)



South Coast Air Basin NOx Emissions Contributions: Considerable Progress and Much More to Do

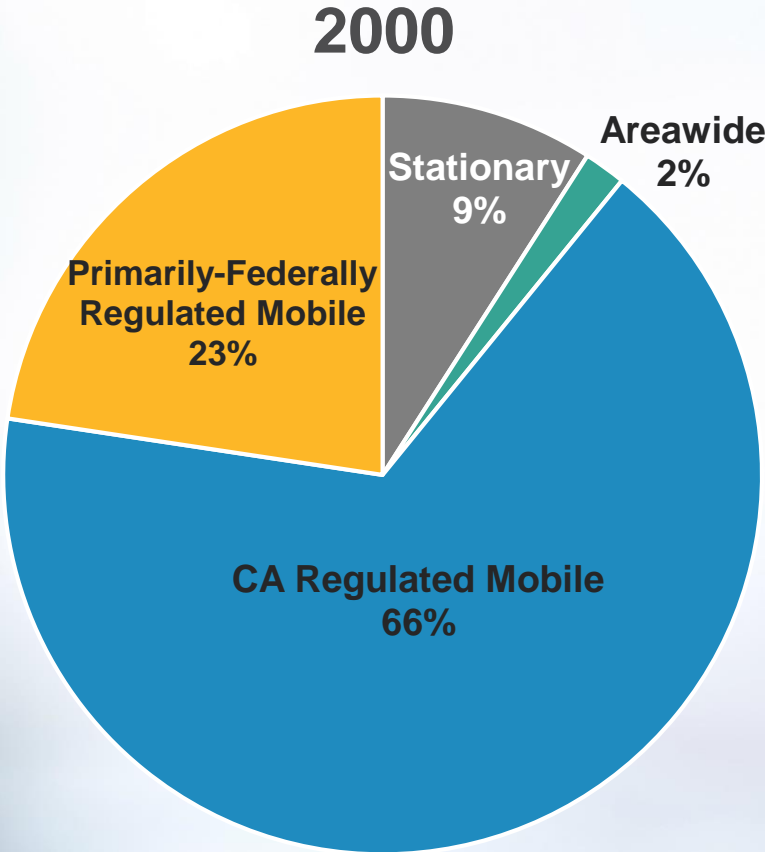


1156 tpd of NOx

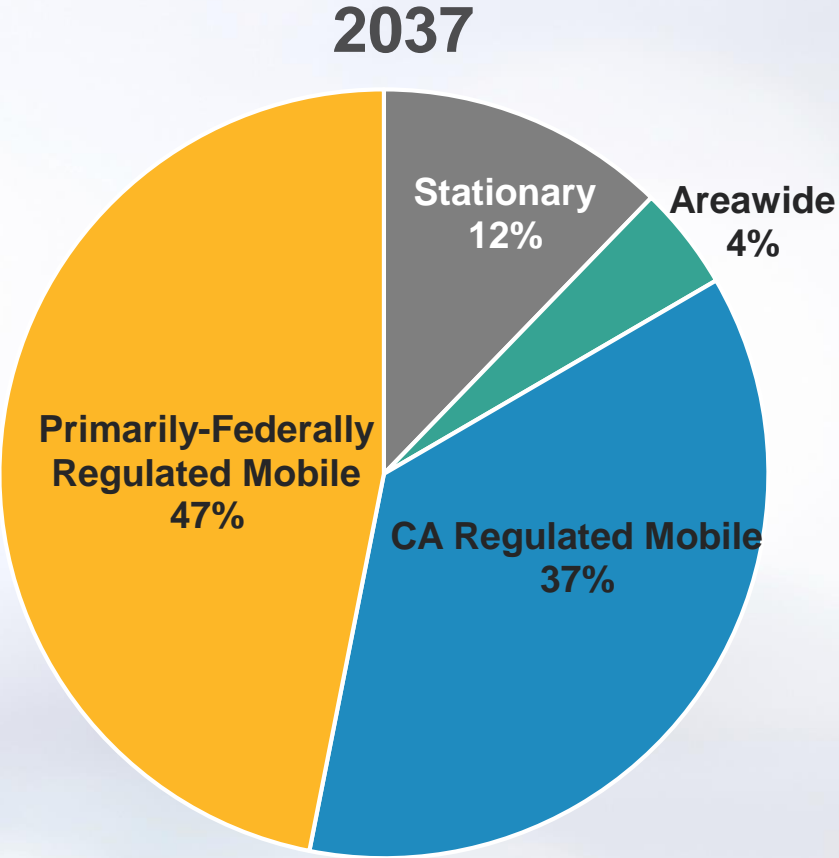


267 tpd of NOx

South Coast Air Basin NOx Emissions Contributions

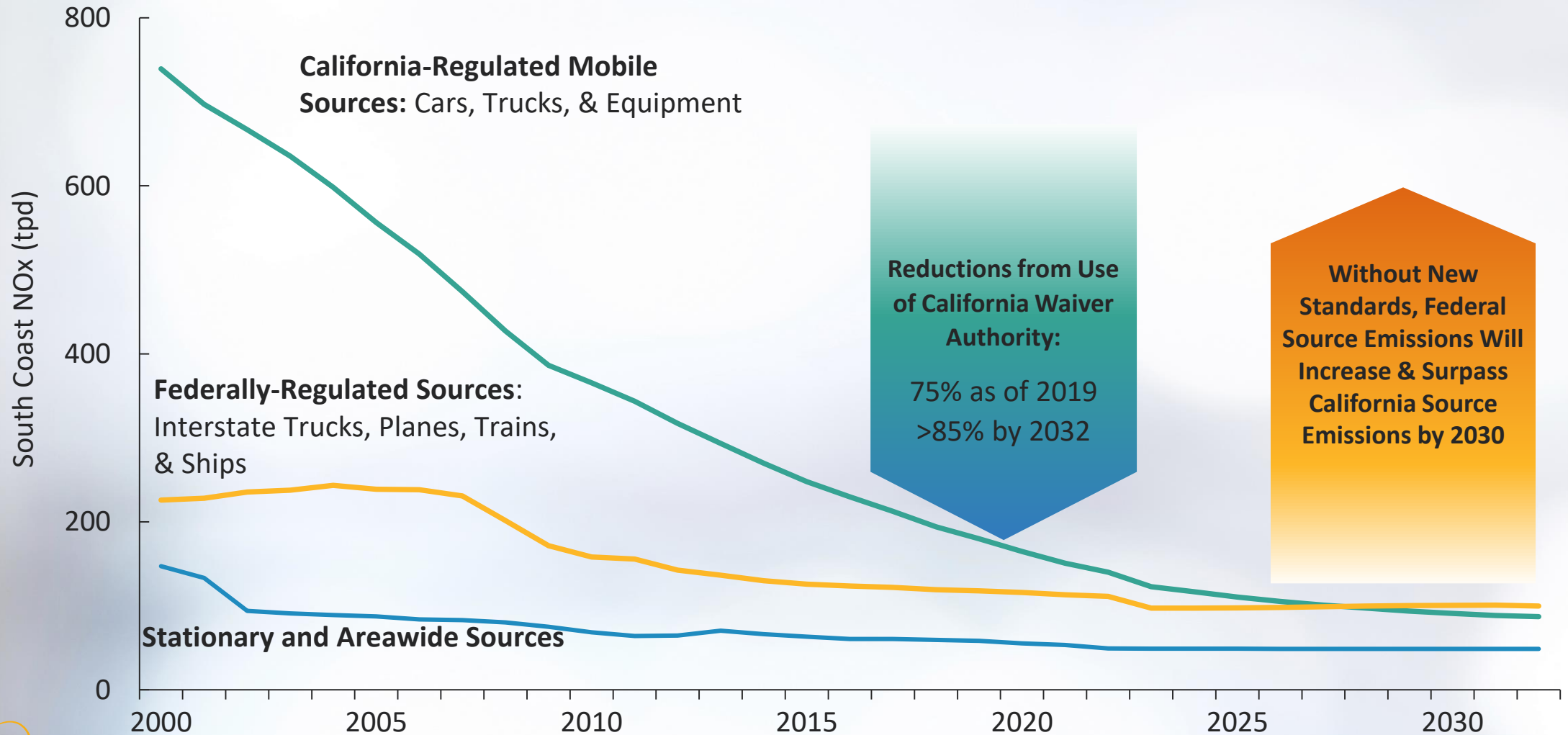


1156 tpd of NOx



227 tpd of NOx

Federal Action is Critical

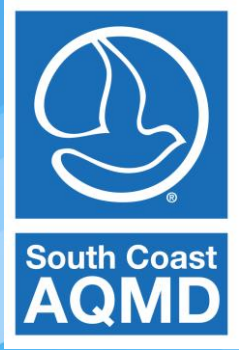


Urgent Needs for More Action

- South Coast residents deserve to breathe healthy air, and there are pressing federal deadlines to achieve.
- Communities near freight hubs and routes are suffering particularly acutely.
- Climate change adds to the challenge.
- CARB is committed to partnership to move us all forward, urgently.
 - Taking action now on regulatory packages, from heavy-duty inspection to rules driving zero emission vehicles into the fleet, and working to implement incentive programs.

Much to Do, Together

- CARB collaboration on adoption and implementation of mobile source measures (on-road/off-road)
- Indirect Source Rules for Railyards and Ports
- Improvements to Incentive Programs – with a focus on harder-to-decarbonize vehicles and fleets
- Federal partnership on new rules for trucks, locomotives, off-road vehicles, planes, and ships.
 - Includes appropriations to CEC , GO-Biz, and CalSTA
- Continued partnership with other governments, communities, and the private sector



Attaining Air Quality Standards in South Coast AQMD

Joint Presentation by staff from South Coast AQMD, CARB, and EPA

Overview

- Two Key Challenges
- Air Quality Background
- South Coast AQMD and CARB Actions
- Clean Air Act Requirements
- Potential Path Forward
- Board Discussion

Two Key Challenges

Improve Air Quality

Meet Requirements of
Clean Air Act

Air Quality Background

Regional Pollutants of Concern in South Coast AQMD

Ozone

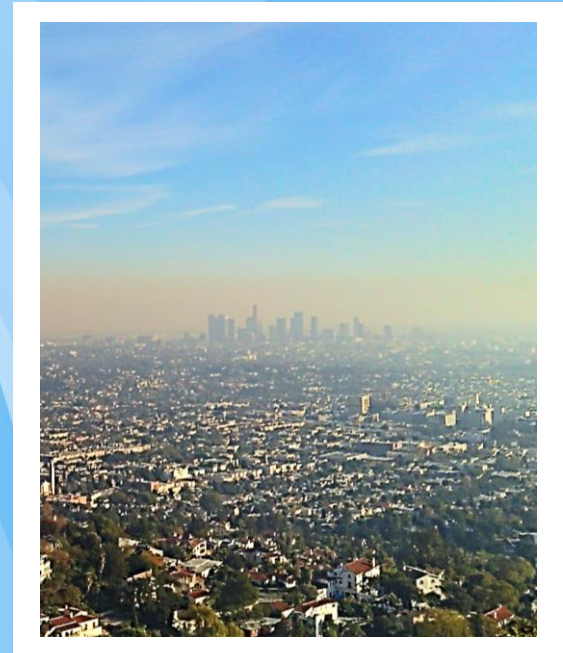
- Not directly emitted
- Formed by reactions of NO_x and VOCs with sunlight in the atmosphere

Fine Particulate Matter (PM_{2.5})

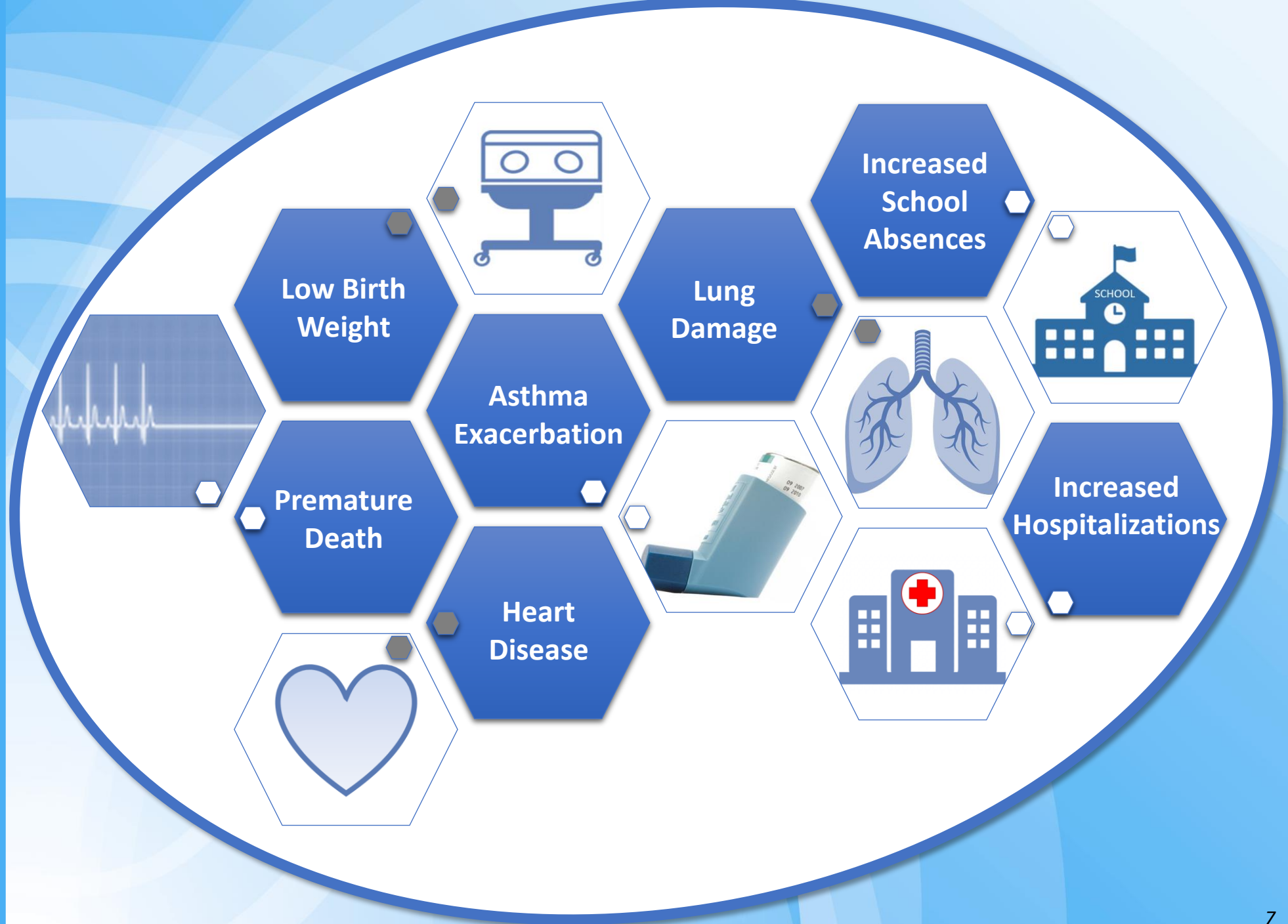
- Directly emitted from combustion sources
- Also formed by reactions of NO_x, SO_x, NH₃, VOCs

NO_x is the key to reducing both Ozone and PM_{2.5} levels in our region

What Are Main Contributors to Air Quality in South Coast?

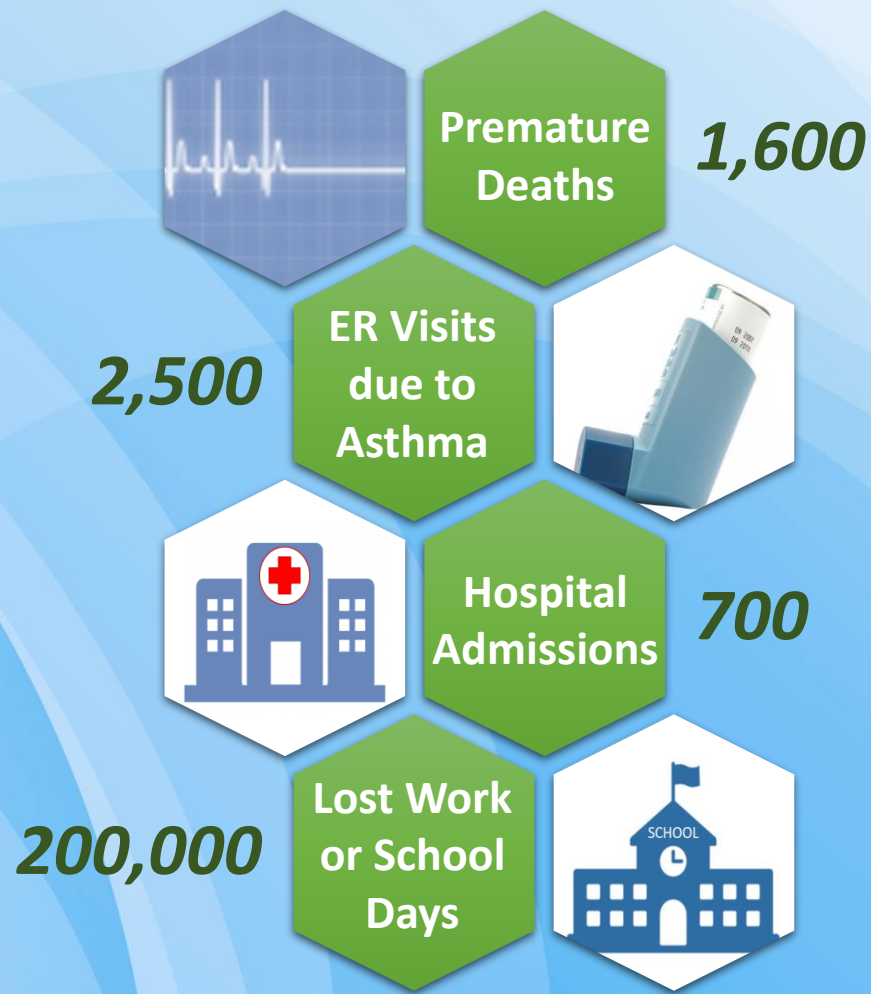


Health Impacts from Ozone and PM_{2.5}



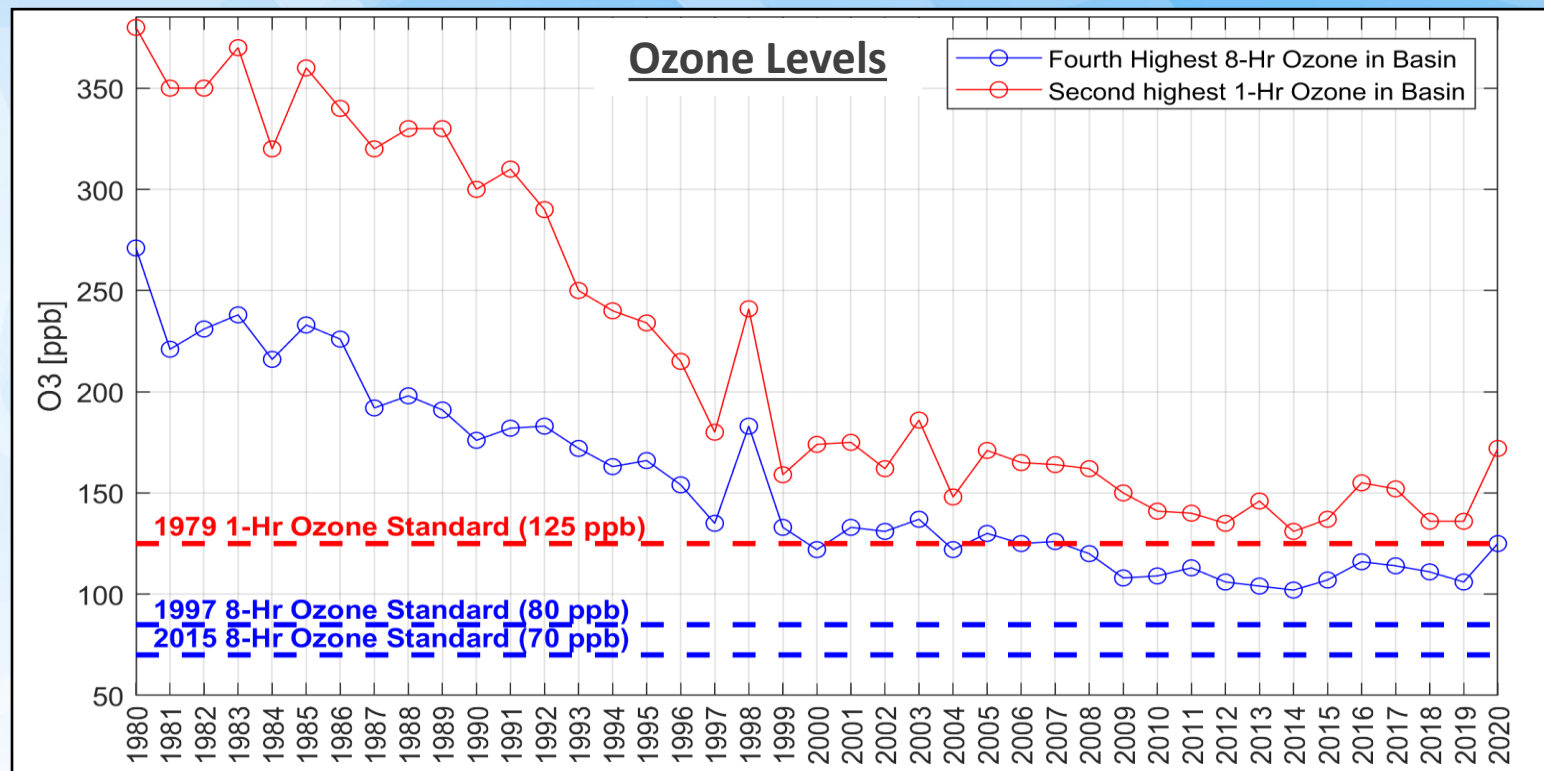
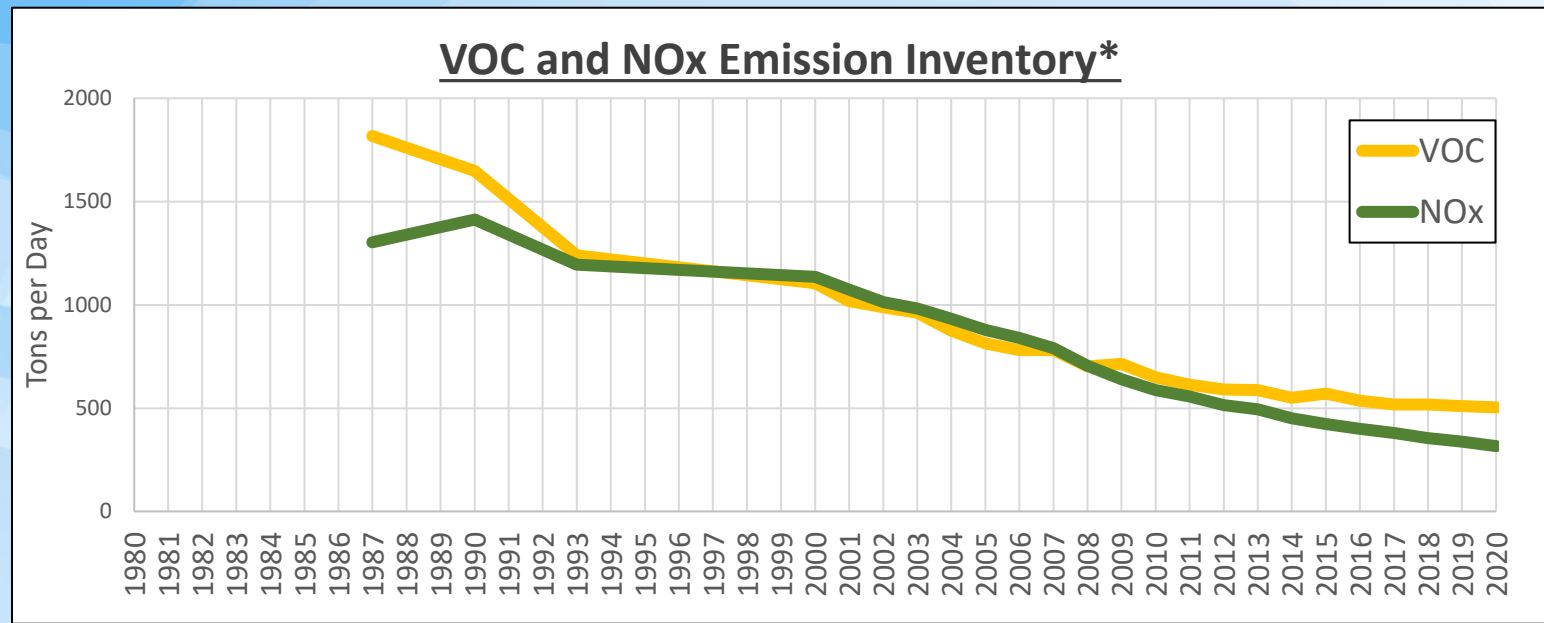
Quantifying Health Impacts

- Staff evaluated potential health benefits of meeting federal air quality standards through 2031
- \$173 billion in monetized public health benefit
- Benefits are 20-25% higher for EJ communities
 - 2/3rd of CA EJ population lives in South Coast



Source: 2016 AQMP

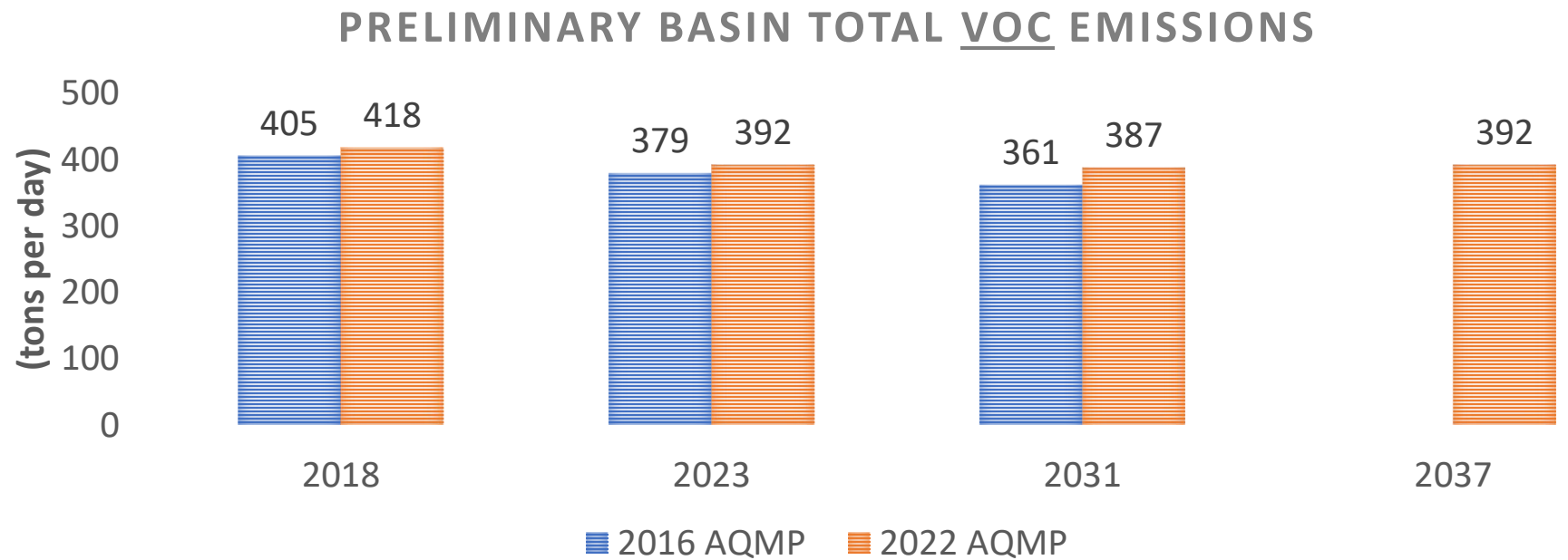
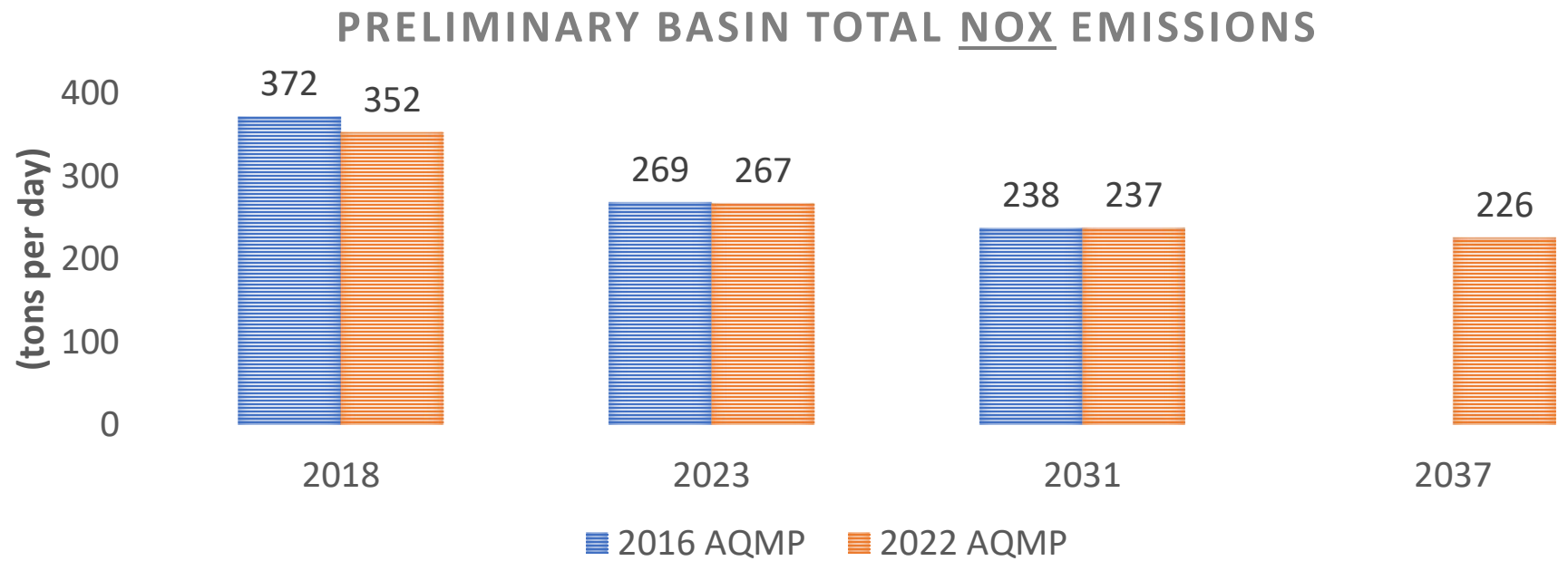
Long Term Trends – Ozone Reductions due to Emission Reductions



*Pre-2000 Emissions from 1997 AQMP, post-2000 emissions from CARB's CEPAM

NOx and VOC Emissions Stagnate Without Future New Measures

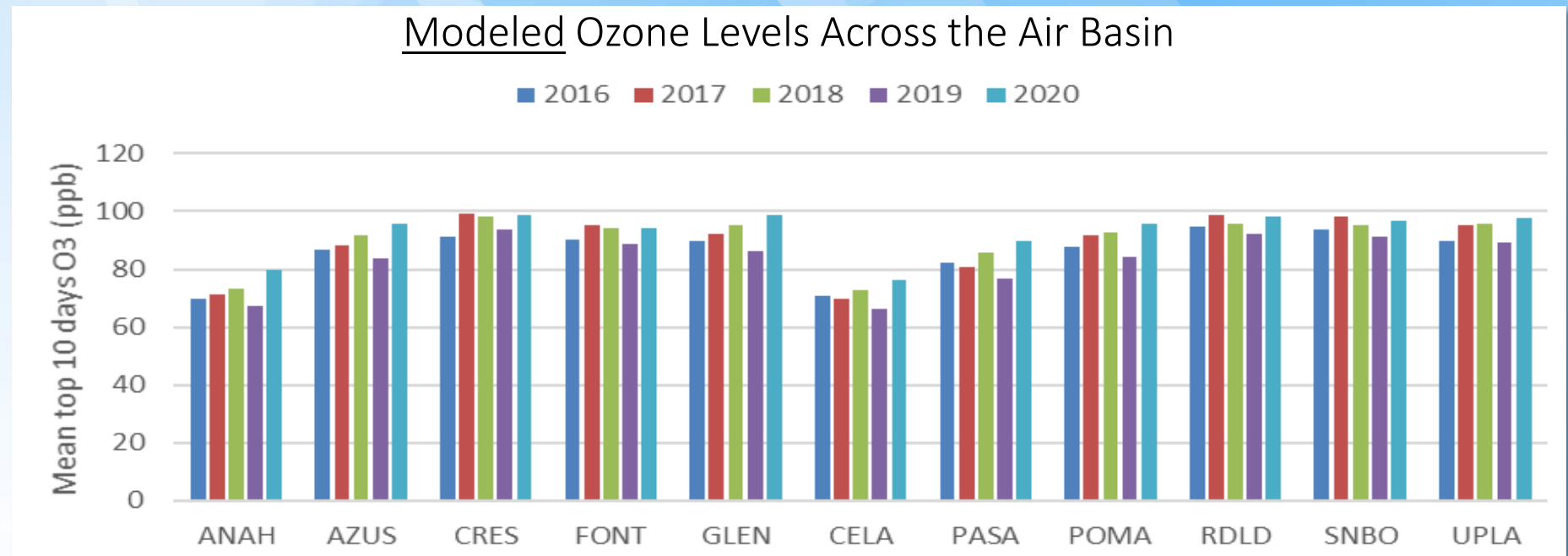
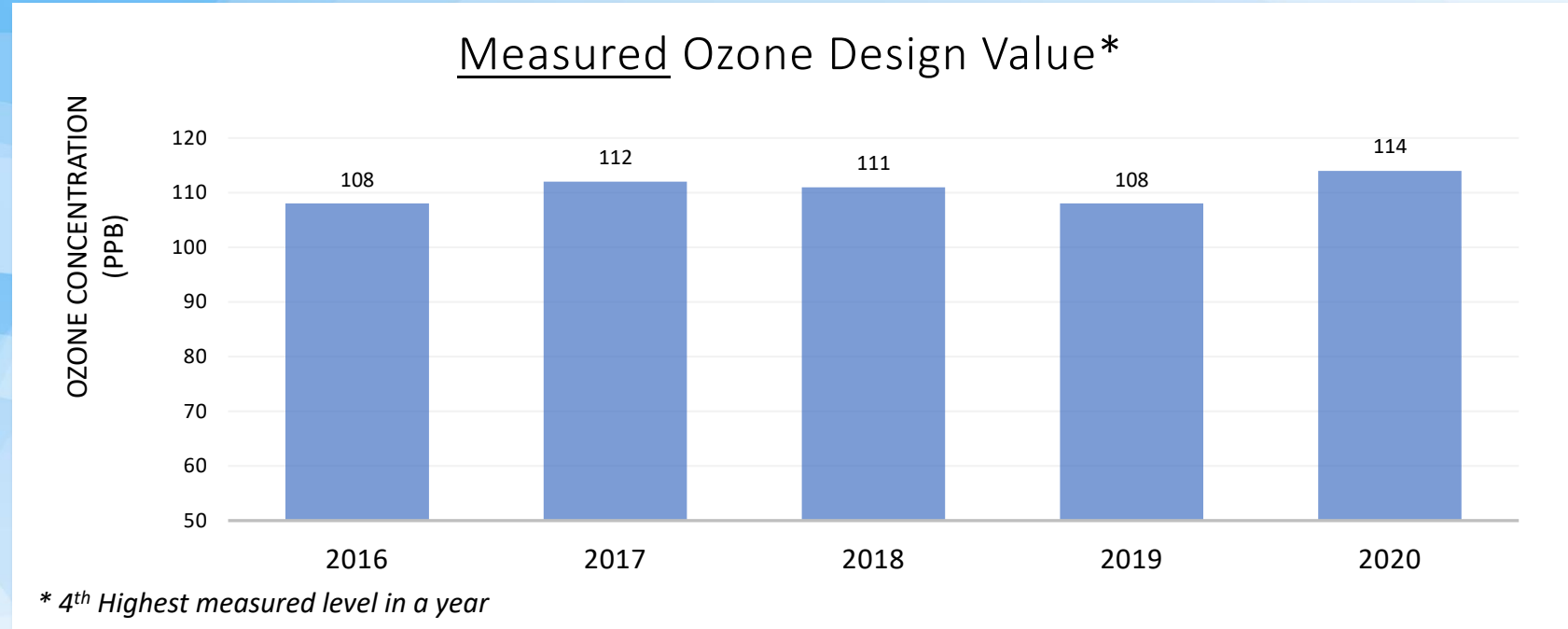
Baseline emissions shown with existing regulations but without future new measures



Recent Trends – Ozone Levels Show High Fluctuation Year to Year

Potential causes evaluated with staff analysis and a study by UC Riverside researchers

- Meteorology
- Emissions

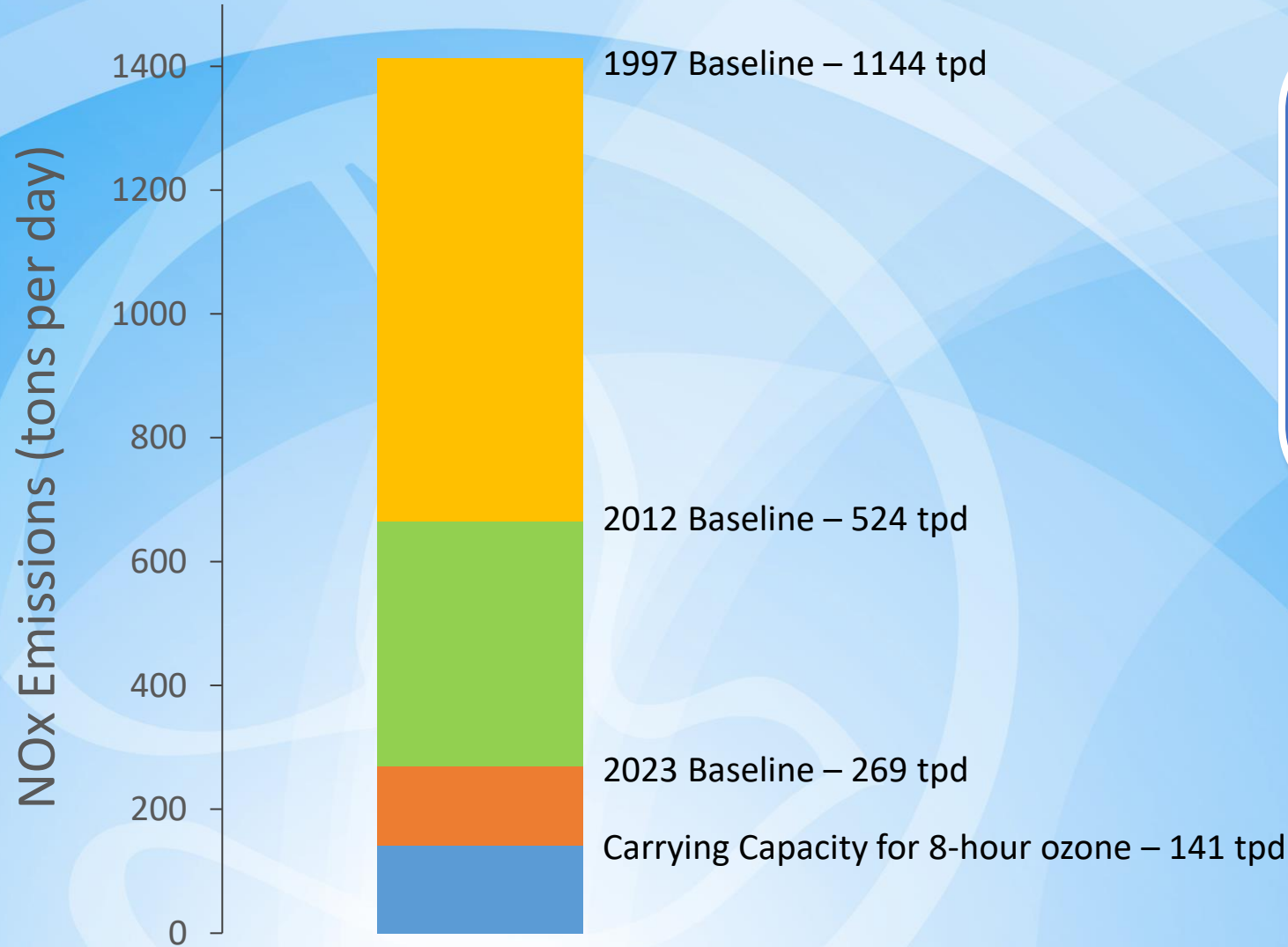


Summary of Air Quality Background

- Regional air quality continues to present a significant public health challenge, especially for disadvantaged communities
- Year-to-year variation in meteorology can significantly affect ozone levels
 - Current state-of-the-art modeling shows that year-to-year meteorology is expected to have a greater effect than potential impacts from climate change on the timescale of upcoming attainment dates
- Despite recent fluctuations in ozone, reducing NO_x emissions is still the only mechanism to meet federal air quality standards

South Coast and CARB Actions

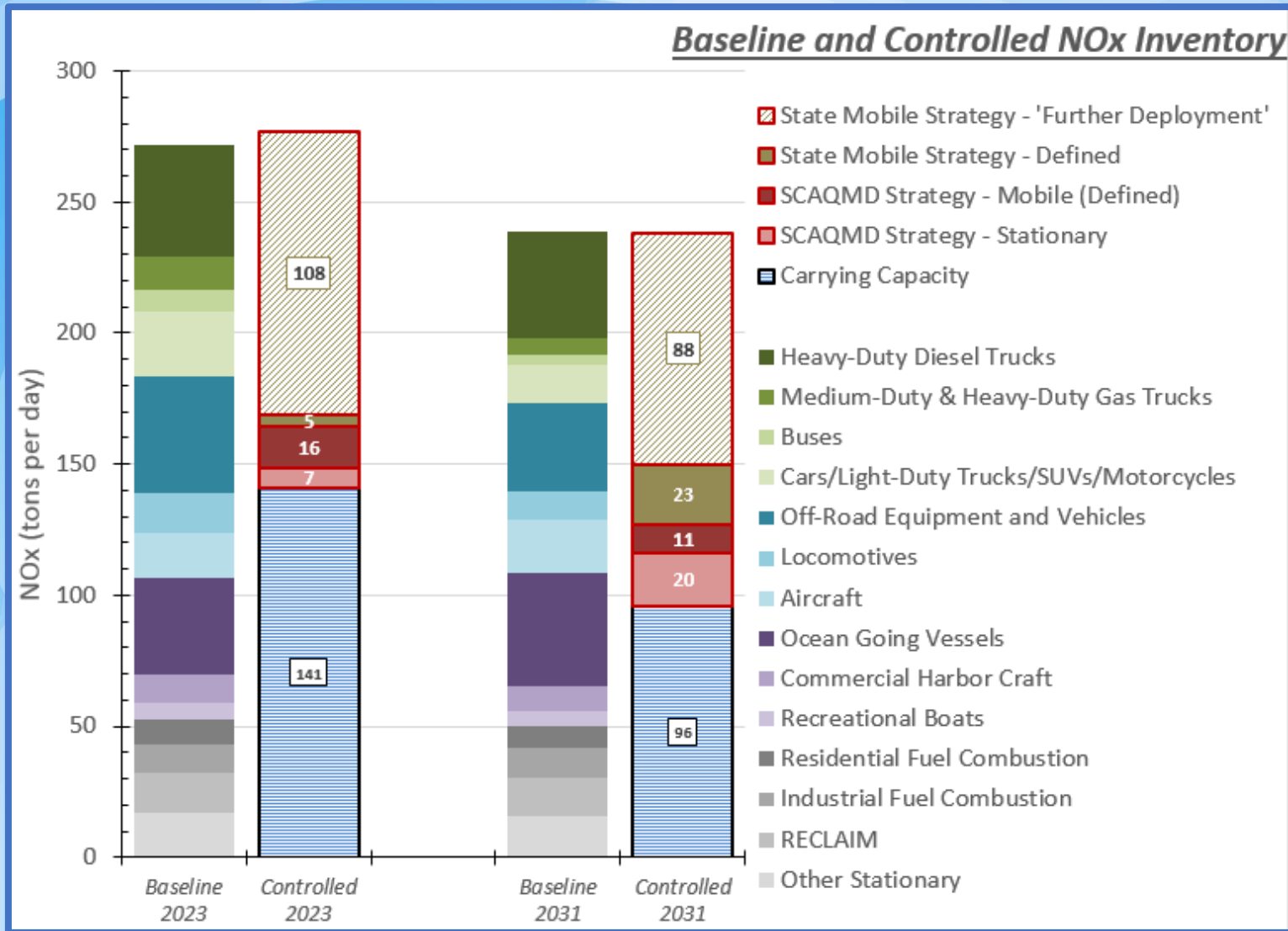
NOx Emission Reductions Progress (tons per day)



- Over 80% of South Coast NOx emissions are from mobile sources
- South Coast AQMD has limited regulatory authority for mobile sources
- EPA/CARB have primary mobile source regulatory authority

Remaining piece to be reduced – 11% of total from 1997

2016 AQMP - Overall Control Strategy (NOx)



SCAQMD Measures:

- Stationary Sources
- Localized Mobile Sources
- Regulatory Paths
- Incentives Components

CARB Measures:

- Mobile Sources
(On-Road, Off-Road)
- Regulatory Paths
- Incentives Components
- Efficiency Gains



South Coast AQMD NOx Regulations and Programs Adopted Since 2016 AQMP (unit in tons per day)

Agency	Measure	AQMP Measure	Adopted	2023		2031	
				Commitment	Adopted to be Achieved**	Commitment	Adopted to be Achieved**
South Coast AQMD	Rule 1135*	CMB-05	2018	5 (by 2025)	0.25	5 (by 2025)	0.40
	Rules 1146, 1146.1, 1146.2*		2018		0.38		0.40
	Rule 1118.1*		2019		0.08		0.17
	Rule 1134*		2019		0.00		1.96
	Rule 1110.2*		2019		0.06		0.29
	Rule 1117*		2020		0.14		0.14
	Rule 1179.1		2020		0.05		0.05
	Rule 1150.3		2021		0.04		0.15
	Rule 1147.1*		2021		-		0.01
	Rule 2305	MOB-03	2021	TBD	0.5 to 1.5	TBD	1.5 to 3.0
	Airports MOUs	MOB-04	2019	TBD	0.52	TBD	0.38
	Incentive Measures	MOB-10, 11 & 14	ongoing	15.9	9.8	10.8	TBD

*Reductions are reflected in the 2015 RECLAIM shave

**Preliminary estimates based on draft 2022 AQMP inventory



Additional Identified Emission Reduction Strategies in 2019 Contingency Measure Plan



Measures Description	Agency	NOx Reductions (tpd)
RECLAIM Transition Rules	South Coast AQMD	2
Ports MOU	South Coast AQMD	3-5
Airports MOU	South Coast AQMD	0.5
Metrolink Locomotives	South Coast AQMD	3
OGV Vessel Speed Reduction	South Coast AQMD	0.2
Funding Incentives (Expected Future Funding)	South Coast AQMD	1.5
Low Carbon Fuel Standard and Alternative Diesel Fuels Regulation	CARB	1.7
ATCM for Portable Engines, and the Statewide Portable Equipment Registration Program Regulation	CARB	0.25
HD Inspection and Maintenance (I/M) program	CARB	4.2
Innovative New Measures	CARB	3.0
Total Reductions Towards Further Deployment Commitment*		24-26 tpd

**Preliminary estimates; also includes 4.2 tons per day of reductions associated with updated OGV emissions inventory and CARB's SIP Strategy for OGV*



CARB NOx Regulations and Programs Adopted Since 2016 AQMP



Agency	Measure	Adopted	Expected NOx Reductions (tpd)	
			2023*	2031**
CARB	ATCM for Portable Engines, and the Statewide Portable Equipment Registration Program Regulation	2017	0.25	TBD
	South Coast On-Road Heavy Duty Vehicle Incentive Measure	2018	<1	N/A
	Low Carbon Fuel Standard and Alternative Diesel Fuels Regulation	2018	1.7	TBD
	Innovative Clean Transit Regulation	2018	<0.1	0.2
	Zero-Emission Airport Shuttle Bus Regulation	2019	<0.1	<0.1
	Advanced Clean Trucks (ACT) and HD Omnibus Regulation	2020	<0.1	7
	Ocean Going Vessels At Berth	2020	1.1	3.6
	Clean Miles Standard	2021	0	<0.1

*For 2023, CARB committed to 5 tpd of NOx reductions for defined measures and 108 tpd of NOx reductions for further deployment measures

**For 2031, CARB committed to 14 tpd of NOx reductions for defined measures and 97 tpd of NOx reductions for further deployment measures

Additional CARB Measures Coming Soon



Measures	Adoption	Implementation
Small Off-Road Engines	2021	2024
Transport Refrigeration Units	2021	2024
Commercial Harbor Craft	2022	2023
Advanced Clean Cars II	2022	2026
Zero-Emission Forklift	2022	2025
Locomotive	2022	2023+
Advanced Clean Fleets	2022	2023+

CARB-District Joint Efforts



- Incentives
 - CARB modifications, including upping Carl Moyer cost-effectiveness
 - Commitment to work with Districts on administrative flexibilities
- Freight facilities
 - CEQA comment letters
 - ISR rules

\$3.9 Billion for Cleaner Vehicles

- First installment in proposed multi-year ZEV Package
 - Totals \$3.9 billion across three budget years
 - Includes appropriations to CEC , GO-Biz, and CalSTA
- For FY 2021-22 the appropriation to CARB includes:
 - \$565 million for Low Carbon Transportation
 - \$838 million from the General Fund
 - \$86.5 million from the Air Pollution Control Fund
 - \$28.64 million for the Air Quality Improvement Program (AQIP)
 - Includes \$45 million for near-zero vehicles



Summary of South Coast/CARB Actions

- Achieved substantial reductions in NO_x emissions over the last 20+ years
- Additional measures identified to achieve the standard by 2023 are insufficient
- Approximately 2/3 of the emission reductions needed are from sources subject to federal regulation

Clean Air Act Requirements

Agency Roles

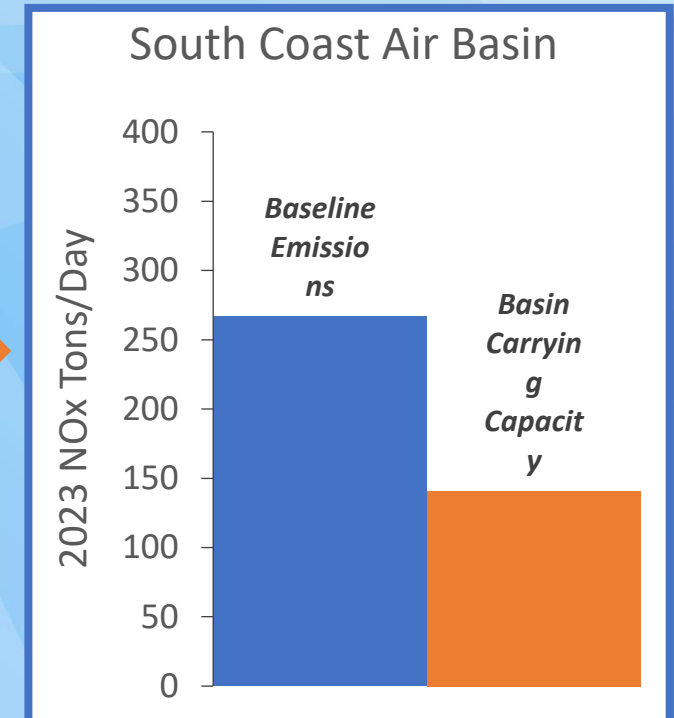
- Clean Air Act establishes a framework for the federal government and state and local governments to work together to meet air quality standards



CA and South Coast AQMD Attainment Challenges

- Upcoming Attainment Deadlines

Standard*	Concentration	Latest Attainment Year
2015 8-hr Ozone	70 ppb	2037
2008 8-hr Ozone	75 ppb	2031
1997 8-hr Ozone	80 ppb	2023
1979 1-hr Ozone	120 ppb	2022
2012 Annual PM2.5	12 $\mu\text{g}/\text{m}^3$	2025
2006 24-hr PM2.5	35 $\mu\text{g}/\text{m}^3$	2019

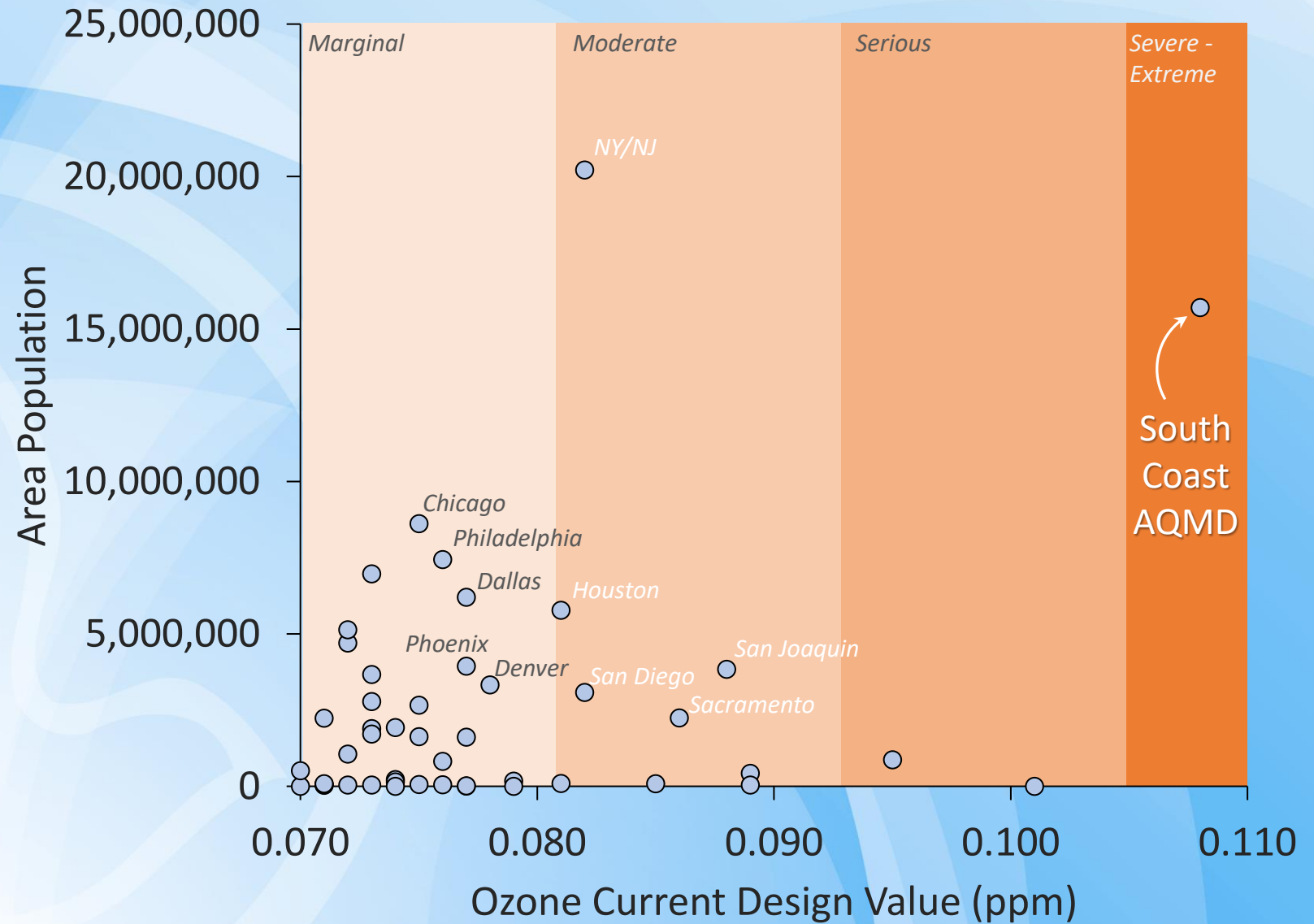


*State air quality standards for ozone (70 ppb, 8-hr) and PM 2.5 (12 $\mu\text{g}/\text{m}^3$, annual) are similar to national standards, however there are no attainment years for state standards. Instead, air districts must 'endeavor to achieve' state standards 'by the earliest practical date'.

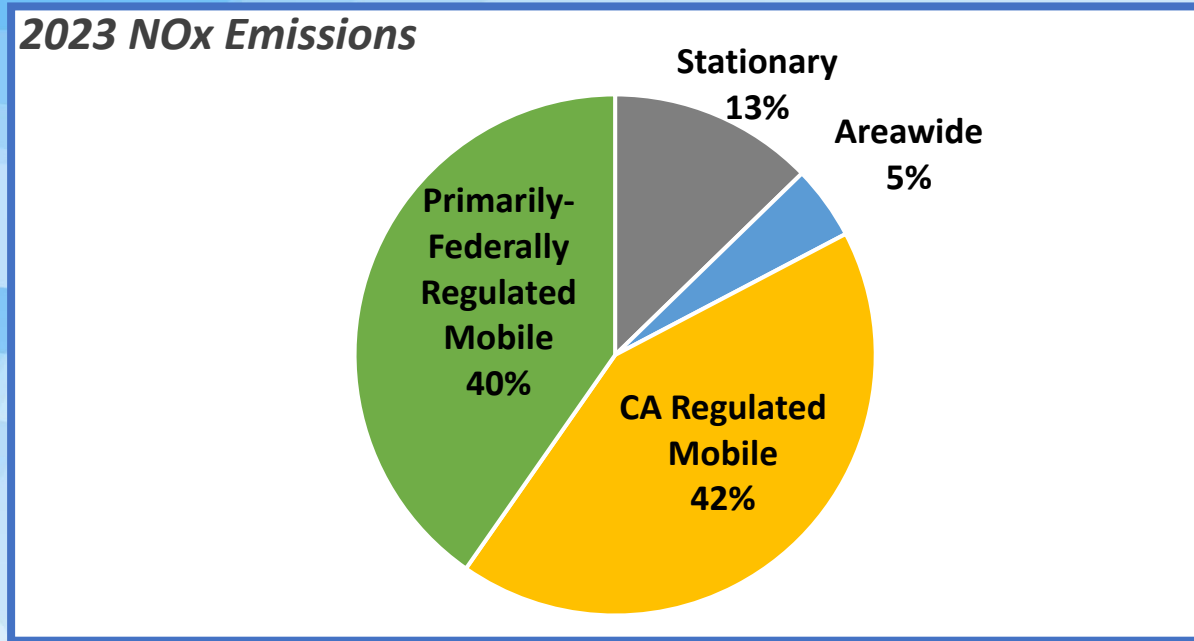
Federal Attainment Challenges

South Coast is unique...but other areas are queued up and facing the same issues

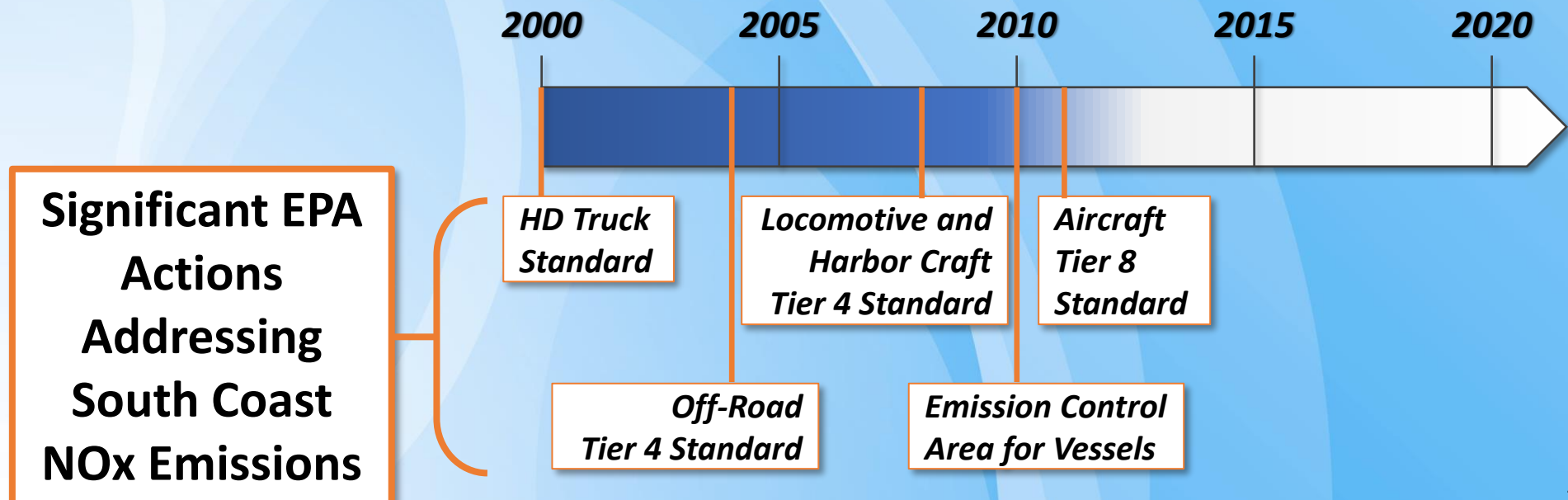
2015 Ozone Standard Nonattainment Areas



Breakdown of Primary Regulatory Authority for Emission Sources



Without New Standards or Programs, Federal Sources Will Increase & Are Expected to Surpass CA Sources by 2028



Consequences of Not Meeting Clean Air Act Requirements

- 1. Region continues to experience worst ozone in the nation***
- 2. Federal consequences**
 - Sanctions triggered by not meeting requirements of CAA, not necessarily by failing to meet air quality standards
 - Examples include failure to submit a plan, or failure to implement a plan
 - Some limited flexibility built into Clean Air Act, however there is significant risk for South Coast AQMD (including litigation)
 - Sanctions persist until deficiency is corrected
 - Near-term potential: 2022-2025 timeframe
 - No additional ozone classifications available

Consequences of Not Meeting Clean Air Act Requirements - Continued

- Potential federal sanctions
 - Withholding of Section 105 funding for South Coast AQMD
 - 18 months after EPA deficiency finding – Increased offset ratio of VOC and NO_x for new and modified major sources (2:1 instead of current 1.2:1)
 - Separately, annual emissions fees for major sources also likely face substantial increase
 - 24 months after EPA deficiency finding – Prohibition on federal highway funding*
 - 0-24 months after EPA deficiency finding – Federal Implementation Plan

The FIP may include measures such as emission caps for airlines, marine vessels and railroads, no drive days, or gas rationing

*Funding for transit and certain safety projects may continue.

Consequences of Not Meeting Clean Air Act Requirements - Summary

1. Continued poor air quality for our residents
 - Poor health outcomes (premature death, higher hospitalization rates, increased asthma, etc.)
 - Tens of billions of dollars per year in monetized health impacts
 - Impact is greater in environmental justice communities
2. Potentially millions of dollars in extra costs on major sources every year
3. Potentially billions of dollars in lost transportation revenue affecting tens of billions of dollars in projects
4. Potentially significant curtailing of economic activity in South Coast

Concluding Thoughts on Clean Air Act Requirements

- South Coast AQMD at significant risk of federal sanctions in next few years
 - Example: No viable path to achieve ozone standard by 2023
- CARB and South Coast AQMD staff will continue to work with EPA to use existing limited flexibility in CAA to extent possible
- Regardless of sanctions, we must develop a new plan to achieve near-term air quality standards as quickly as possible
 - Plan must include realistic measures that have buy-in from relevant federal, state, and local agencies, and should not rely on 'black-box measures'

➤ 2022 AQMP must address 2037 attainment and is not appropriate to address these near-term needs

➤ Absent significant actions outlined in this presentation; it may once again need to rely on a 'black box'

Potential Path Forward

Opportunities to Partner

- Progress is underway at every level
 - South Coast is doing important work on indirect source rules, as well as many other key steps forward.
 - CARB is contributing major rulemakings, including Truck and Bus, Low NOx Omnibus, Advanced Clean Trucks, and Advanced Clean Fleets, among others, and billions in funds.
 - The federal government is moving forward with light-duty and heavy-duty rulemakings, but we need much more.
 - We are eager to continue exploring ways to support and integrate these joint efforts.

Overall Strategy



Near term actions are critical

- Regulations are essential, but **incentive funding** is fastest way to achieve emission reductions
- Current funding programs are too small or are focused on longer-term goals

Near Term Actions – Incentives

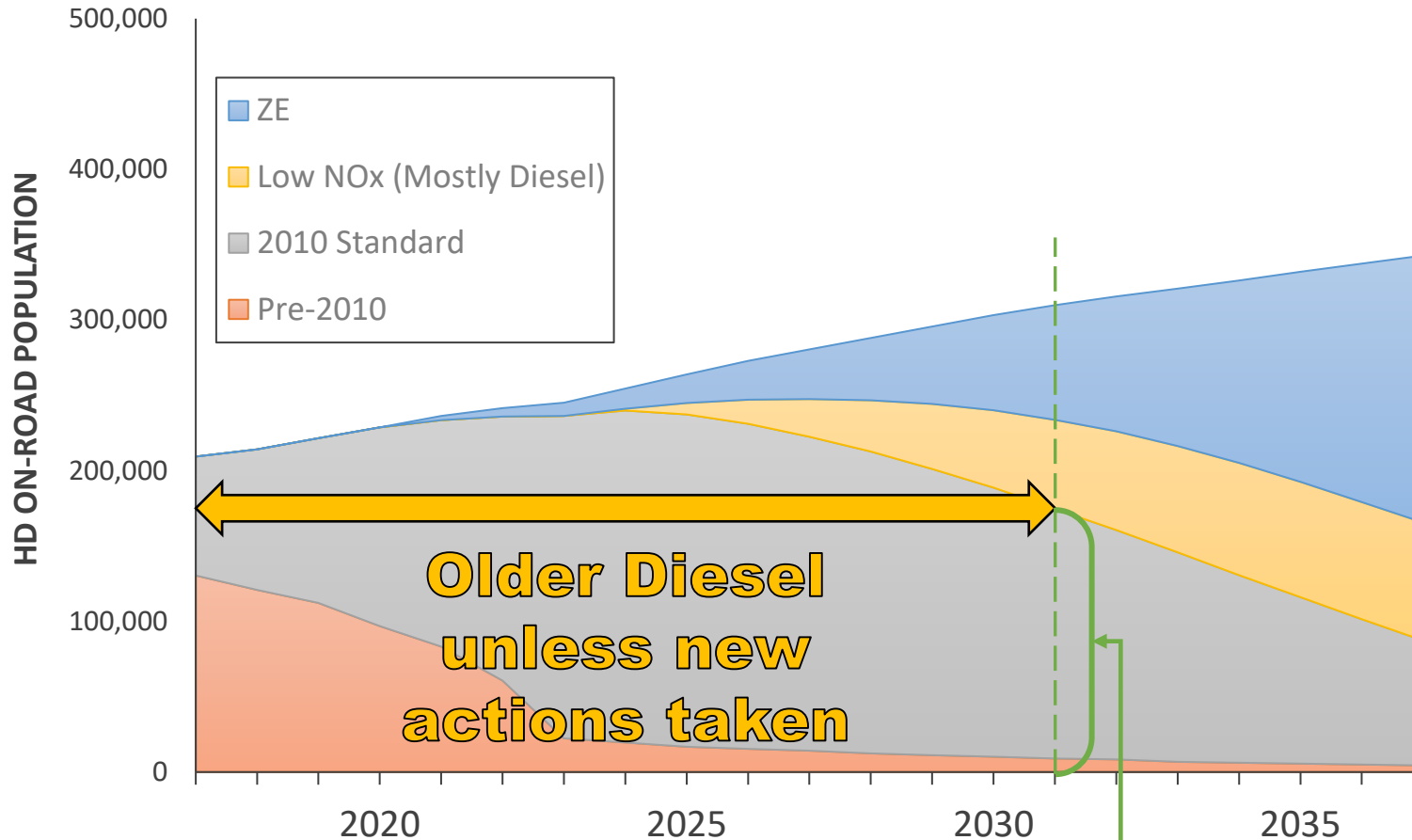
- Advocate that Congress and Legislature increase funding for low NOx technologies in near term
- Request EPA to develop and submit a budget with sufficient scale to support attainment of air quality standards
- South Coast requests CARB to:
 - Assist with incentive programs for near-term reductions – commitment to work with CAPCOA and update guidelines by end of the year
 - Develop new incentive program (HVIP-like, Prop1B-like) and/or establish a Near-Term Attainment Fund

Key South Coast AQMD Near-Term Actions

- RECLAIM sunset / BARCT implementation
- Facility-based measures (warehouse, ports, airports, railyards)
- Implementing incentive programs
- Advocacy with other state/federal agencies and Congress/Legislature
- Development of required Clean Air Act plans, administrative documentation, etc.

Trucks

South Coast HD On-Road Population
with All Existing and Proposed CARB & EPA Regulations



In 2031, 56% of population will still use 2010 or earlier technology

- Requesting EPA to move quickly on Clean Trucks Plan
- Requesting CARB to address the vast majority of the fleet in upcoming ACF regulation
- It is crucial that both these actions reduce emissions as soon as possible

Other Federal Sources



Vessels

- Will become largest NOx source in South Coast
- IMO focused on GHGs in 2050



Locomotives

- CARB analysis shows trucks currently have lower PM2.5 emissions than trains, and will have lower NOx emissions by 2030



Aircraft

- Future emissions will make up more than 1/3rd of entire South Coast carrying capacity by 2037
- ICAO focused on GHGs, largely through renewable fuels and market offsets



Off-Road

- Governor has called for full transition to ZE off-road by 2035
- Most of fleet today is still pre-Tier 4 final

Other Federal Sources – Requests of EPA

- Vessels
 1. Pursue strategies to encourage cleaner vessels
 2. Ensure Tier III reduces NOx at low loads near port communities
 3. Potentially develop optional NOx standards for incentive programs
- Locomotives
 1. Act on CARB petition
 2. Pursue strategies to deploy Tier IV locos in South Coast, and stop remanufacture cycle allowing earlier Tiers to persist
 3. Partner on forthcoming rules from CARB/South Coast
- Aircraft
 1. Accelerate research for lower NOx engines
 2. Pursue strategies to deploy cleanest aircraft to South Coast
- Off-Road
 1. Partner with CARB to develop Tier 5 standard

Need for Other Agencies to Act

- ZE Infrastructure will require significant investment
 - Analysis of 'all-in' cost of ZE infrastructure needed
 - Grid + chargers + land, all vehicle types, etc.
 - Different fuel mix scenarios also needed (H2, electricity, other low carbon fuels)
 - State: Energy Commission and Public Utilities Commission
 - Federal: Dept. of Energy
- Other federal agencies potentially involved with reducing emissions from federal sources
 - Ships: Dept. of State, Dept. of Transp., Federal Maritime Commission, Coast Guard
 - Aircraft: Dept. of State, Federal Aviation Administration
 - Locomotives: Surface Transportation Board, Federal Railroad Administration

Concluding Thoughts

- Achieving clean air in our region can not occur without significant coordinated action from all levels of government
- Specific and tangible steps are available for all of government to do their part
- The time it will take to achieve clean air is dependent on the speed with which all agencies act
 - Business-as-usual will result in significant delay in meeting air quality standards

Diversity, Equity, & Inclusion (DEI) @ South Coast AQMD

Board Retreat Presentation
Friday, September 17, 2021



PRESENTATION OVERVIEW

Fabulous Female Fridays

Acknowledgements

Relevant DEI Terminology

Initial Approaches (First 7 months)

The Justice. Equity. Diversity. Inclusion. (J.E.D.I) Plan (2021-2022)



Data provided in this presentation resourced from Harvard Business Review Fall 2020 Special Issue: How to Fight Racism at Work

Fabulous Female Fridays

Jane Addams

(September 6, 1860 - May 21, 1935)

Jane Addams was an American activist, social worker, sociologist, public administrator and author.

She was an important leader in women's suffrage in the United States and fought for women's right to vote. August 18, 2021, marks the 101 anniversary of 19th amendment and women's right to vote.

In 1910, Addams became the first woman awarded an honorary master of arts degree from Yale University. In 1920, she was a co-founder of the American Civil Liberties Union (ACLU).

In 1931, she became the first American woman to be awarded the Nobel Peace Prize and is recognized as the founder of the social work profession in the United States.

She helped America address and focus on issues that were of concern to women such as education, public health and the environment.

She believed that if women were to be responsible for cleaning up their communities and making them better places to live, they needed to be able to vote to do so effectively.



Action indeed is the sole medium of expression for ethics.

— Jane Addams —



AZ QUOTES

South Coast
AQMD



South Coast AQMD Acknowledgements

We wish to acknowledge the following groups for their diligence, documentation, and data gathering to provide the initial and critical work that informs the upcoming year's efforts.

- *Executive Council and Staff*
- *Inclusion, Diversity & Equity Advisory (IDEA) panel*
- *Asian Pacific Islander (API+) Employee Resource Group*
- *Black Employee Resources of Change (BEROC) Employee Resource Group*
- *Hispanic and Latinos of Success (HALOS) Employee Resource Group*

We are also excited to work with our newest Employee Resource Groups who are assisting in the implementation and demonstration of our DEI efforts.

- *Allies and Advocates*
- *Lesbian, Gay, Bisexual, Trans*, Queer and Questioning, Intersex, Asexual (LGBTQIA+)*
- *Persian Employees*
- *Veterans and Active-Duty Military Families*

Relevant DEI Terminology

Diversity. Contemporary definitions of diversity include a broader array of social identities in addition to race and gender including ability, gender expression, national and geographic origin, spirituality, use of language, generation, age, military and veteran status and political ideology (Byrd & Brunn-Bevel, 2019).

Equity. The practice of providing varying levels of support depending on the specific experiences, needs of a marginalized or minoritized communities or social groups (Harvard Business Review, 2020, p.51)

Inclusion. Acknowledgement of the rapidly changing demographics of US population due to Increased immigration, intermarriage, aging populations, and differential birth rates between groups (US Department of Education, 2016) has facilitated the need to increase competencies of individuals and organizations to meet the needs of diversifying population.

DEO Initial Approach

January –
August 2021

Role modeling: DEI practices and theories

Increase knowledge of the South Coast
AQMD culture

Increase individual DEI capacity and
knowledge through training and events

Purposeful and mindful alignment with
Human Resources division

Advisory role in addressing DEI crises and
issues

Began data inquiry through an intersectional
approach

Groundwater Metaphor to Understand Systemic Racism

“The Racial Equity Institute (REI) has come up with a helpful metaphor for structural racism that illustrates why race is intricately linked to our biggest social problems. Imagine if you find a lake that has one dead fish-most of us would analyze the dead fish. But if you come to the same lake and half the fish are dead, then it makes more sense to analyze the lake. What if there are five lakes and, in every lake, half the fish are dead? Now it is time to consider analyzing the groundwater to find out how the water in all the lakes ended up with the same contaminant. Color-blind approaches misses the structural racism in the groundwater” (Dorsey, Bradach, & Kim, “The Problem with Color-Blind Philanthropy”, 2020, p.51).

Role Modeling: DEI Practices

Many “diversity programs focus on controlling manager’s behaviors as studies show, that approach tends to activate bias rather than quash it. People rebel against rules that threaten their autonomy” (Dobbin & Kalev, “Why Diversity Programs Fail”, 2016).

Approach based on foundational standards

- Foundational standards provide the structural supports for the organization to advance the capacity for DEI work (Worthington, Stanley & Smith, 2020 ,p.3)

Building familiarity & trust

- *Listen to constituents at all levels to be responsive to our diverse communities.*

Be purposefully available/present to increase interactions

- *Joint committees, events, projects, volunteer opportunities*

Recognize, respect, and employ assets of all my colleagues

- *Work with people where they are, not where you think they ought to be*

Assess environment for diverse origins and expectations

- *Consider differing origins, stakeholders have different expectations, issues and concerns with DEI*

Increasing social accountability on DEI issues

- *Involve members of the agency in diversity efforts increases their awareness, knowledge, and engagement.*



Increased Knowledge of Agency Culture

“Senior leaders need to recognize their organization’s inequities- probably more than anyone else, since they have the power to make changes” (Burrell, 2016, p.103).

Attendance in individual, staff, community, and regional AB 617 meetings.

- Participated in courageous conversations with individuals and community members’ DEI experiences.

Meetings with EC members, Board Members, community members, business/industry partners and cross-section of agency employees.

- Gathered informative data on the intersectionality of individual workplaces experiences.

Interactions with IDEA panel and other equity stakeholders to understand past DEI efforts.

- Meeting with Employee Resource groups to understand the diversities of the workplace experiences of communities employed at South Coast AQMD.

Creation of DEI-related best practices network with statewide Equity Colleagues in Bay Area, CARB, San Diego and San Joaquin Valley.

- Monthly meetings - 4th Thursday of every month.



DEI Events & Training Workshops January – August 2021

South Coast AQMD presents:

Lunar New Year Virtual Celebration

188 attendees



Trivia games with good fortunes await you!

South Coast AQMD and the Office of Diversity, Equity, and Inclusion (OEI) with the Inclusion, Diversity & Equity Advisory (LEAD) Panel and Black Employee Resource by Change (BREC) present:

AFRICAN AMERICAN HERITAGE MONTH VIRTUAL COMMEMORATION

THE ROOTS OF STEM: HONORING AFRICAN AMERICAN SCIENTISTS, INVENTORS, AND INNOVATORS

244 attendees

Tuesday, February 23, 2021
4:00 - 5:00 p.m.

ZOOM LINK IN ATTACHED INVITE

JOIN US IN LEARNING THE HERITAGE AND CONTRIBUTIONS AFRICAN AMERICANS HAVE MADE IN THE FIELD OF SCIENCE THROUGH TESTIMONIALS, VIDEOS, AND KAHOOT TRIVIA (PRIZES FOR WINNERS).

Organized by the South Coast AQMD's OEI and the Asian Pacific Islander+ (API+) group

WEDNESDAY, MARCH 24, 2021

Stop the Hate Rally & Vigil

239 attendees

12:00 PM - 1:00 PM



Invite and virtual candlelight background attached

For more information, contact: DiversityEquityInclusion@aqmd.gov

Lunch & Learn

161 attendees

Thursday May 20th
12pm

Asian Pacific Islander+ Group

Come and learn about:

- Why API+ group
- Our draft objectives
- How to join

All District employees are welcome!

A South Coast Air Quality Management employee affinity group

426 attendees

JUNETEENTH WATCH PARTY

Celebrate Freedom

Juneteenth Virtual Celebration: Lift Every Voice and Sing

Friday June 18, 2021
2:00 - 3:30 p.m.

BlkFreedom.org along with ten museums of African American history and culture joined forces to commemorate Juneteenth. Download the attached Outlook invite and we'll see you there!



PERSIAN NEW YEAR

259 attendees

WEDNESDAY, MARCH 24, 2021
4:00 - 5:00 PM

ZOOM LINK IN ATTACHED INVITE

Persian New Year begins with the spring equinox. It is a time to celebrate family, new life and good fortune for the year ahead. Join us to learn more about Persian New Year and celebrate its traditions through music, videos, Kahoot trivia (prizes for winners) and more!

SOUTH COAST AQMD'S OFFICE OF DIVERSITY, EQUITY, AND INCLUSION PRESENTS:

Gender Bias in the Workplace: #ChooseToChallenge

244 attendees

TUESDAY, MARCH 30 2021
4:00 PM - 5:00 PM

Identify how bias shows up in common workplace situations - including hiring and promotions, meeting dynamics, and day-to-day interactions

DEI presentation of examples of bias, shared experiences, and discussing research-backed recommendations for what to do

Commit to one action to #ChooseToChallenge bias this year

RSVP by accepting the attached Outlook Invite

South Coast AQMD's Office of Diversity, Equity, and Inclusion presents:

WOMEN'S HER-STORY MONTH: CELEBRATING WOMEN OF ENVIRONMENTAL JUSTICE

207 attendees

4:00 - 5:00 PM

FEATURING:



Judith Mitchell
Governor Board Member (Ret)

Liara Randall
California Air Resources Board (CARB)

API+ Asian Pacific Islander+ Group

Friday May 28th
12PM-1PM

152 attendees

Inaugural Asian/Pacific American Heritage Month Commemorative Event

Speakers:



Lisa A. Bartlett
Supervisor
Fifth District County of Orange
South Coast AQMD Governing Board Member

Edward Tepporn
Executive Director
Angel Island Immigration Station Foundation

M&H

Joint HR/DEI

August 26 Workshop:
Bystander Intervention:
Reducing Uncivil and Harassing Behavior in the Workplace

501 attendees

Alignment with Human Resources

“Research shows that all too often interviewers prefer people similar to them or focus on gut instinct more than a candidates’ performance”(Burrell, “We Just Can’t Handle Diversity”, 2016).

First-year recommendations from IDEA Panel and Employee Resource Groups focused on supervisor-related responsibilities (such as evaluations) and human resources-related resources (such as training).

- “Cognitive biases lead us astray in a number of ways: we believe work is a meritocracy. We let stereotypes influence our choices. We can assess hiring criteria differently based on someone’s race, gender, ethnicity. . . Changing how our brain works can be difficult but we can mitigate bias by changing our decision-making systems. Carefully structuring how we present information can help us separate opinion from data and rely upon the latter” (Burrell, 2016, p.103).

DEO participates in weekly meetings with Human Resources Team.

- Weekly meetings with Human Resources DEO.
- Weekly planning meetings with HR Management Staff.
- Joint meetings with BEROC and HALOS with DEOs of DEI and HR.

Facilitation and Planning of Joint DEI/HR employee training opportunities.

- How to interrupt gender bias in the workplace presentation – March 2021.
- How to be an Ally in the workplace Mandatory Training August/September 2021.

Participation in South Coast AQMD processes such as Hiring Committees and Administrative Code reviews.

- Review agency procedures and offering recommendations for equity integration language.



Addressing US DEI Crises

“This pandemic has unearthed and magnified structural and systemic inequities” (Roberts, McCluney, Thomas, & Kim, “How US Companies Can Support Employees of Color Through the Pandemic”, 2020).

Ongoing and increasingly hostile and anti-minoritized groups incidents in the US

- Reframe and remind inclusive means “all members of the community”.
- Understand the role of the agency in supporting employees through the pandemic.
- Address bias and prejudice within the organizations and know that it operates individually, institutionally and societally.

Recognizing our own privilege compared to those in the communities we support

- “Occupational segmentation – sheltering in protected environments “like working from home” when other “essential workers” remain exposed in more dangerous and low-paying roles” (Roberts, et. al, Harvard Business Review, 2020).

Executive Leadership Response

- Agency-wide statements of solidarity and support and the challenging of biased, racist, xenophobic behaviors exactly when it happens.
- In-person meetings with Employee Group leadership within 24-48 hours.
- Enacted short-term and long-term, proactive and specific support for both individuals and communities.



Data Inquiry & Intersectionality

Scholars suggests several strategies including keeping track of employee attrition, "taking stock of performance more than position, and cross training and upskilling workers" (Roberts, McCluney, Thomas & Kim, 2020, p.85)

Be data driven and audit all retention and promotion rates in an employee analysis of race, gender, and classification.

- Men and women of different races encounter progression barriers at different levels within the organization (Gee & Peck, "Asian Americans are the Least-Likely Group in the US to be Promoted to Management, 2018).
- "In order to create inclusive workplace environments, data on employees should be segmented by their social identities and collecting qualitative data for underrepresented groups members whose numbers and experiences may not register in a quantitative survey" (McCluney, Robotham, Lee and Smith, "The Costs of Code-Switching", 2020).

Inquiry into agency-wide DEI research initiatives.

- Potential alignment with Government Alliance on Race and Ethnicity (GARE) national climate survey.
- Legacies, historical challenges, fairly new DEI position, and the potential role that fear plays in employees' attitudes about DEI initiatives and approaches.

Disaggregation of Employee Data.

- Race, Ethnicity, Gender Identity/Expression, Ability, Socio-Economic Status, Sexual Orientation, Classification/Position, Generational, and Nationality.



Justice, Equity, Diversity, Inclusion (J.E.D.I.) Approach

To clean the air and protect the health of all residents in the South Coast Air Quality Management District through practical and innovative strategies.

J.E.D.I. Approach to Diversity, Equity and Inclusion efforts in alignment with South Coast AQMD mission and goals:

- *To achieve clean air standards.*
- *To enhance public education and equitable treatment for all communities.*
- *To operate efficiently and transparently.*

The J.E.D.I. Plan 2021-2022

- Staffing & Stakeholders
- Training & Development
- Cultural Observances



J.E.D.I. Staffing & Stakeholders

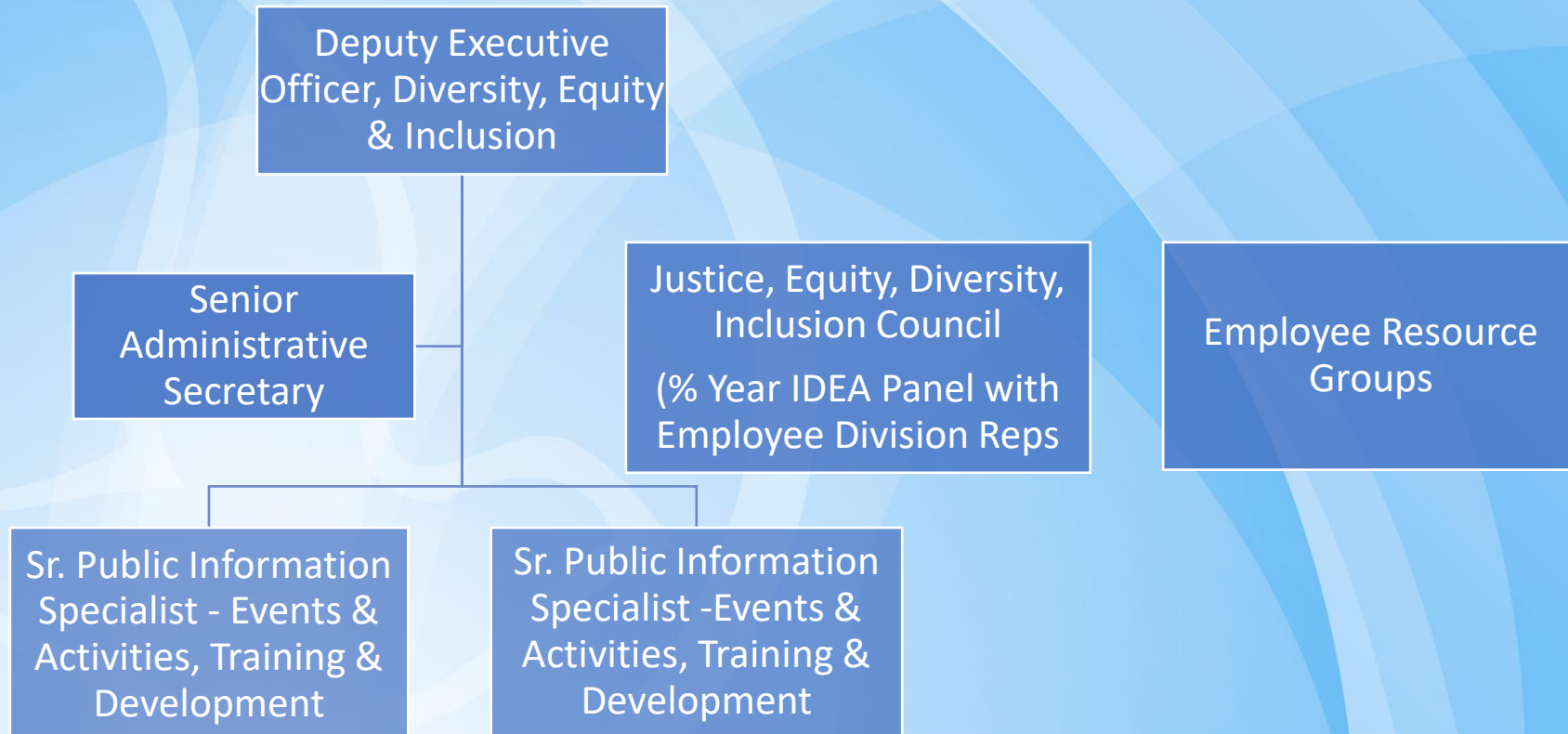
DEI Staffing & Stakeholder Processes Currently Underway

Individual Employee Resource Group (ERG) Recruitment

Executive Leadership Appointment of J.E.D.I. Council Division Representatives

Recruitment of two Senior Public Information Specialists

Career Development Intern Recruitment



Data Gathering: *Equity Roadshow*

“Gathering actual data points motivates, validates, or disproves decision-makers and empowers leaders to take action” (Cross & Braswell, “A Data-Driven Approach to Hiring More-Diverse Talent, 2019).

DEIO meets with Executive Council Divisions

Assess and develop divisional interest and capacity for diversity, equity, and inclusion learning opportunities and trainings.

Gather input from division leadership on the most effective approaches and significant barriers working with their teams.

Identify initial list of divisional staff designees/nominees to the J.E.D.I. Council Agencywide Equity Strategic Planning.



J.E.D.I. Council

“Cross-functional teams help reap the benefits of cognitive diversity. Working together stretches everyone, challenging team members own assumptions and biases” (Williams, “Numbers Only Take You So Far”, 2017).

Members: Selected Year 2 of IDEA Panel + Division Reps recommended to Executive Officer.

- Employees will represent their divisions interests and provide feedback to their supervisor and teams.

Monthly meetings are facilitated by the DEI (DEO) and reports directly to Executive Officer.

- Employees will also serve on one DEIO/HR subcommittee along with members of Employee Resource Groups (ERGs).

Scope: Address specifically identified DEI issues and begin developing the South Coast AQMD Strategic Plan for Diversity, Equity, and Inclusion.

- Elevates 2020-2021 recommendations from IDEA panel, ERGs, and DEI recommendations into action planning.



Employee Resource Groups (ERG)

South Coast AQMD ERGs provide essential cultural capital to our agency by representing the intersection of their group-specific experience with their related South Coast AQMD knowledge and skills.



Lunch-n-Learn About
**Asian Pacific
Islander + Group**
A SOUTH COAST AIR QUALITY MANAGEMENT
DISTRICT EMPLOYEE AFFINITY GROUP
Wednesday, May 20, 2021
12:00 – 1:00 PM



Allies and Advocates Employee Group
Meeting
Thursday, June 24, 2021
12:00 - 1:00 p.m.
<https://scaqmd.zoom.us/j/93310202186>
For those employees who are interested in supporting and advocating for
multicultural issues of diversity, equity and inclusion of the South Coast AQMD



**LGBTQIA+ Employee
Group Meeting**
Wednesday, June 23, 2021
12:00 - 1:00 p.m.
<https://scaqmd.zoom.us/j/91779832037>
Lesbian, gay, bisexual, transgender, queer & questioning, intersexual,
asexual, plus employee group and family of the LGBTQIA+
community are welcome to attend



**PERSIAN EMPLOYEE GROUP
MEETING**
Friday, June 25, 2021
11:00 - 12:00 p.m.
<https://scaqmd.zoom.us/j/95901235176>
Employee affinity groups are employees who
advocate and promote diversity, inclusion and
equity within South Coast AQMD



**VETERANS
EMPLOYEE GROUP
MEETING**
TUESDAY JUNE 22, 2021
12:00 - 13:00 HRS
<https://scaqmd.zoom.us/j/99304612154>
VETERANS, ACTIVE MILITARY, AND THEIR
FAMILY MEMBERS ARE WELCOME TO JOIN

B E R O C
Black Employees Resource of Change

Hispanic and Latinx
Organization for
Success (HALOS)

ERG Work Groups

Organizations can know that DEI programs are helping by “asking employees how things are going is a good first step. To gain deeper insights, however, employers should take the bold step of analyzing employee engagement data by race and ethnicity. . .Doing so indicates truly understanding the way lived experiences may diverge from others within the organization” (Cohen & Gavett, 2019, p. 91).

Based on climate survey, feedback from employees, and DEI organizational development theories, Diversity, Equity, and Inclusion DEO meets:

- Monthly with leadership of each Employee Resource Group.
- Quarterly with the entirety of each group’s membership.
- Conducts an all-member meeting of all seven ERGs three times a year.

Each ERG will provide a representative to the following work groups to address specific agency-wide DEI issues.

- Cultural Observances
- Business/Industry Outreach
- Education/Equity Organization Outreach
- Employee Professional Development
- Employee Promotion
- Employee Recruitment
- Employee Retention
- Equity Resources



J.E.D.I. Training & Development



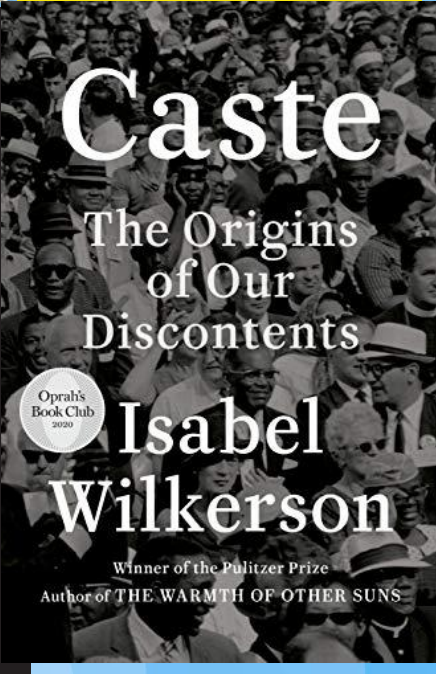
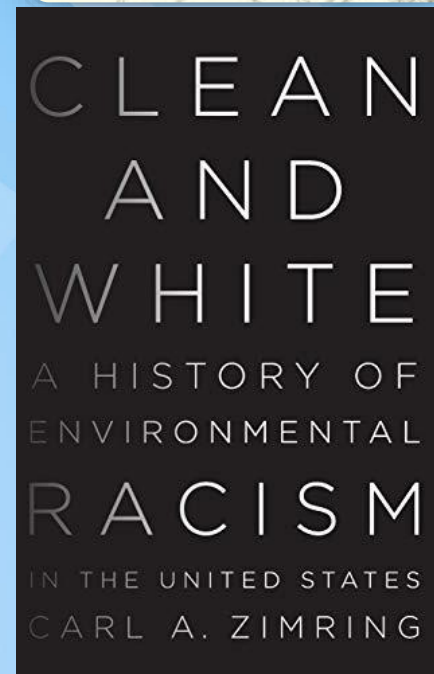
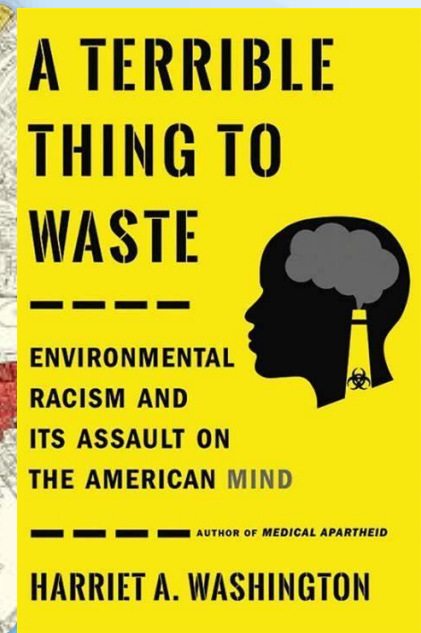
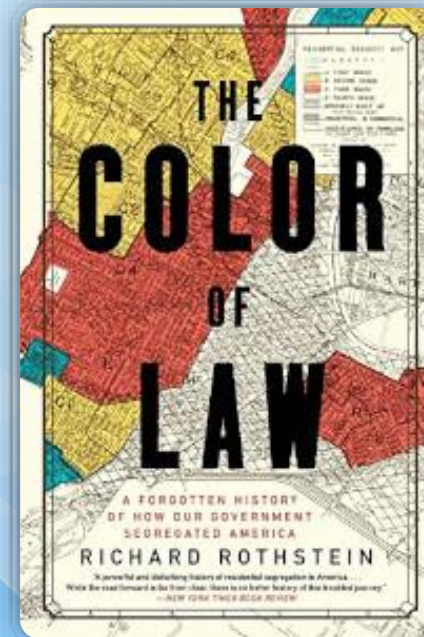
J.E.D.I. Book Club 2021-2022

Organizations need to create cultures of curiosity where people are in a constant state of discovery, learning about themselves, and others” (Cohen & Gavett, *The Day-to-Day Work of Diversity and Inclusion*, 2019).

Purpose: To install common language and understanding of DEI issues and concerns relevant to South Coast AQMD.

A different reading group will meet to discuss three chapters every two weeks.

Beginning September 21 and every two weeks (for a total of four meetings).



J.E.D.I. Think Tanks

3rd Tuesday of Every Month

Purpose: To increase individual critical thinking approaches to DEI problem solving.

Video presentation of an equity related issue, followed by small group discussions.

15 minutes each: webinar + breakout room + large group discussion.



J.E.D.I. Training (4th Friday of the month)



Purpose: To provide ongoing training between October 2021-June 2022 for South Coast AQMD employees who have interest in equity issues but want to increase their knowledge, skills and abilities to navigate workplace circumstances.

Topics will include: Introduction to Social Justice Concepts Race/Racism/Nativism, Sex/Gender/Sexism, Heterosexism Class/Socioeconomics/Poverty, Ableism, Religious Oppression, Ageism and Adultism, Colorism, and Environmental Justice

Text for the ongoing workshops: Readings for Diversity and Social Justice (Adams, 2014).

J.E.D.I. Training Outcomes

Adapted from transfer-level Diversity and Social Justice course curriculum the DEIO has taught at both two-year colleges and four-year universities since 1995.

At the end of the training workshop, employees have:

- Increased individual cultural competencies.
- More culturally responsive work-related skills to address topics related to anti-oppression.
- Increased capacity to identify and interrupt behaviors, attitudes, and beliefs that perpetuate bias and acts of discrimination on individual and systemic levels.
- Increased workplace efficiencies in providing culturally competent services to community members.
- Increased accountability in dealing with intersectionality of employee and community members identities (ability, age, gender, race, nationality, ethnicity, religion/spirituality, sexual orientation).



Cultural Observances

Fall 2021 Cultural Observances

Established in 2020, this calendar acknowledges individuals, causes, federally recognized history and heritage months, and cultural observances. In order to maintain a diverse workplace, our intent is to build individual and institutional awareness and understanding of cultural traditions and holidays and ways in which some have been excluded from fully participating in the expression of their culture.

September 15 - October 15 Hispanic Heritage Month

September 21 Moon/Mid-Autumn Festival

October - National Disability Employment Awareness Month

October 2 Mehregan Persian Autumn Festival

October 11 Coming Out Day

October 11 Indigenous People's Day

November – Native American Heritage Month

November 1 and 2 Dia de Los Muertos

November 4 Diwali

November 11 Veterans Day



Winter 2022 Cultural Observances

Staff are encouraged to share any cultural observances that they would like to see acknowledged throughout the year by contacting the DEI office.

January 15 – Dr. Martin Luther King, Jr. Birthday Celebration

January 27 Holocaust Remembrance

February - African American Heritage Month

February 12 Lunar New Year

February 16 Mardi Gras

February 19 Japanese Internment Remembrance

March - Women's History Month

March 8 International Women's Day

March 17 St. Patrick's Day



Spring 2022 Cultural Observances

During this initial year, events will be a balance of information sharing and virtual meetings and trainings and will be primarily focused on the South Coast AQMD staff.

March 21 Nowruz (Persian New Year)

March 24 Gender Equality Equal Pay Day

March 28 Passover Begins

March 29 Holi (Hindu Festival)

March 31 Cesar Chavez Day

April 4 Easter

Sunday April 7 Rwandan Genocide Remembrance

April 8 National Day of Silence (LGBTQ)

April 8 Yom Hoshoah (Holocaust Remembrance)

April 12 Ramadan Begins; Ends on May 13 Eid al-Fitr

April 22 Earth Day

April 24 Armenian Genocide Commemoration

May - Asian Pacific American Heritage Month

June - LGBTQIA+/Pride Month

June 12 Loving Day

June 19 Juneteenth



Thank you in advance

For your continued support of Diversity, Equity, and Inclusion at South Coast AQMD





Advancing Racial Equity at CARB

Deputy Executive Officer Chanell Fletcher
September 17, 2021

Why lead with Race?

- Racial inequities are deep and pervasive
- Demands for racial justice
- The challenge to focus on our institutions and make changes to become anti-racist
- Specificity matters



Intersectionality is a lens through which you can see where power comes and collides, where it interlocks and intersects. It's not simply that there's a race problem here, a gender problem here, and a class or LGBTQ problem here.

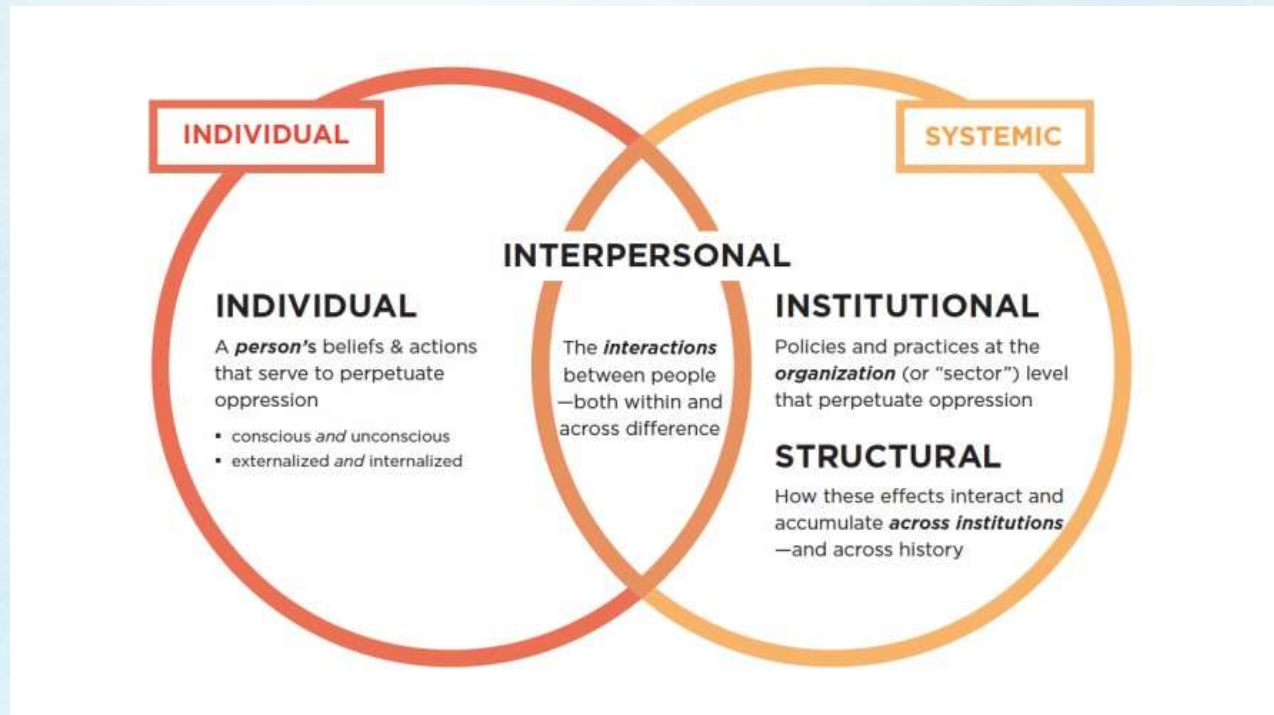
Kimberle W. Crenshaw



Audre Lorde

For the master's tools will never dismantle the master's house. They may allow us temporarily to beat him at his own game, but they will never enable us to bring about genuine change.

Dimensions of Racism



The National Equity Project: www.nationalequityproject.org

Racial Equity Framework

Concept	Takeaway
Individual, institutional, and structural racism	Need to move beyond racial anxiety triggered by focus on the individual and address institutions and structures
Explicit and implicit bias	Does implicit bias training cover white privilege? Systemic racism? These concepts are interrelated.
Racial equity / inequity defined	Equity is about fairness; equality is about sameness Color-blind approach has not worked Know why we lead with race
Historical role of government laws, policies, and practices in creating and maintaining racial inequities	Government has created this problem; government needs to commit to addressing it

Government Alliance on Race and Equity (GARE)

Advancing Racial Equity and Transforming Government: A Resource Guide to Put Ideas into Action

CARB Racial Equity Efforts

CARB
actions
include

Governmental Alliance on Racial & Equity
(GARE)

Board Resolution

Diversity and Racial Equity Taskforce (DaRE)

Narrative Racial Equity Framework

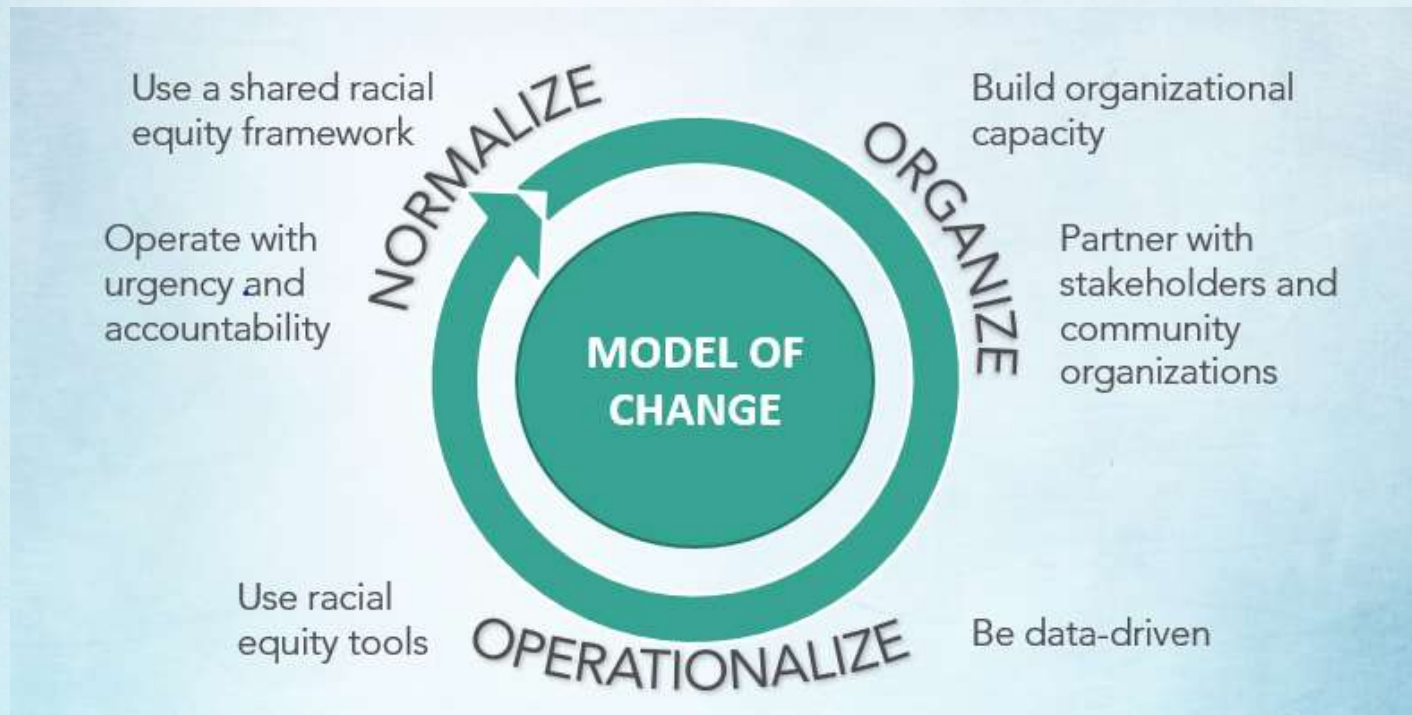
Racial Equity Assessment Protocol (REAP)

Government Alliance on Race and Equity (GARE)

- A national network of government offices and agencies working to achieve racial equity and to advance opportunities for all
- California was the first State in the country to participate in GARE



GARE Model of Change



Draft CARB Model of Change

Normalizing / Awake

- Normalizing racial equity means we work to make it institutionally acceptable to explicitly identify race as a focus for our work in government. We do this by building a shared understanding of a framework.
- Another term you will see/hear in CARB's documents is "Awake" – like normalizing, it is the stage in which the organization focuses on people (workforce) to ensure that they are comprised of different backgrounds with the primary goal of representation.

Draft CARB Model of Change

Organize/Woke

- At its core, organizing is about mobilizing for change and transformation. We do this in two ways: building our own capacity and partnering with others.
- In some equity spaces, this is also called “Woke” – this moves us from representation to inclusion

Draft CARB Model of Change

Operationalize / Work

- By taking steps to deliberately assess our programs, policies and operations with a racial equity lens, and by using racial equity tools, we begin to build a track record of experience.
- In the framework from Equity in the Center, this is called Work—organizations hold themselves accountable to address systemic racism and the root causes of inequities, both internally and externally.

CARB Board Resolution

- Key Actions to advance Racial Equity and Social Justice include:
 - Creation of an Office to focus on Racial Equity
 - Identify and implement best practices for community engagement
 - Diversity and Racial Equity Task Force identify and dismantle systems that produce inequities or racial bias in recruitment, hiring, and promotions

Diversity and Racial Equity Task Force (DaRE)



Co-chaired by Edna Murphy and Rajinder Sahota, the DaRE Task Force strives to address, explore, educate, learn about, and respond to diversity and inclusion needed to be an organization that serves all Californians.

DARE Current Work Efforts

- Racial Equity 90 Day Challenge
- Heritage Month Celebrations
- Glossary of Terms
- Conducting Difficult Conversations Guidance
- Workforce Equity
 - Recruitment Practices
 - Hiring
 - Retention
 - Upward Mobility

Draft Narrative Framework

- **Outcome:** Once complete, this document will describe the conceptual framework and model of organizational change that will serve as the foundation for all of CARB's work on equity that will be guided by the actions recommended in the letter from Black employees as well as other steps we will take to become an anti-racist organization.
- **What is it?** A framework describes racial equity-related concepts and how they fit together. The framework also includes a model of change that is common in organizational change efforts but that has been customized to drive anti-racism efforts.
- **Why do we need it?** A racial equity framework that clearly articulates our vision for racial equity and the differences between individual, institutional, and structural racism—as well as implicit and explicit bias helps establish a shared understanding of these concepts

Racial Equity Assessment Protocol (REAP)

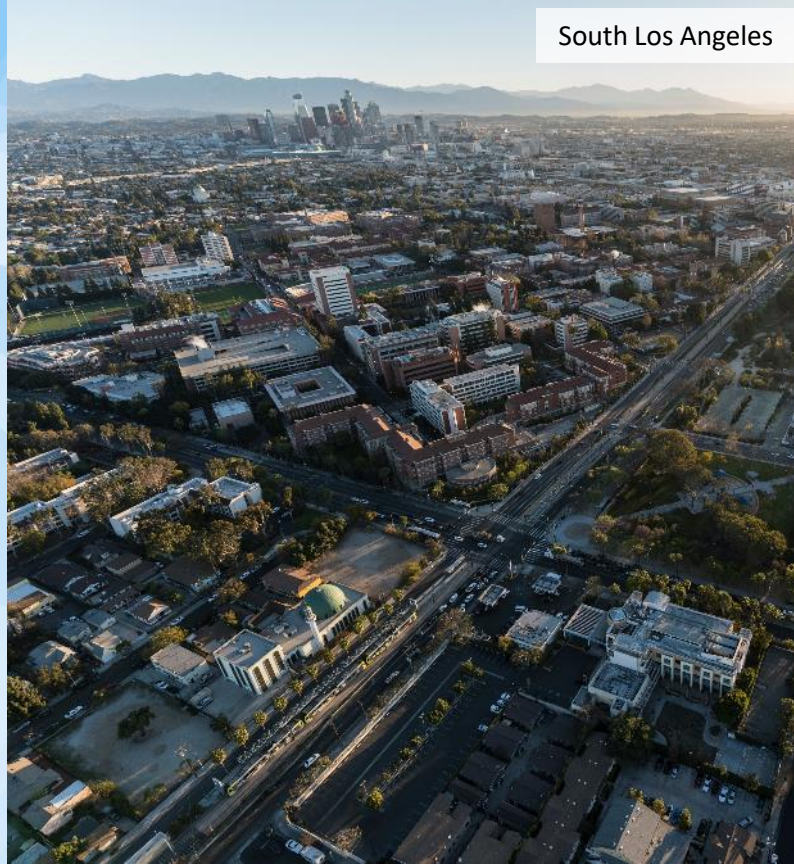
1. Operationalizing racial equity throughout CARB via "REAP" an assessment applied to all CARB policies and regulations going before the Board.
2. CARB's decisions more explicitly, transparently and effectively reflect equity.

“You cannot dismantle what you cannot see. You cannot challenge what you do not understand.”

- Layla F. Saad, Me and White Supremacy



East Los Angeles, Boyle Heights, West Commerce



South Los Angeles



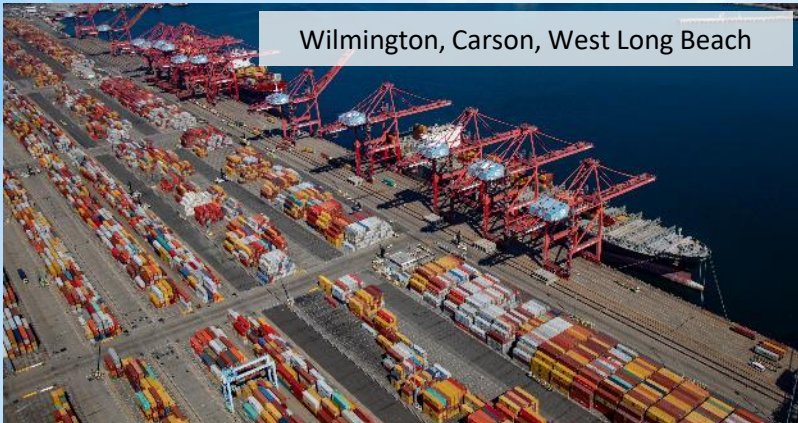
Eastern Coachella Valley



San Bernardino, Muscoy



Southeast Los Angeles



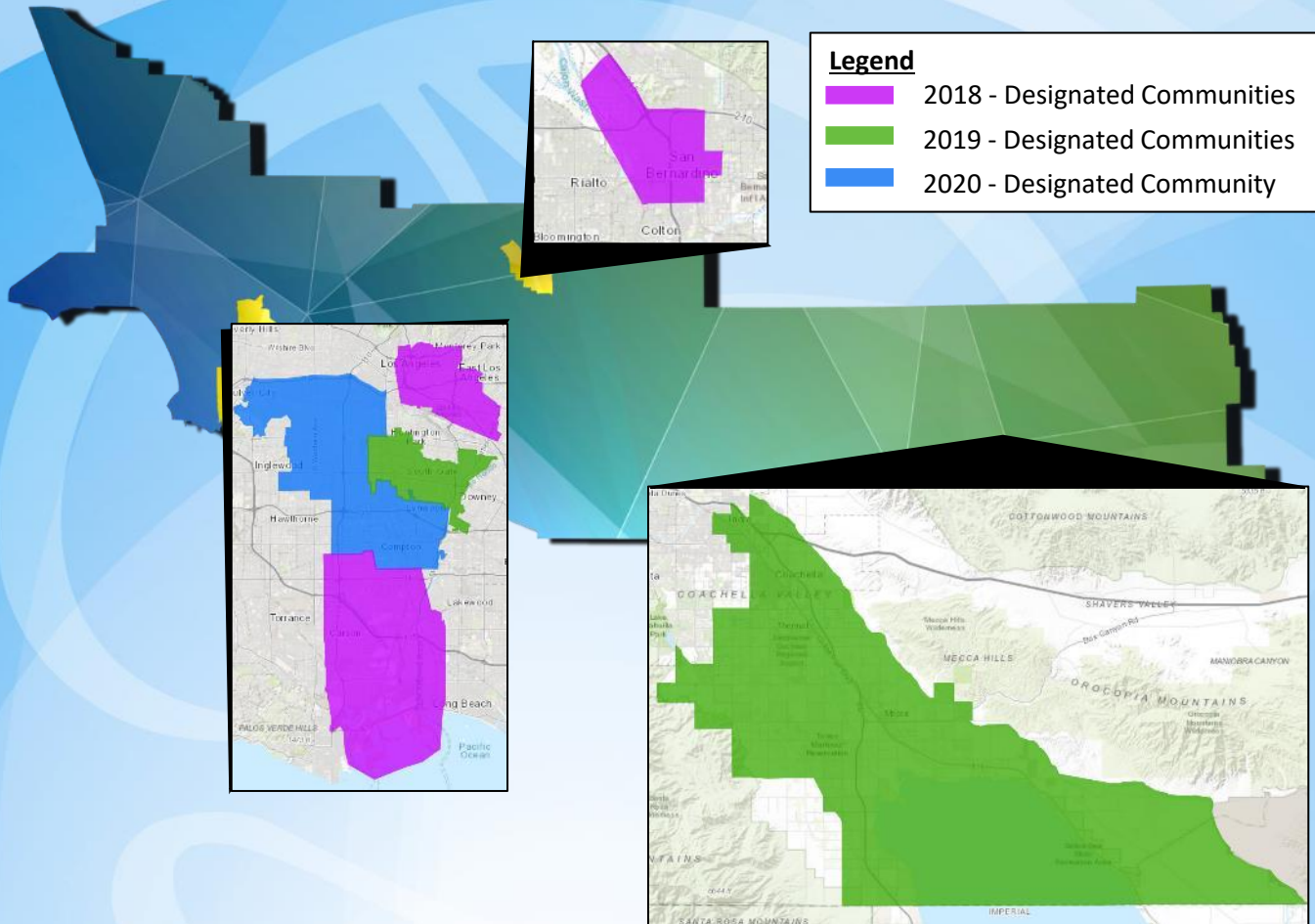
Wilmington, Carson, West Long Beach

AB 617 Implementation Overview

Governing Board Retreat 2021



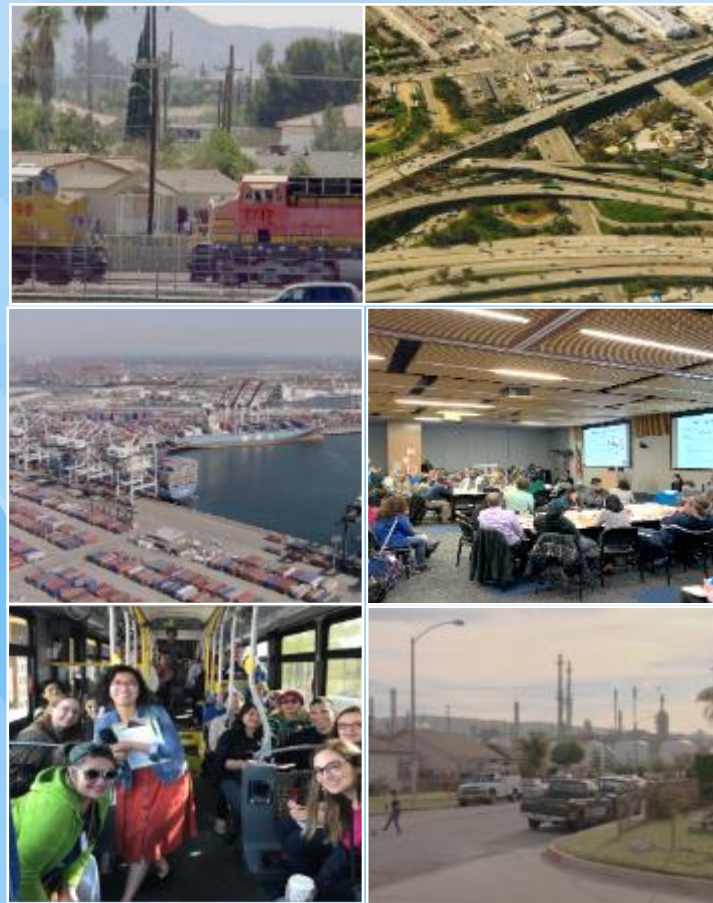
Assembly Bill (AB) 617 Overview



- AB 617 was signed into law in 2017
 - 6 AB 617 communities are in South Coast AQMD
 - 5 adopted **Community Emissions Reduction Plans (CERPs)**
 - 5 finalized **Community Air Monitoring Plans (CAMPs)**

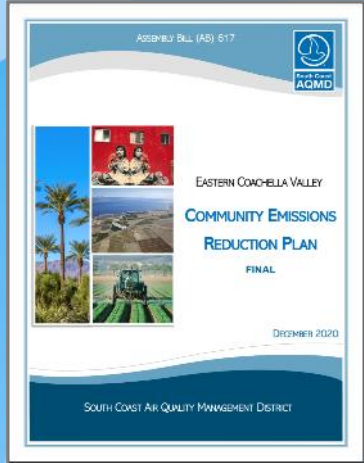
2018 - Designated AB 617 Communities

- **September 2018, CARB designated communities recommended by the Governing Board:**
 - *East Los Angeles, Boyle Heights, West Commerce (ELABHWC)*
 - *San Bernardino, Muscoy (SBM)*
 - *Wilmington, Carson, West Long Beach (WCWLB)*
- **July 2019, staff finalized CAMPs** and began monitoring efforts
- **September 2019, the Governing Board adopted CERPs** and began implementation
- **September 2020, the CARB Board approved CERPs**



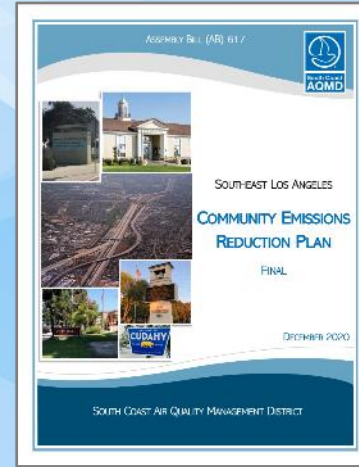
2019 - Designated AB 617 Communities

■ *Eastern Coachella Valley (ECV)*



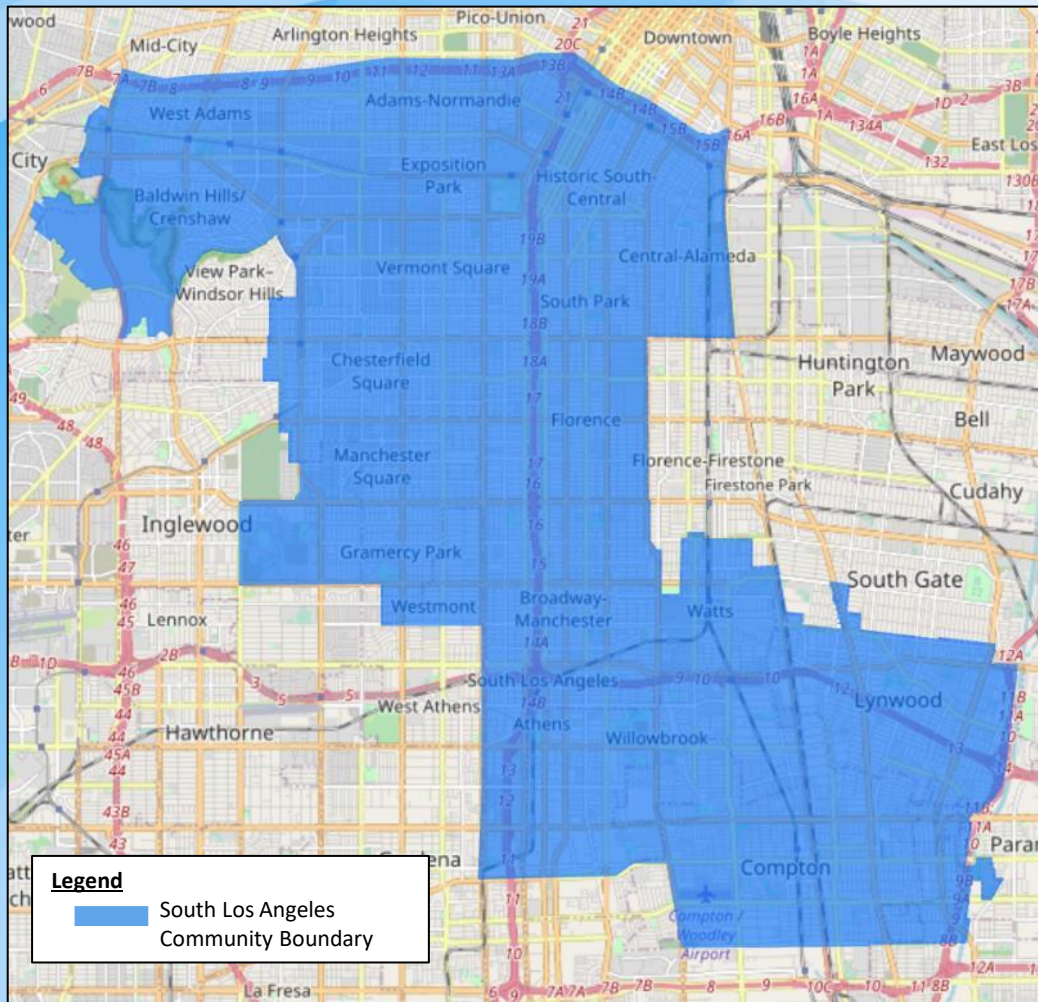
- **Air Quality Priorities:** Salton Sea, Pesticides, Diesel Mobile Sources, Greenleaf Desert Power Plant, Fugitive Road Dust and Off-Road, and Open Burning and Illegal Dumping
- **December 2020**, staff **finalized the CAMP** and began monitoring efforts
- **June 2021**, the Governing Board **adopted the CERP** (amendment), and began implementation
- **September 2021**, CARB Board to consider **CERP approval**

■ *Southeast Los Angeles (SELA)*



- **Air Quality Priorities:** Rendering Facilities, Green Spaces, Metals, General Industrial Facilities, Truck Traffic and Freeways, and Railyards and Locomotives
- **December 2020**, the Governing Board **adopted the CERP** and staff **finalized the CAMP** and began implementing both plans
- **May 2021**, CARB Board **approved the CERP**

2020 – Designated AB 617 Community: South Los Angeles



- Community includes **Compton, Lynwood, Willowbrook, and portions of Inglewood and Los Angeles**
- Utilizing a **co-leadership model** for CERP and CAMP development



WATTS CLEAN AIR & ENERGY COMMITTEE

- **Air Quality Priorities:** Mobile Sources, General Industrial, Oil and Gas Industry, Auto Body Shops, Toxics
- **Other Concerns:** Land use, CEQA review, green space

AB 617 Implementation Highlights

Truck Targeted Sweeps (All Communities)

- 25 sweeps, **817 trucks inspected** across first 5 communities

Oil Well Monitoring & Enforcement (WCWLB)

- **194 inspections with FLIR surveillance**, 8 facilities identified by monitoring for elevated emissions, and **responded to 377 oil well related complaints**

Monitoring (ELABHWC)

- Ongoing **mobile air monitoring measurements** conducted since June 2019; additional mobile air monitoring is being conducted by Aclima Inc.

Incentive Outreach (SELA)

- Worked with the CSC to identify approximately 10 local fleets and small businesses to provide **information on incentive funding for zero-emission technology**

Warehouse ISR (ELABHWC, SBM, SELA, WCWLB)

- **Adopted Warehouse Indirect Source Rule (ISR)** – Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program

Collaboration (ECV)

- Initiated **partnerships with CARB, DPR, OEHHA**, and the **Riverside County Agricultural Commissioner** to address CSC concerns related to pesticides

Community Engagement: CERP Implementation & Development



- CERP Implementation:
 - Quarterly CSC meeting implementation updates
 - Incentive strategy consultation meeting
 - Educational outreach for exposure reductions
 - Collaborations with community-based organizations
 - Technical Advisory Group Meetings
 - Over 100 meetings with community members

- SLA CERP Development:

- Community Kick-off meeting
- Virtual joint Air Quality Conference with PSR-LA
- Monthly CSC meetings
- Over 20 weekly co-lead meetings to discuss CSC charter, meeting topics, approach, and plan development
- Additional co-lead meetings for contracts, charter, and public engagement coordination



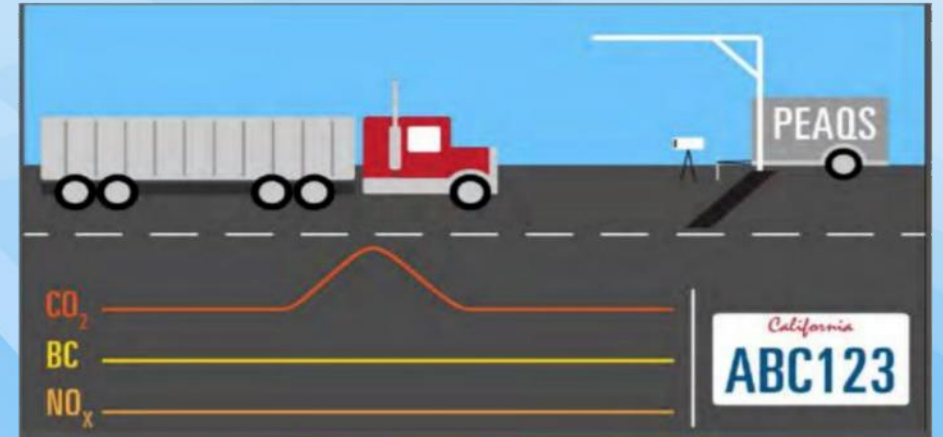
Collaborations With CARB: Pesticides

- The Governing Board amended the ECV CERP in 2021 to add details for actions on Pesticides
- Staff initiated partnerships with CARB, Department of Pesticides Regulations (DPR), the Office of Environmental Health Hazard Assessment (OEHHA), and the Riverside County Agricultural Commissioner to address CSC concerns related to pesticides
- DPR provided a preliminary report to staff for future OEHHA assessments that could inform pesticide prioritization targets for a monitoring study



Collaborations With CARB: Automated License Plate Readers

- Automated License Plate Readers (ALPR)
 - Collects images of passing vehicles
 - Automated algorithm transcribes license plate images to a searchable text file
 - Identifies older trucks to support outreach for incentive funds
 - Informs truck routes planning
- CARB is committed to supporting a one-week ALPR pilot study
 - Study would use a mobile ALPR measurement station in the community
 - To be initiated in ELABHWC (October 2021) and SBM (date TBD)



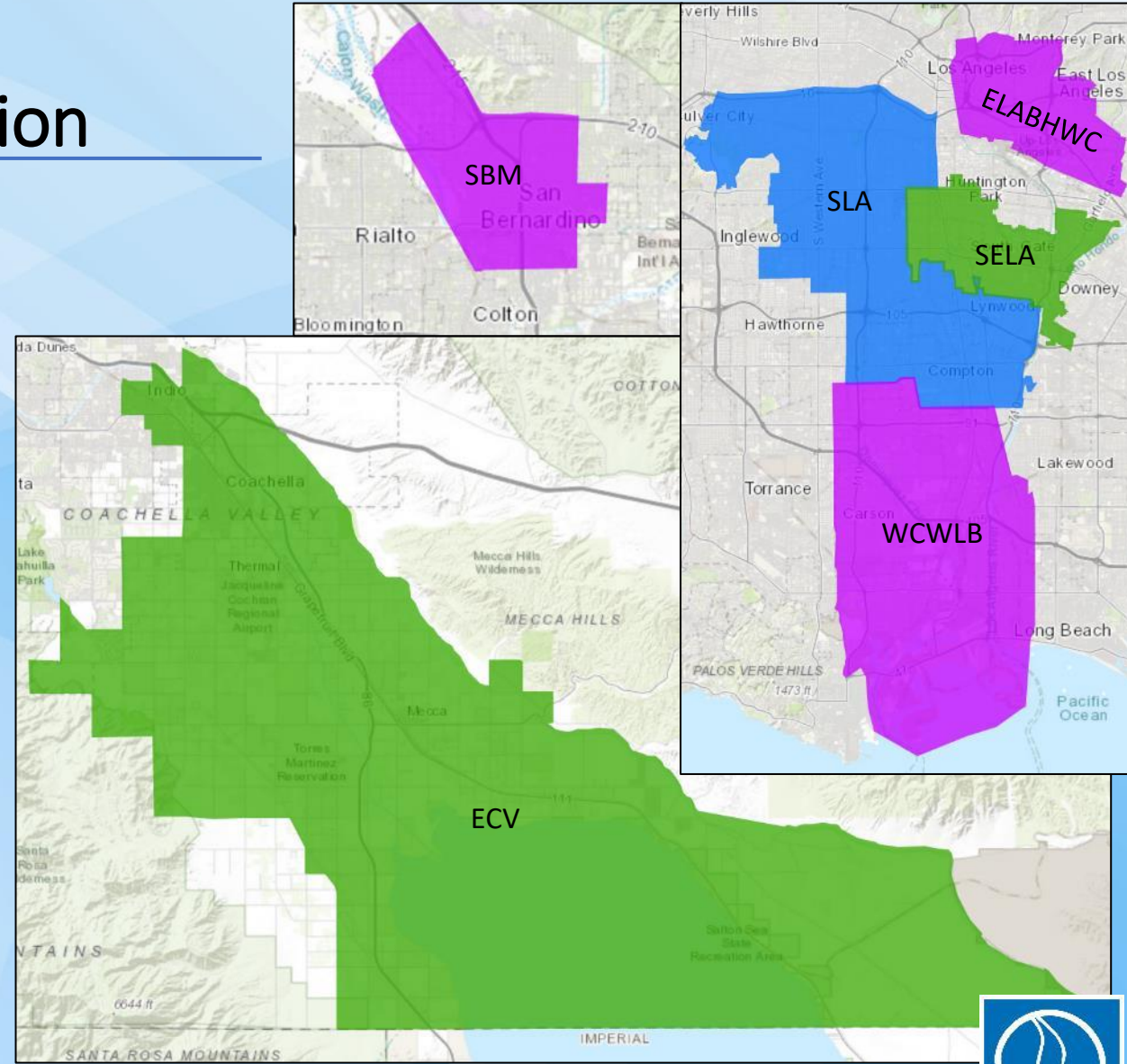
Collaborations With CARB: No-Idling Signs

- Six meetings with City of Los Angeles, CARB, LAPD to coordinate installation of no-idling signs in ELABHWC & WCWLB
- CARB initiating next steps to identify locations in SELA and SBM for future installation of no-idling signs
- Community members conveyed concerns with no-idling regulation exemption for “Certified Clean Idle” stickered vehicles (*especially for idling near warehouse centers*)



Year 4 AB 617 Community Selection

- Staff considering recommendation of no Year 4 formal selection for the AB 617 program
- No increase in annual implementation and incentive funds since 2017
 - Same funding levels despite adding 3 more communities
 - Without an increase in funds, staffing levels are insufficient to add communities
 - Implementation and incentive funds are not guaranteed



Year 4 AB 617 Community Selection (Cont.)



- Pursue informal preparation for Year 5 community selection
 - Work with CARB and community partners to build capacity for future community selection
 - Strengthen community relationships
 - Provide air quality information
 - Identify CSC model for CERP and CAMP development
 - Other (e.g., identify air quality grant opportunities)
- Identify and pursue sustained funding for existing and future AB 617 communities

Year 4 AB 617 Community Selection (Cont.)

- Staff to continue focusing on:
 - AB 617 CERP implementation and development
 - Implementing over 100 actions
 - Covering over 480 square miles
 - Serving approximately 1 million residents
 - Other Environmental Justice Efforts
 - School Air Filtration Program
 - Lower Emission School Bus Program
 - Environmental Justice Community Partnership
 - Annual Environmental Justice Conference





Community Air Protection Program

Chanell Fletcher
September 17th, 2021

CSC Snapshot

Arvin/Lamont/Fuller Acres
South Los Angeles
Richmond/N.Richmond/San Pablo



Developing a Plan

Stockton
E. Coachella Valley
SE Los Angeles
Portside



Year 1
Implementation



Year 2
Implementation

West Oakland
El Centro/Heber/Calexico
Shafter
East LA/Boyle Heights/West Commerce
San Bernardino/Muscoy
Wilmington/Carson/West Long Beach

By the numbers

7 CSCs in 2 nd implementation year	16 Tools to increase access to data as part of Technology Clearinghouse	
Over 700 strategies across all CERPs	9,881 CARB HDDV and Railroad & Marine inspections across all AB 617 communities	52M 2017-2018 incentive funds spent in selected communities
3 statewide regs adopted since Blueprint		92% compliance rate

Themes to Build On



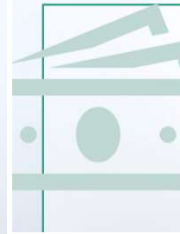
Engage and share power and information with communities



Re examine our District / CARB relationship



Act with urgency and accountability



Reduce emissions and exposures to improve public health




information to understand, compare, and evaluate emissions sources

AB 617 Technology Clearinghouse

Start Here: Background User Guide

Best Available Control Technology (BACT)	Rules and Regulations	Next Generation Technology	Support
BACT Determinations	Air District Rules	Emergency Backup Power - Commercial	Ambient Air Quality Standards Designations
BACT Guidelines	CARB Regulations	Emergency Backup Power - Residential	Training Videos
	Air District Rule - History		Standard Lists

[Feedback](#)

 CALIFORNIA AIR RESOURCES BOARD

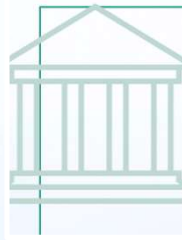
Challenges and Opportunities



Adapt to
Constraints



Change the
model

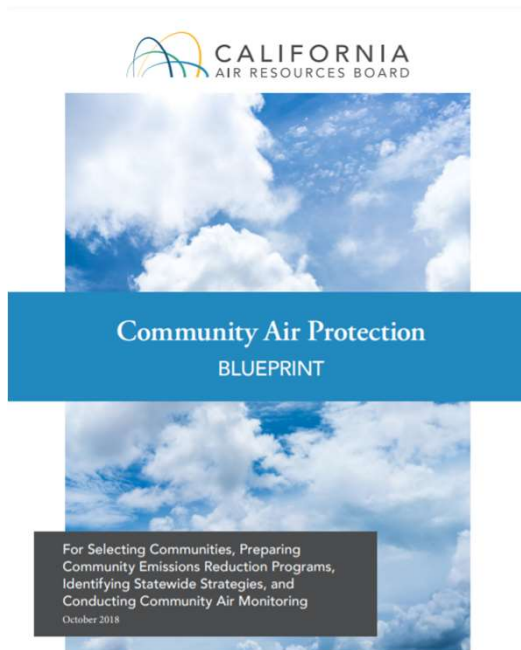


Embrace Co-
Leadership

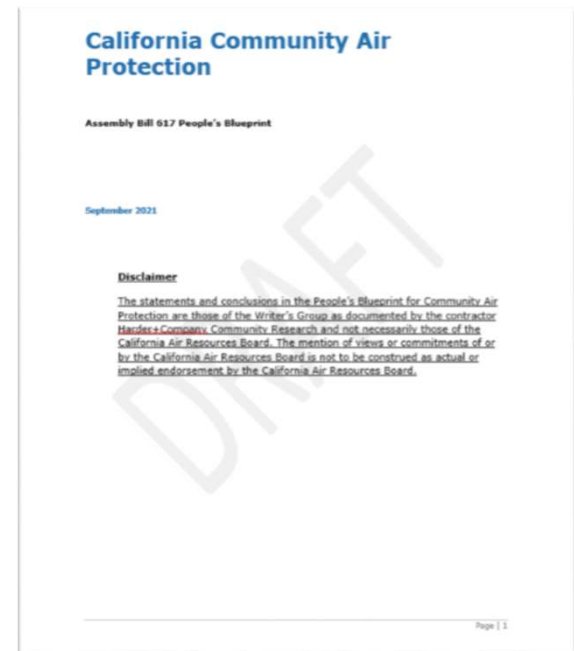
Program Expansion



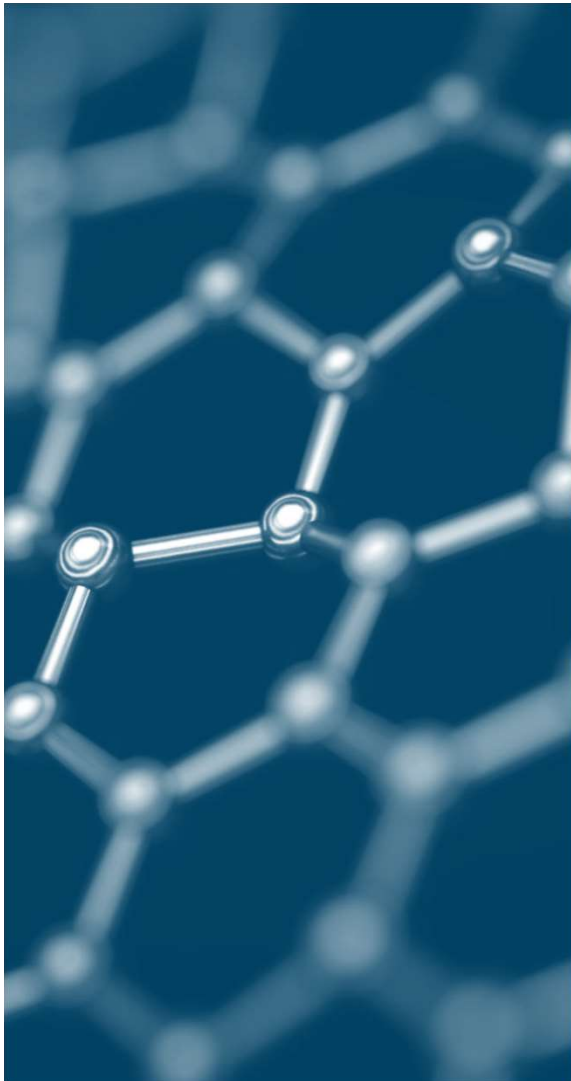
Program Blueprint



September 2018



September 2021



Community Air Protection Convening

The Past, Present and Future of AB 617:
Envisioning a Way Forward, Together

Why	Bring together community leaders to reflect and to envision ways to better meet the goals of the law
What	Designed by EJ Planning Group to Share Learn Discuss
Where	Virtual event, by invitation only
When	September 27 th and 29 th , 5pm to 8pm
Why	Steering Committees Consultation Group Air Grantees Air Districts CARB



SCAQMD Board Retreat Briefing
September 17, 2021



San Bernardino County Employees'
Retirement Association

Topics

- About SBCERA
- SCAQMD's Membership in SBCERA
- Actuarial 101
 - Funding & Contribution Rates
- Employer Contacts

AS OF JUNE 2021



\$13.4 BILLION

TOTAL NET POSITION



43,000

MEMBERS STRONG



33.3%

FISCAL YEAR 20-21
NET RATE OF RETURN



78%

FUNDED (AVA)
(AS OF JUNE 2020)



10.7%

5-YEAR NET RATE OF
RETURN



16

PARTICIPATING EMPLOYERS



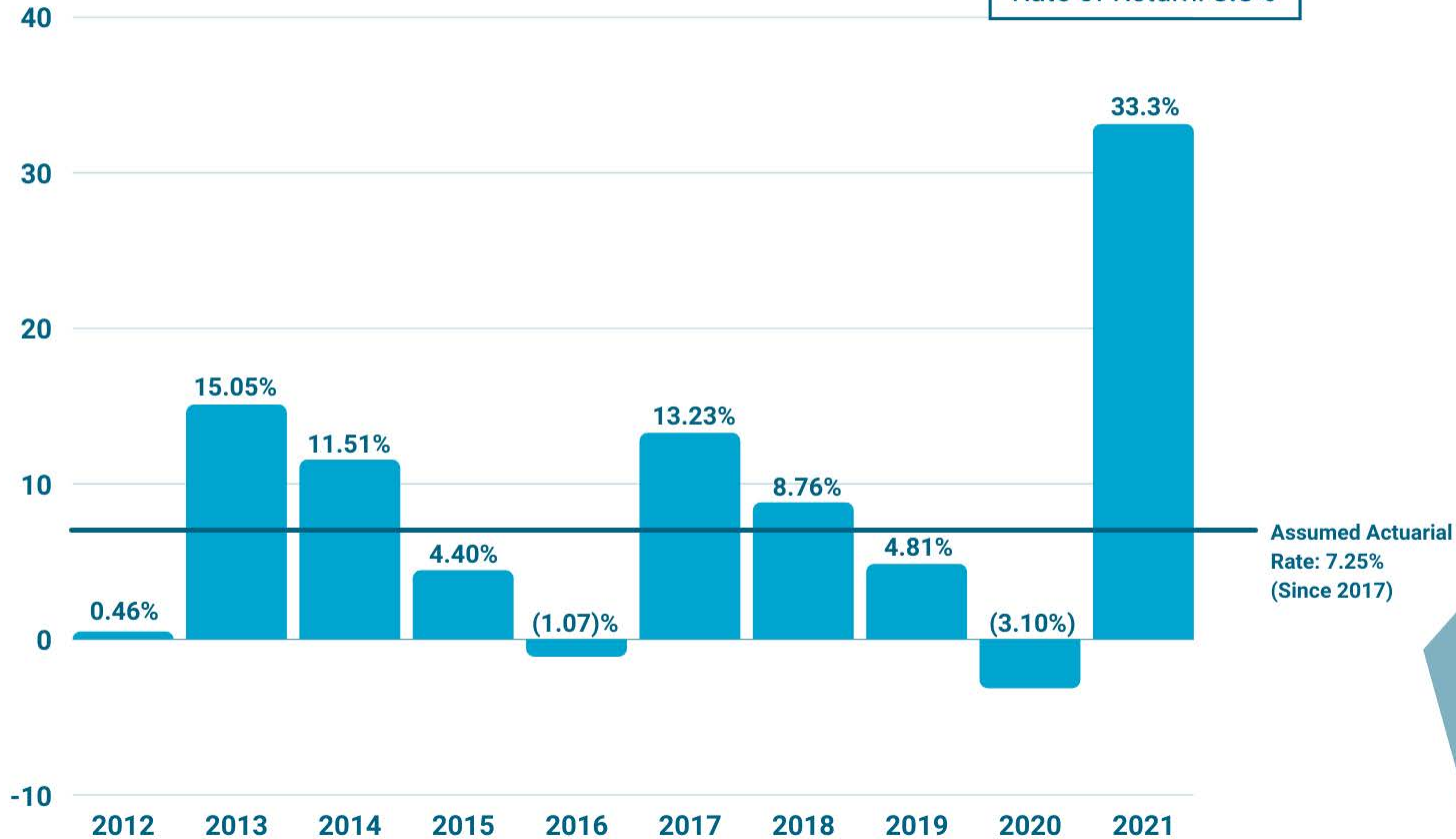
\$3,790

AVERAGE MONTHLY BENEFIT

HISTORY OF INVESTMENT PERFORMANCE

For the Years Ended June 30, 2012 through 2021 (Based on Fair Value)

10-Year Annualized
Rate of Return: **8.3%**



FAIR VALUE GROWTH OF PLAN ASSETS HELD FOR INVESTMENTS

For the Years Ended June 30, 2012 through 2021 (Amounts in Millions)



Strategic Pillars

Strategic Priorities

Operational
Excellence
& Efficiency

Superior
Service
Experience

Quality
Employer &
Workplace

Prudent
Fiscal
Management

Effective
Communications

Building on Shared Values

- **Integrity** – *We will be honest, ethical and trustworthy in all aspects.*
- **Accountability & Transparency** – *We will ensure that the decisions we make and how we conduct business is clearly communicated and understood. We will be accountable for our conduct in serving our members, employees and community.*
- **Commitment** – *We will approach our work enthusiastically.*
- **Effectiveness** – *We will be results-oriented in a cost-effective manner, capitalizing on our strengths and capabilities.*
- **Professional Excellence** – *We will be skilled, confident and capable.*
- **Collaboration** – *We will work together as a team and with key stakeholders.*

SBCERA Membership

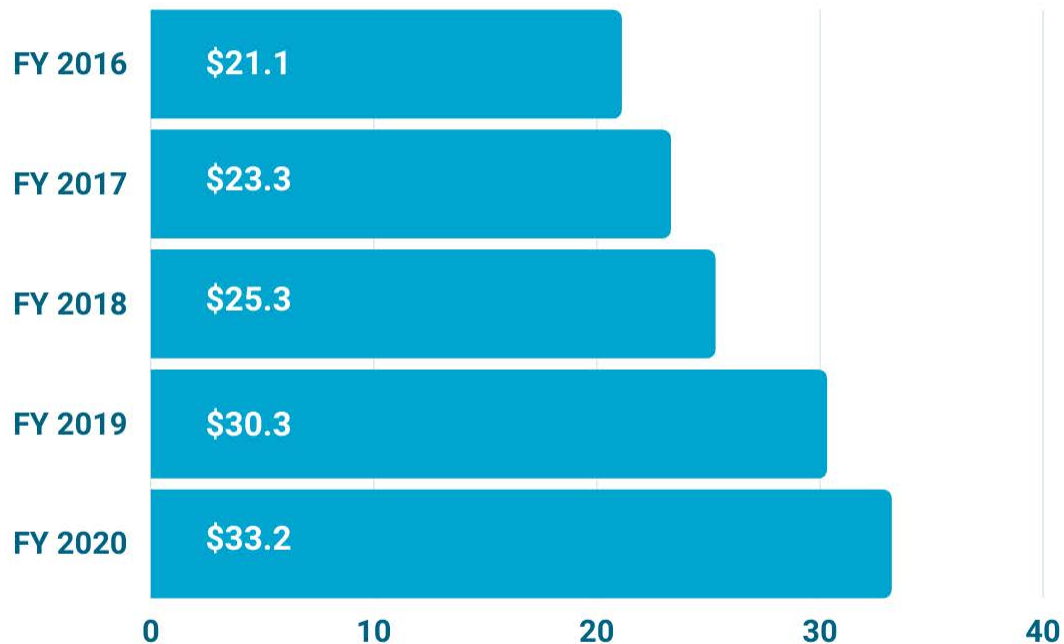
- Defined Benefits
 - Tier 1 – 2 @ 55; 12 months average
 - Tier 2 – 2.5 @ 67; 36 months average
- Mandatory Enrollment for employees of participating employers
- Employee Contributions set based on Entry Age for Tier 1; 50% of normal cost for Tier 2
- Employee & Employer contribution rates are set annually in December, effective the following July

SCAQMD's Membership

- Joined SBCERA in 1979
- Special legislation allowed for membership in SBCERA, despite not being located in San Bernardino County
- Active Members: 773
Retired Members: 654
- “SCAQMD” in its own cost group (as are some other employers)

SCAQMD CONTRIBUTIONS

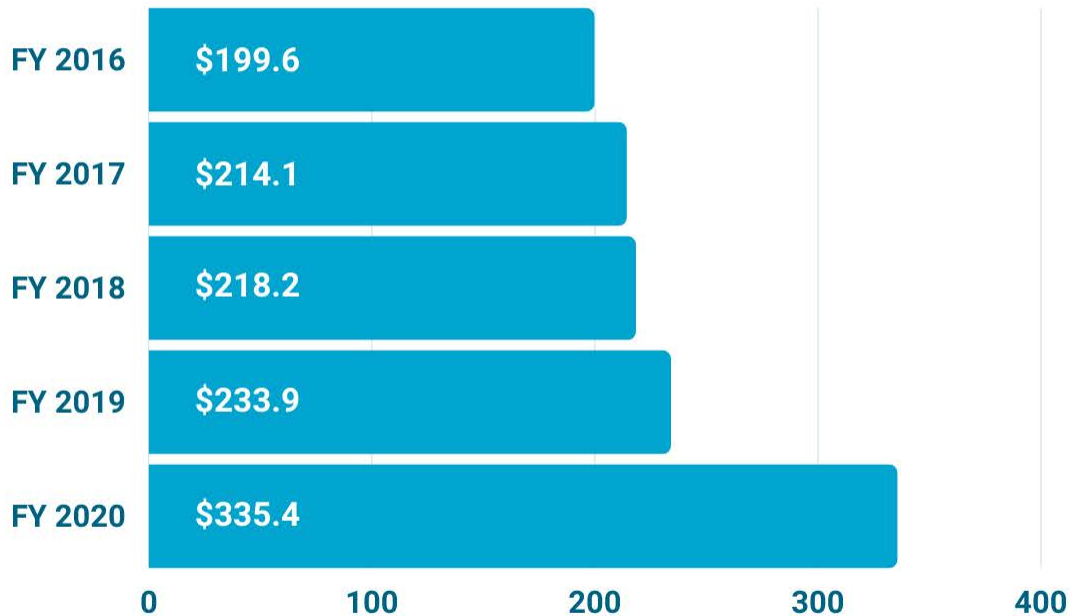
For the Years 2016 through 2020 (Amounts in Millions)



Note: Contributions are based on reported earnable/pensionable compensation.

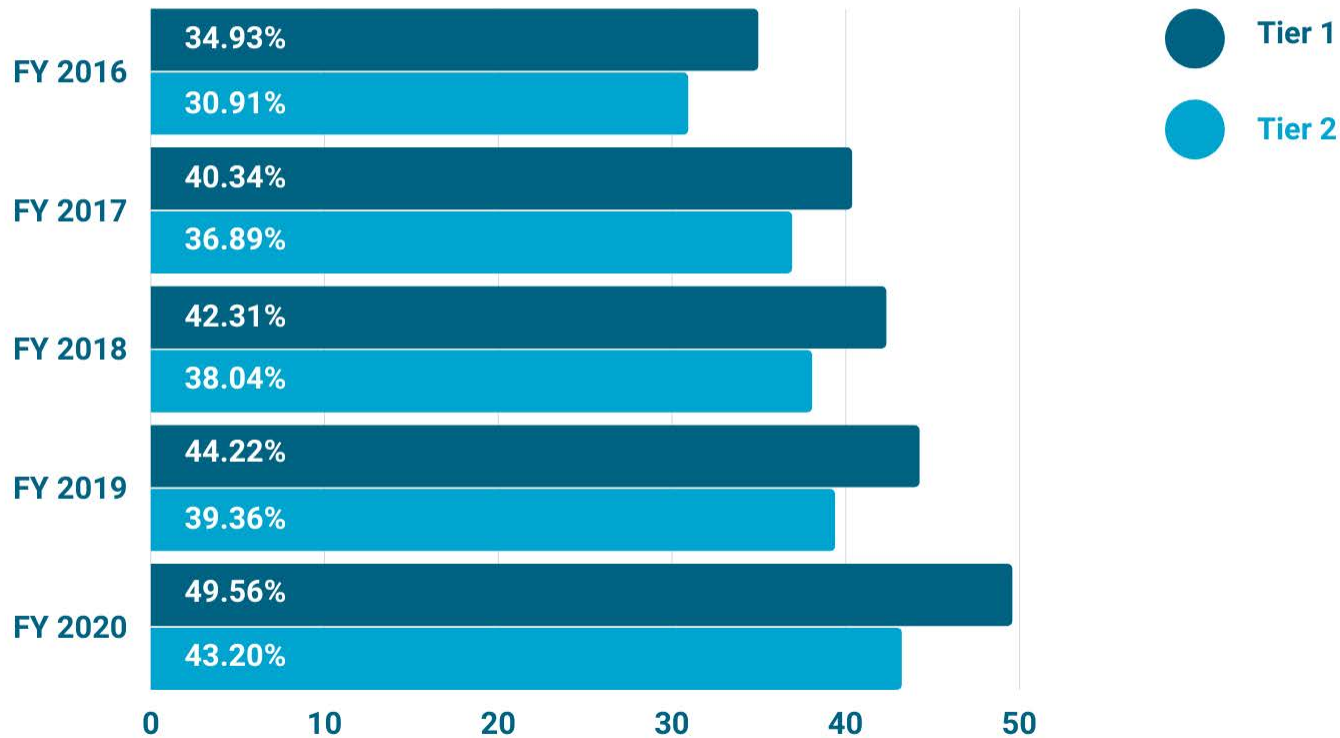
SCAQMD NET PENSION LIABILITY

For the Years 2016 through 2020 (Amounts in Millions)



SCAQMD EMPLOYER CONTRIBUTION RATES

For the Years 2016 through 2020 (As percentage of Payroll)



Actuarial 101

Understanding how contribution rates are determined

Actuarial 101: The Basic Equation

$$C + I = B + E$$

Contributions + Investment Income
equals

Benefit Payments + Expenses

Actuarial Decisions/Policies

Actuarial Funding Policy

- Set by the SBCERA Board of Trustees
- Rarely Changed
- Cost Method
- Asset Smoothing Method
- UAAL Amortization Policy

Actuarial Assumptions

- Set by the SBCERA Board of Trustees; reviewed every 3 years as part of Experience Study
- Economic assumptions, such as investment return and salary growth
- Demographic assumptions such as mortality

Annual Actuarial Valuation

- Performed by Segal – Presented to SBCERA Board in November
- Key Funding Policies:
 - Entry Age – level percent of pay normal cost
 - Asset Smoothing – 5-year
 - Amortization – 20-year “layered approach”
- Key Assumptions:
 - 7.25% assumed rate of return
 - 3.5% payroll growth (based on real wage increases (0.5%) and inflation (3.0%))

Actuarial Cost Method

Normal Cost

The portion of the value of projected benefits for active members that is allocated to each plan year. Generally, shared between employers and employees.

Actuarial Accrued Liability

Measures costs from past years. For retired members, the AAL is the entire value of their benefit. Almost always funded by the employers

Debby Cherney
Chief Executive Officer

Phone Number
909.915.2027

Email Address
dcherney@sbcera.org

Amy McInerny
Chief Financial Officer

Phone Number
909.915.2034

Email Address
amcinerny@sbcera.org



San Bernardino County Employees'
Retirement Association

348 W. Hospitality Lane Suite 100
San Bernardino, CA 92408



Community in Action: A Comprehensive Educational Toolkit on Air Quality Sensors





Background - The AQ-SPEC Program

- Availability, interest, and use of air quality sensors continues to increase
- **AQ-SPEC** (Air Quality Sensor Performance Evaluation Center), established in 2014
- Main Goals:
 - Evaluate the performance of commercially available "low-cost" air quality sensors in both field and laboratory settings
 - Catalyze the successful evolution, development, and use of sensor technology
 - Provide guidance and clarity for ever-evolving sensor technology and data interpretation

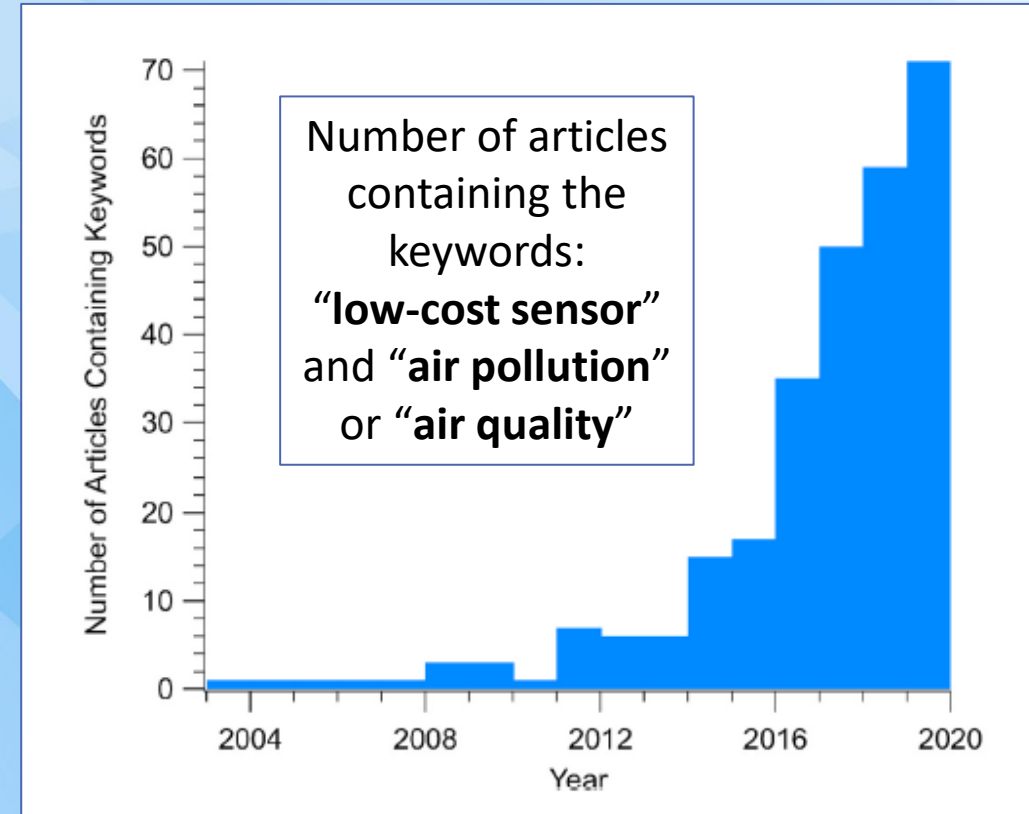
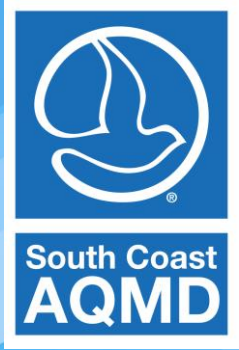


Figure from Giordano et al., 2021





“Engage, Educate, and Empower California Communities on the Use and Applications of Low-Cost Air Monitoring Sensors”

- Main Objective: Provide communities across California with the knowledge necessary to appropriately select, use, and maintain “low-cost” sensors and to correctly interpret the collected data
- In 2015 the South Coast AQMD was awarded funding from the U.S. EPA under their “Science to Achieve Results” (STAR) Program (“Air Pollution Monitoring for Communities”)
- Collaboration:

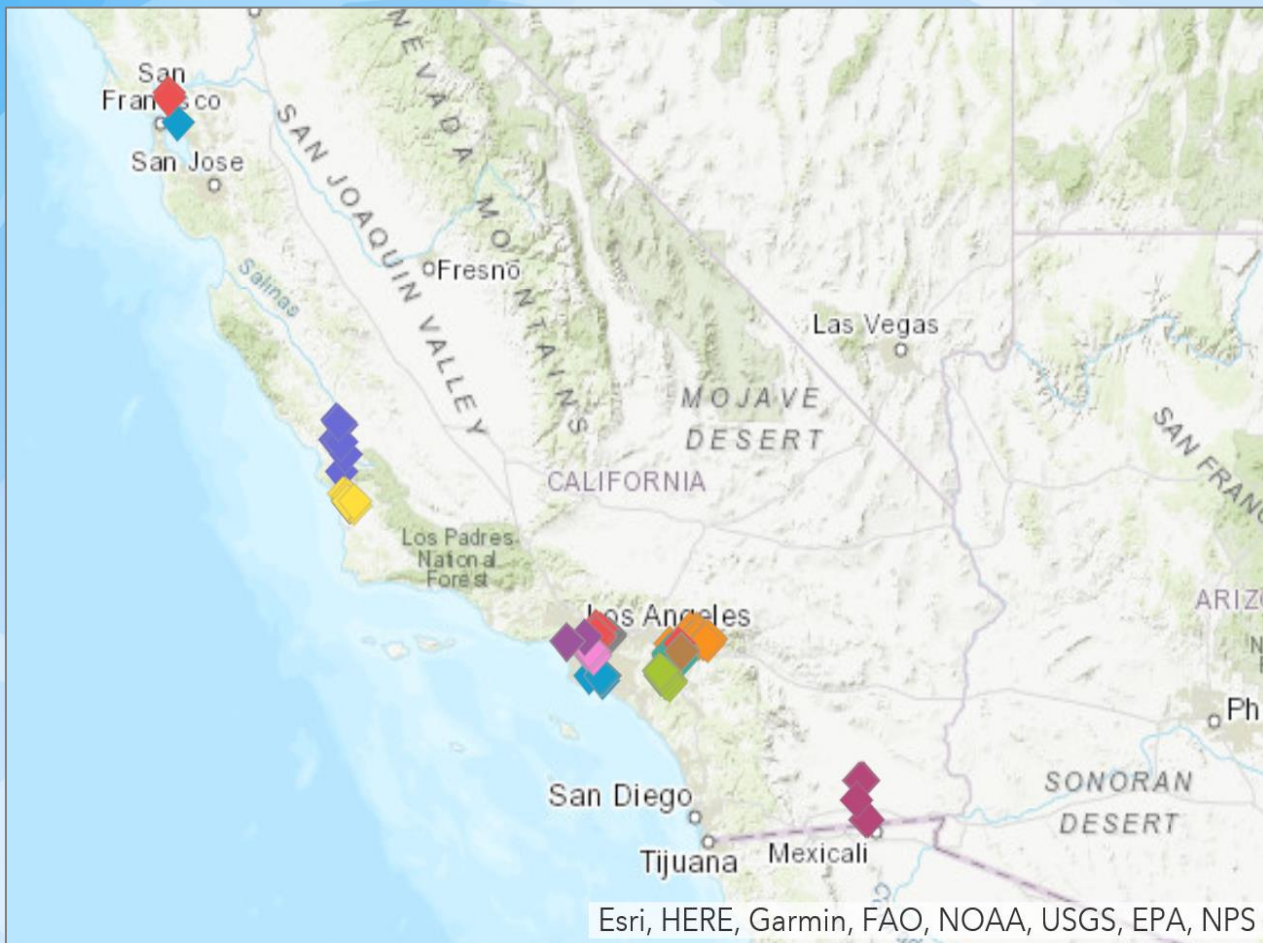


STi | Sonoma Technology

UCLA



Project Outcomes



- **14** California communities
- **300** PurpleAir PA-II sensors
- **100** Aeroqual AQY sensors
- **3** years of data
- **33** community workshops
- **86** installation surveys
- **113** surveys collected
- **3** Reports for/by STAR Grant communities
- **7** peer-reviewed publications
- **1** Master's Thesis
- **2** Conference Training Workshops
- **16** Conference Presentations



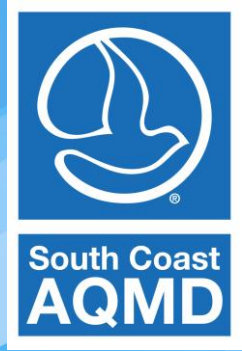
Educational Toolkit

All outcomes, products, and interaction with the communities informed and shaped the development of the Educational Toolkit

- Guidebook on Air Quality Sensors
- Training videos (3)
- Installation guides
- Surveys and project forms
- Data analysis/visualization tools
- Infographic examples
- Community reports & analysis



- ✓ Accessible to public
- ✓ Visually engaging
- ✓ One or more languages
- ✓ Decision-making to reduce exposure
- ✓ Data collection practices
- ✓ Resources for additional info

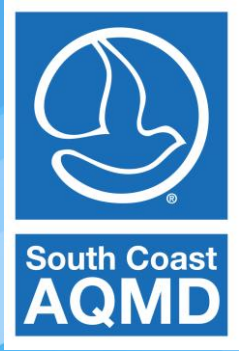


Versatile Product

- Guidebook and other resources are designed to meet the needs of a broad range of users and projects
- For example, users could include:
 - An academic researcher new to community-based work
 - A community leader new to air quality and concerned about local sources
 - Staff from a government agency experienced in working with the public, but new to sensors
 - An individual interested in using sensors to better understand their own air quality

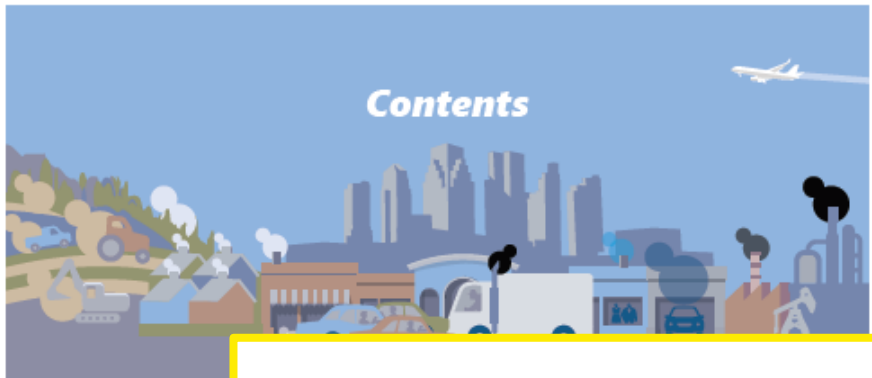
Table 1-1. A roadmap of the guidebook for users with different responsibilities and interests.

	Organizer Community organizer or project lead for an air quality sensor project	Participant Participant using a sensor in a community led project	Individual Individual member of the public using a sensor	Partner New to using sensors	Academic, Industry New to air quality monitoring	Government Agency New to community-based research
Chapters						
2 Learn Valuable information about air quality	•	•	•		•	
3 Plan Plan a successful project	•		•	•	•	•
4 Deploy Deploy and maintain your sensors	•	•	•	•	•	•
5 Act Move from results to action	•	•	•	•	•	•
Appendices						
A Air Quality Index	•	•	•		•	
B FAQs	•		•	•	•	•
C Purple Air Sensor	•	•	•	•	•	
D Data Analysis	•		•	•	•	
E Infographic	•					•
F Install Template				•		
G Project Template	•					•
H Log Notes	•	•	•		•	
I Liability Form	•			•	•	•
J Agency Contacts	•					•
K Sensor Tests	•			•		
L DataMewer	•	•		•	•	•
M Community Reports	•	•		•		•



Community in Action Guidebook:





01	Introduction Background Guidance References				
02	Understanding Air Quality and Monitoring Particle Pollution Gas-Phase Pollutants What Is a Sensor System? References	3-1 3-2 3-3 3-8 3-13 3-18 3-20 3-28 3-29	2-1 2-4 2-10 2-18 2-23		
03	Planning Your Project Planning Is a Process Why Does My Community Want to Take Air Quality Measurements? What Does My Community Want to Measure? Where and When Does My Community Want to Take Measurements? List Your Resources How to Select a Sensor System Sensor Project Tips References	3-1 3-2 3-3 3-8 3-13 3-18 3-20 3-28 3-29			
				04	Deploying Your Sensors Using and Troubleshooting Sensors Collecting Useful Data Understanding Your Data Maintaining Momentum on a Project References
				05	Taking Action Local Action Collecting More Data
					4-1 4-2 4-5 4-12 4-26 4-29 5-1 5-2 5-8 H-1 I-1 J-1 K-1 L-1 M-1



Understanding Air Quality and Monitoring:

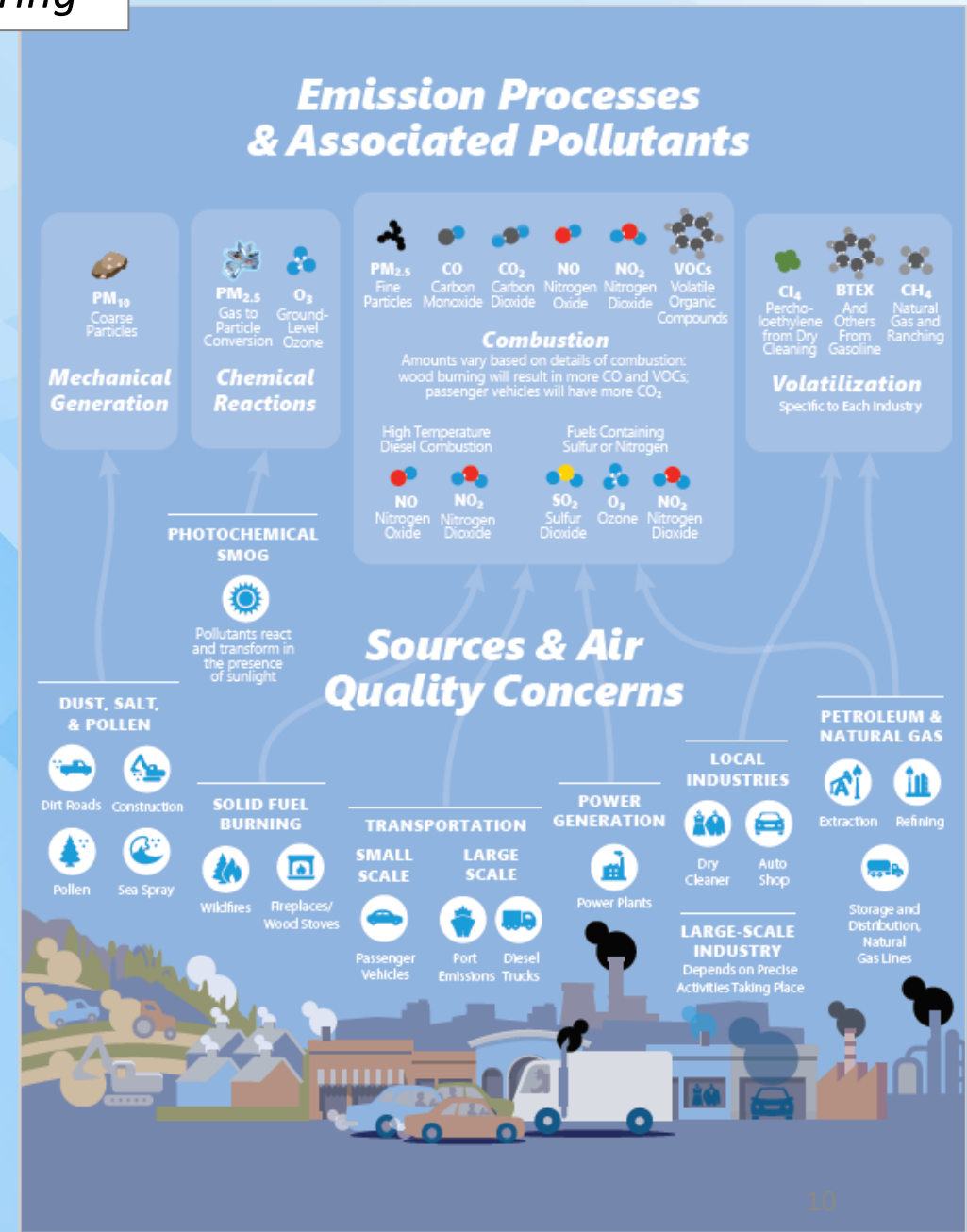


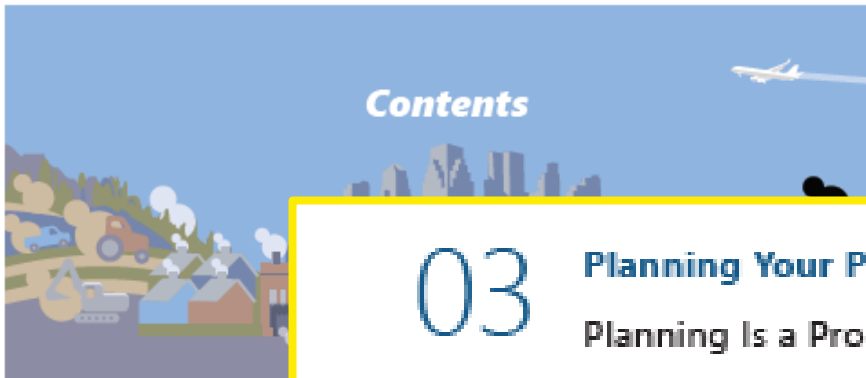


Chapter 2, "Understanding Air Quality and Monitoring"

Table 2-2. Summary of characteristics of fine and coarse particulate matter (adapted from Seinfeld and Pandis, 1998).¹¹

PM _{2.5} Fine Particles	PM ₁₀ Coarse Particles
Chemical Process <i>How the particles are formed</i>	
Reaction, nucleation, condensation, coagulation, cloud/fog processing	Suspension of dust or sea salt, mechanical process
Sources <i>Where the particles come from</i>	
Coal Combustion Gasoline Combustion Diesel Combustion Wood Combustion Motor Vehicles Industry Fires Gas to Particle Conversion	Industrial Dust Farming Dust Mining Dust Unpaved Roads Biological Sources Construction/Demolition Ocean Spray Road Salt
Composition <i>What the particles are made of</i>	
Sulfates and Nitrates Elemental Carbon Other Organics Water Metals	Crustal Elements Salt Pollen Mold Plant and Animal Debris
Formation <i>When the particles are formed</i>	
Primary (directly emitted) and Secondary (formed in the atmosphere)	Primary (directly emitted)
Atmospheric Lifetime <i>How long the particles stay in the air</i>	
Days to Weeks	Minutes to Days
Travel Distance <i>How far the particles travel</i>	
100 to 1000+ km (about 60 to over 600 miles)	Generally < 100 km (< about 60 miles)





Contents

- 01 **Introduction**
Background
Guidebook Purpose
References
- 02 **Understanding Air Quality**
Particle Pollution
Gas-Phase Pollution
What Is a Sensor?
References
- 03 **Planning Your Project**
Planning Is a Process
Why Does My Community Want to Take Air Quality Measurements?
What Does My Community Want to Measure?
Where and When Does My Community Want to Take Measurements?
List Your Resources
How to Select a Sensor System
Sensor Project Tips
References

- 03 **Planning Your Project** 3-1
- Planning Is a Process** 3-2
- Why Does My Community Want to Take Air Quality Measurements?** 3-3
- What Does My Community Want to Measure?** 3-8
- Where and When Does My Community Want to Take Measurements?** 3-13
- List Your Resources** 3-18
- How to Select a Sensor System** 3-20
- Sensor Project Tips** 3-28
- References** 3-29

- 04 **Deploying Your Sensors** 4-1
- Using and Troubleshooting Sensors** 4-2
- Collecting Useful Data** 4-5
- Understanding Your Data** 4-12
- Maintaining Momentum on a Project** 4-26
- References** 4-29

Thorough Planning Guidance

Figure 3-1. Project planning is a process that may need to be repeated to adjust for realities such as budget limitations.





Chapter 3, "How to Select a Sensor System"

HOW TO CHOOSE AN AIR QUALITY SENSOR

1 WHY? FRAME THE PROBLEM
What nearby pollution sources concern you?

DISTURBED SOIL	WOOD COMBUSTION	SMALL-SCALE TRANSPORT	LARGE-SCALE TRANSPORT	LIGHT INDUSTRY	HEAVY INDUSTRY
<ul style="list-style-type: none"> Dirt Roads Farming Construction Windblown Dust 	<ul style="list-style-type: none"> Firplaces Restaurants Wildfires 	<ul style="list-style-type: none"> Passenger Vehicles Small Engines 	<ul style="list-style-type: none"> Diesel Trucks Shipping Airplanes Trains 	<ul style="list-style-type: none"> Dry Cleaners Auto Shops Fabrication 	<ul style="list-style-type: none"> Extraction Refining Factories Distribution

2 WHAT? IDENTIFY THE POLLUTANTS
What pollutants are being created by those sources?

PM₁₀ Coarse Particles	PM_{2.5} Fine Particles	VOCs Volatile Organic Compounds	CO₂ Carbon Dioxide	CO Carbon Monoxide	NO Nitrogen Oxide	NO₂ Nitrogen Dioxide	O₃ Ozone	SO₂ Sulfur Dioxide
--	---	---	---	------------------------------	-----------------------------	---	-------------------------------	---

3 HOW? ASSESS YOUR RESOURCES

MONEY VOLUNTEERS TIME

4 WHERE AND WHEN?
What is your plan for taking measurements?

5 CHOOSE YOUR SENSORS

What will you measure?
PM_{2.5} CO O₃

How will you view the data?
ON THE SENSOR WEB APP

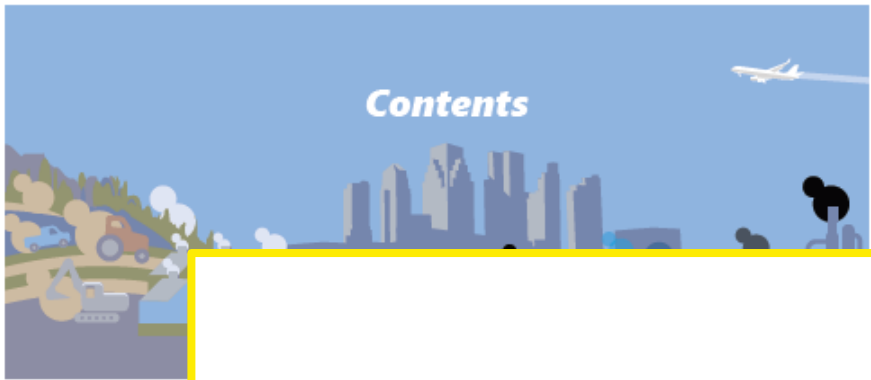
Does it need to be Weatherproof?
RAIN COLD HEAT

How many do you need?
ONE SMALL NETWORK LARGE NETWORK

How will it be powered?
PLUG BATTERY SOLAR

How will the data be stored and transmitted?
WIFI CARD CLOUD

How much will it cost?
TO BUY TO MAINTAIN



01	What Does My Community Want to Measure?	3-8
02	Where and When Does My Community Want to Take Measurements?	3-13
03	List Your Resources	3-18
	How to Select a Sensor System	3-20
	Sensor Project Tips	3-28
	References	3-29
04	Deploying Your Sensors	4-1
	Using and Troubleshooting Sensors	4-2
	Collecting Useful Data	4-5
	Understanding Your Data	4-12
	Maintaining Momentum on a Project	4-26
	References	4-29
05	Taking Action	5-1

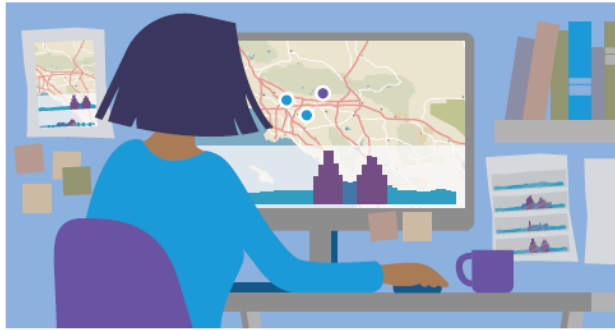
01	What Does My Community Want to Measure?	3-8
02	Where and When Does My Community Want to Take Measurements?	3-13
03	List Your Resources	3-18
	How to Select a Sensor System	3-20
	Sensor Project Tips	3-28
	References	3-29
04	Deploying Your Sensors	4-1
	Using and Troubleshooting Sensors	4-2
	Collecting Useful Data	4-5
	Understanding Your Data	4-12
	Maintaining Momentum on a Project	4-26
	References	4-29

01	What Does My Community Want to Measure?	3-8
02	Where and When Does My Community Want to Take Measurements?	3-13
03	List Your Resources	3-18
	How to Select a Sensor System	3-20
	Sensor Project Tips	3-28
	References	3-29

Appendix K	Examples of Sensor Performance	K-1
Appendix L	User Guide for AirSensor DataViewer	L-1
Appendix M	Sample Community Reports and Resources	M-1



Chapter 4, "Deploying Your Sensors"



Visualizing your data is key. Visual data review is focused on patterns to verify that data are reasonable.

Understanding Your Data

Interacting with Your Data

The first step to successful data analysis

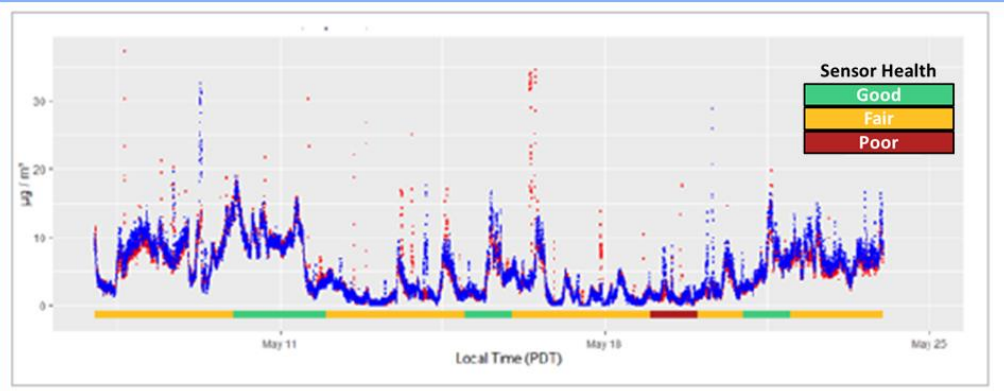
PurpleAir Sensor Data Processing Guides in Appendix C.

Spreadsheets (e.g., Excel): Microsoft Excel is fairly easy to use for basic data



Sensor hosts will need training if they will be installing and

Using and Troubleshooting Sensors



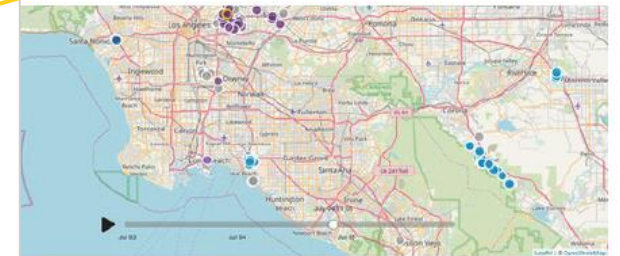
- Practical advice for siting, installing, and maintaining sensors
- Sensor co-location, correction, and calibration
- Introduction to different plot types, assessing accuracy, and useful quality control (QC) metrics/algorithms
- Ways to monitor the “State-of-Health” of deployed sensors
- Description of tools and resources available for data analysis
- Step-by-step example analysis of an air quality event (using the AirSensor DataViewer)



inspection. Defining and implementing a QA/QC procedure can help you to identify and remove questionable data

Calendar Plots

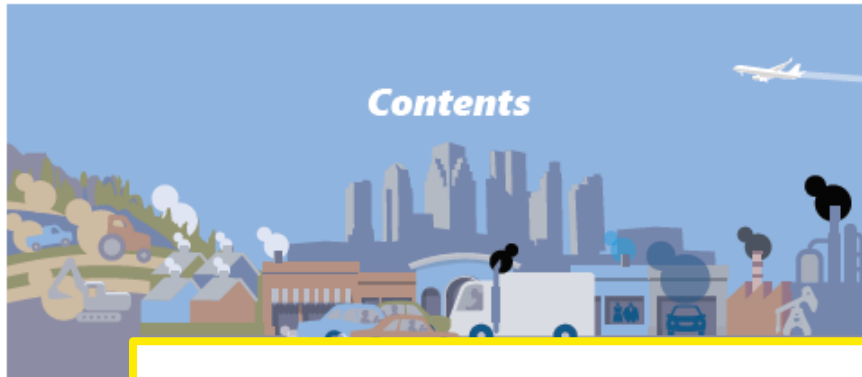
Calendar plots are useful for showing



4-8, elevated pollutant levels associated with the 4th of July are circled.

Color Hex # (RGB)	PM _{2.5} Concentration (µg/m ³) 24-hour averages	PM _{2.5} Concentration (µg/m ³) 1-hour averages
#8B5BA4 (171,227,244)	PM _{2.5} ≤ 8	PM _{2.5} ≤ 12
#F13C0A (17,140,88)	8 < PM _{2.5} ≤ 20	12 < PM _{2.5} ≤ 35
#E69A00 (16,96,150)	20 < PM _{2.5} ≤ 35	35 < PM _{2.5} ≤ 55
#8650A5	35 < PM _{2.5} ≤ 55	55 < PM _{2.5} ≤ 75

Figure 4-9. Map and time series from the AirSensor DataViewer tool¹⁵ showing high PM_{2.5} concentrations on July 4th. The time series at the bottom is for the site



05	Taking Action	5-1	
	Local Action	5-2	A-1
	Collecting More Data	5-8	B-1
	Sharing Your Results and Discussing Your Project	5-10	C-1
	References	5-14	D-1

03	Planning Your Project	3-1
	Planning Is a Process	3-2
	Why Does My Community Want to Take Air Quality Measurements?	3-3
	What Does My Community Want to Measure?	3-8
	Where and When Does My Community Want to Take Measurements?	3-13
	List Your Resources	3-18
	How to Select a Sensor System	3-20
	Sensor Project Tips	3-28
	References	3-29

04	Deploying Your Sensors	4-1
	Using and Troubleshooting Sensors	4-2
	Collecting Useful Data	4-5
	Understanding Your Data	4-12
	Maintaining Momentum on a Project	4-26
	References	4-29
05	Taking Action	5-1
	Local Action	5-2
	Collecting More Data	5-8

		5-10	E-1
		5-14	F-1
			G-1
			H-1
	Appendix H. Blank Log Notes Form		I-1
	Appendix I. Release of Liability Sample		J-1
	Appendix J. Local Regulatory Agency Contacts (Sample List)		K-1
	Appendix K. Examples of Sensor Performance		L-1
	Appendix L. User Guide for AirSensor DataViewer		M-1
	Appendix M. Sample Community Reports and Resources		



Chapter 5, "Taking Action"



05 Taking Action

Now that you have data, what do you do with the results? Options include taking action locally

- Ideas for and examples of "local action"
- Advice to help determine whether additional data should be collected
- Strategies for communicating with local government agencies and/or the broader community (e.g., sharing results)

IDLE FREE ZONE

(Above) Create an anti-idling program to protect students from harmful vehicle emissions near schools.

INVERSION LAYER ALERT NO-BURN DAY

(Left) Work with your local air quality agency to develop a no-burning policy for days with poor air quality.

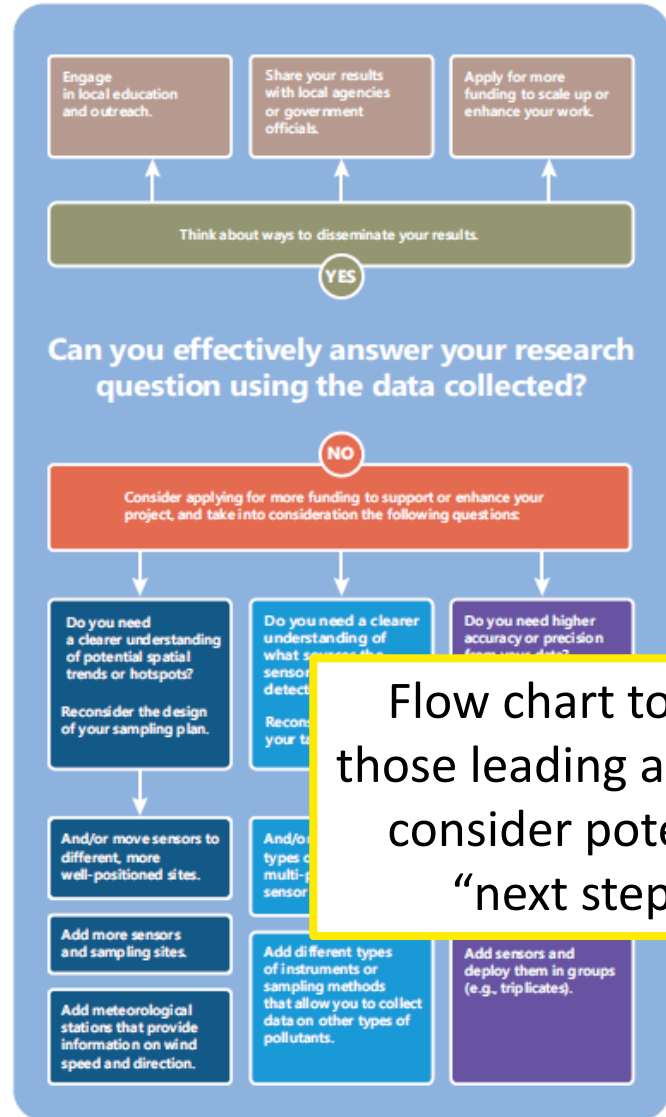
Carpool

Create a community awareness program that will help reduce emissions.

Other Mitigation Strategies

a flag that corresponds to the AQI: green, yellow, orange, red, and purple. EPA offers [guidance on school flag programs](#).¹⁵

At a higher level of funding and city...



Flow chart to help those leading a project consider potential "next steps"

Figure 5-1. Use this decision tree to determine whether more measurements are needed to meet project objectives.



<http://www.aqmd.gov/aq-spec/special-projects/star-grant>

Conclusions & Future Work

- Next Steps -> ***Dissemination***
 - Disseminate to communities and via conferences
 - Publish products on the AQ-SPEC website
 - Future Work -> ***Sustainability***
 - Share with STAR Grant communities to help sustain and strengthen these partnerships
 - Conduct outreach to new communities and to support sensor projects locally and beyond
- ***Dissemination will bring more feedback and the opportunity to enhance and improve the Educational Toolkit***



Acknowledgements



- Dr. Andrea Polidori (**PI**)
- Dr. Vasileios Papapostolou (**Project Lead**)
- Dr. Ashley Collier-Oxandale (**Project Coordinator**)
- Dr. Jason Low, Dr. Philip Fine, Dr. Laki Tisopulos (**Co-PIs**)
- Hilary Hafner; Sonoma Technology, Inc. (**Co-PI**)
- Dr. Yifang Zhu; University of California Los Angeles (**Co-PI**)
- Eric Stevenson, Dr. Katherine Hoag; Bay Area AQMD
- Meghan Field et al.; San Luis Obispo County APCD
- Mary Byrd; Santa Barbara County APCD
- Riccardo Magni; Pioneer Valley High School (PVHS), Santa Maria
- Scott Chan et al.; Asian Pacific Islander Forward Movement (APIFM), Los Angeles
- Nick Massetti; Leisure World Club, Seal Beach
- Dr. David Cocker et al.; Sycamore Heights Community Action Group (SHCAG), Riverside
- Dr. Gabriele Windgasse et al.; California Environmental Health Action Team (CEHAT), South Gate
- Jerry Sincich et al.; Temescal Valley
- Emily Park, Tina Diep; Asian Health Services (AHS), Oakland
- Pam Mei Harrison et al., Asian Pacific Environmental Network (APEN), Richmond
- Luis Olmedo et al.; Comite Civico del Valle (CCV), Imperial County
- **AQ-SPEC Staff:** Berj Der Boghossian, Dr. Brandon Feenstra, Dr. Michelle Kuang, Randy Lam, Dr. Wilton Mui, Dr. Hang Zhang
- **Other South Coast AQMD Staff:** Patricia Kwon, Mary Leonard, Laurie Diton, Dean Hughbanks, Lourdes Cordova Martinez, Ricardo Rivera, Ron Moskowitz, Mark Henninger, Brian Roche, Aneeta Dev
- **U.S. EPA:** Richard Callan et al.

