

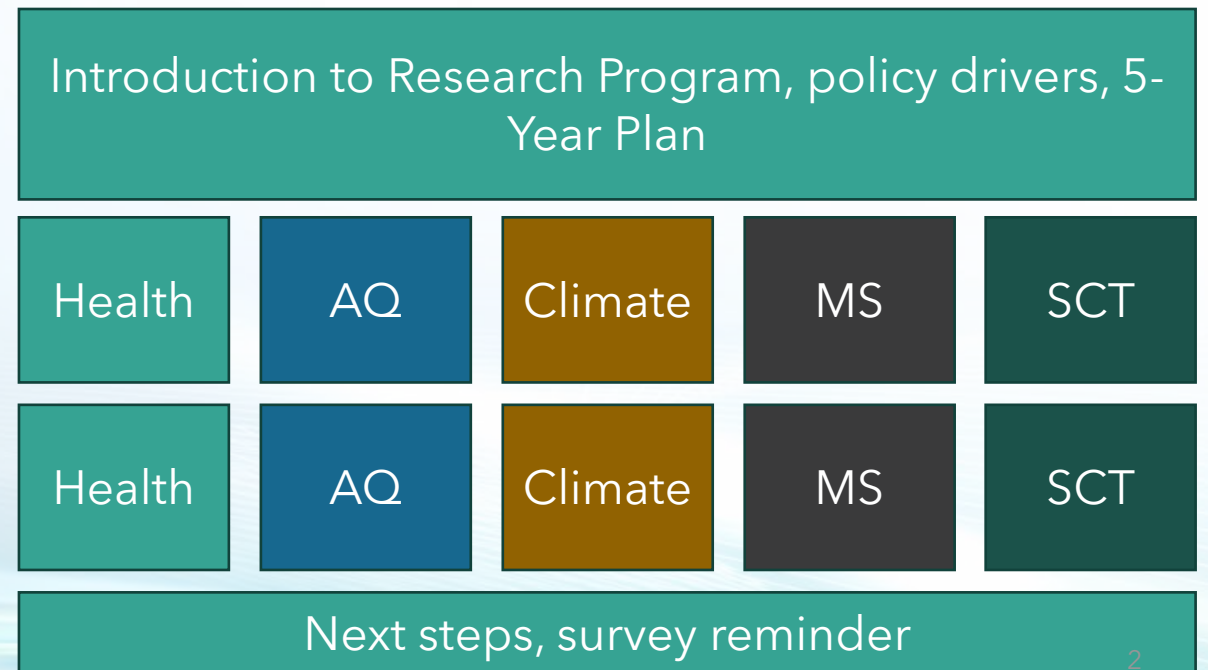


Public Meeting - Setting Research Priorities for the Next 5 Years

February 29, 2024

Today's Agenda

- 3:00-3:25PM
 - Brief introductions
 - CARB's Research Program
 - Summary of our research drivers and current research focus
 - Health
 - Climate
 - Air Quality
 - Mobile Sources
 - Sustainable Communities and Transport
- 3:30-4:30
 - Discussion forums
 - Break-out sessions by topic



CARB Priorities

Air Quality Standards



Environmental Justice



Climate Change



Mobile Sources



Sustainable Communities



How CARB works with federal and local air quality agencies

FEDERAL



US EPA

Sets & enforces national air quality standards.
Regulates interstate transportation.



TRAINS



PLANES



SHIPS

STATE



Regulates mobile sources of air pollution,
greenhouse gases & consumer products.



CARS



TRUCKS



BUSES

LOCAL

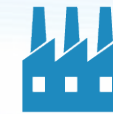


Local Air Districts

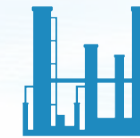
Regulates stationary & local
sources of air pollution.



FIREPLACES



FACTORIES



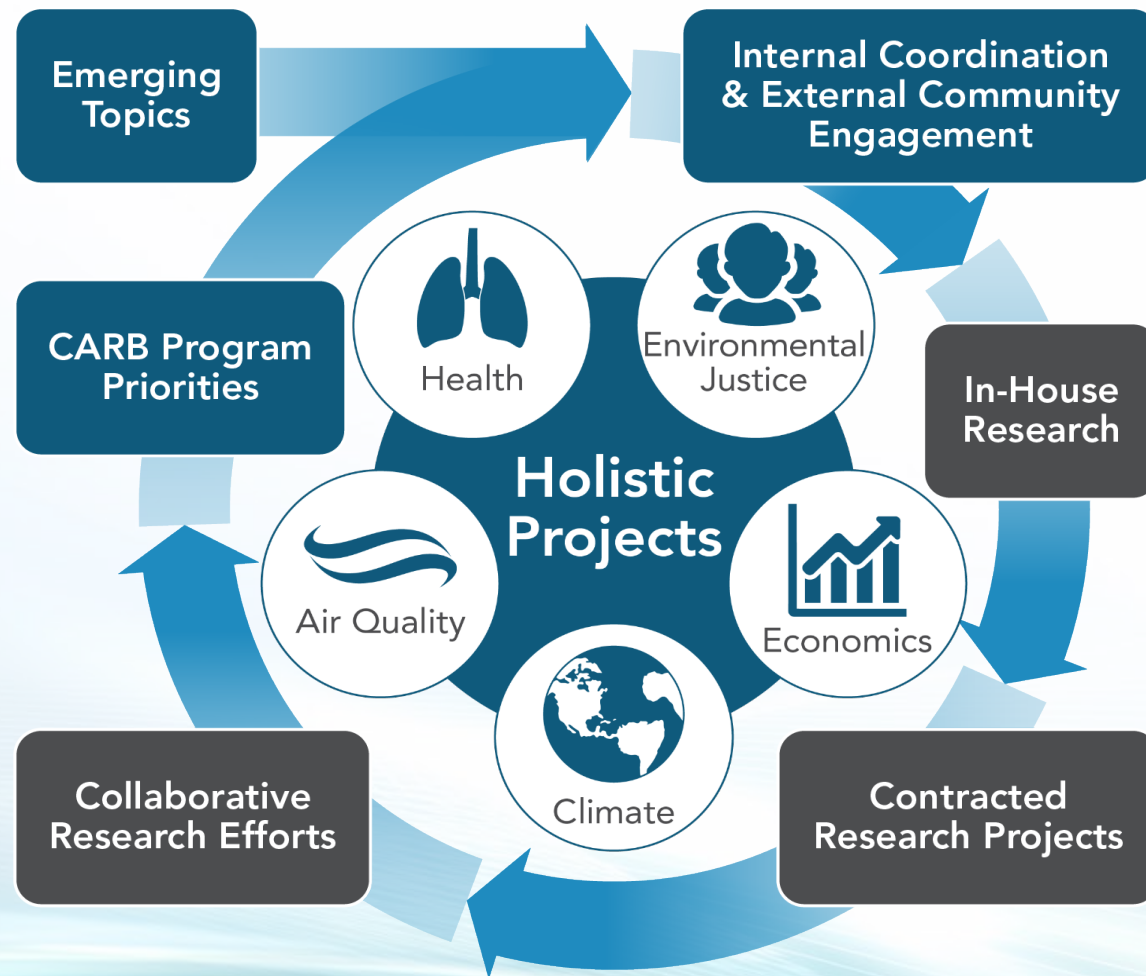
REFINERIES



POWER PLANTS

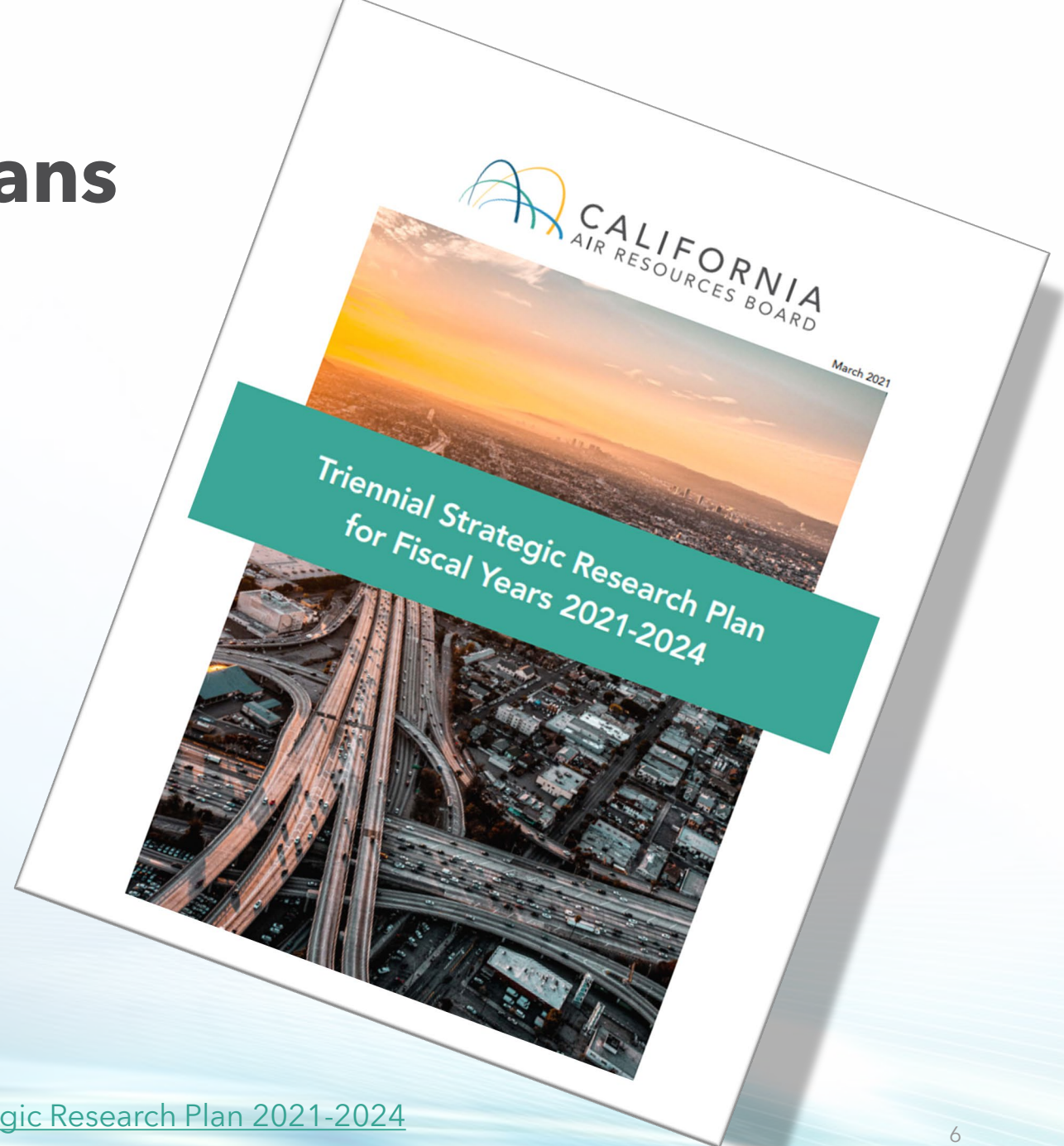
CARB Research Program

- Legislatively mandated research program
- Sound science to support CARB programs
- Oversee in-house, contracted, and collaborative research efforts



Strategic Research Plans

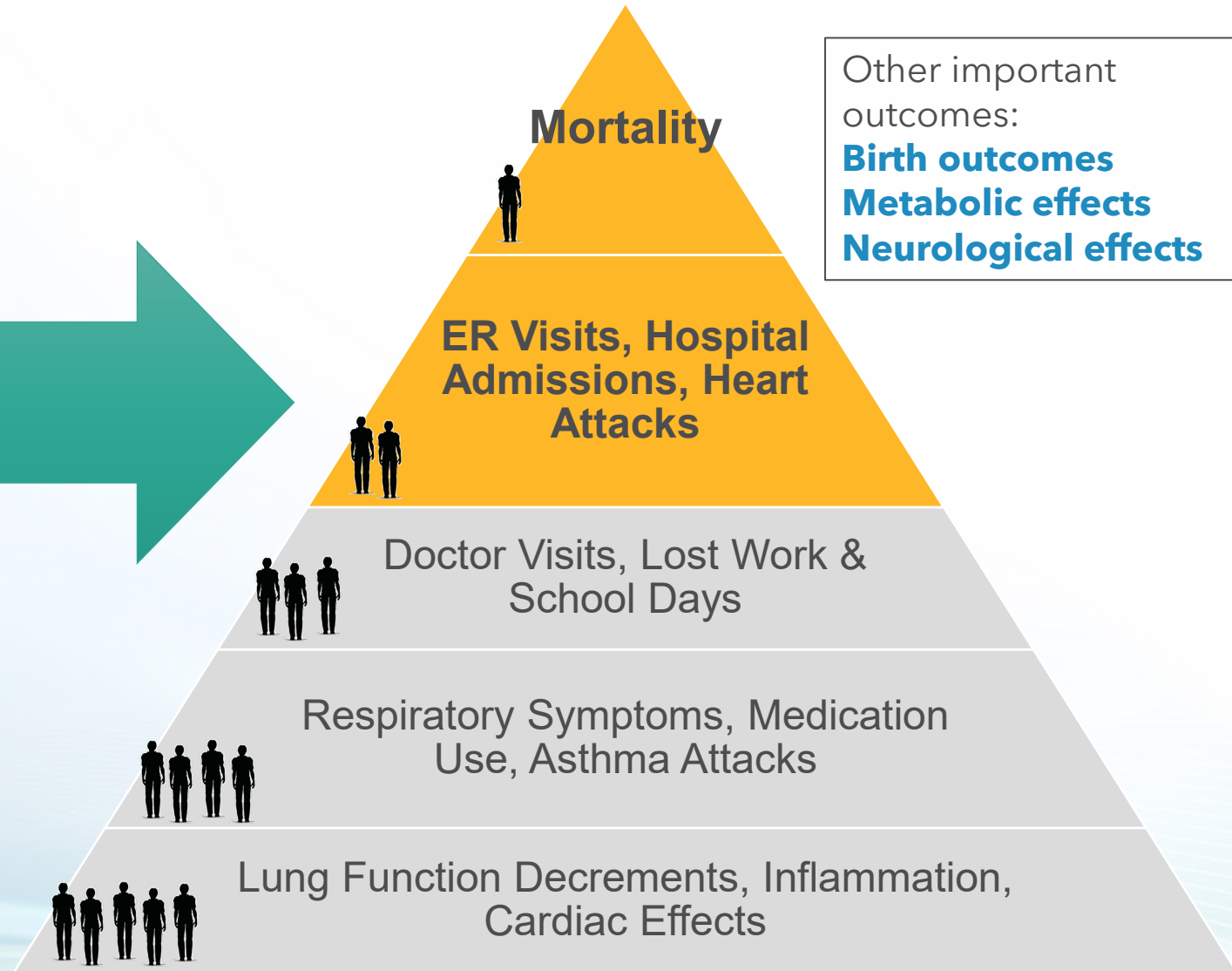
- Public process
- Priorities
- Strategic
- Project selection
- Racial equity and environmental justice
- Planning
- 5 Year Plan – 2025-2030



Health Research Needs and Drivers

- CARB's Mission
 - Protect public health
- National Ambient Air Quality Standards (NAAQS)
 - Health based
- Regulatory health benefits analysis
- Inform the public
- Toxics health risk assessment
- Health impacts of climate change and mitigation

Air Pollution and Health Impacts



Health Research Areas of Focus

- Health analysis
- Indoor air quality
- Impact of air pollution on different health outcomes
- Impacts of short-term exposures to smoke
- Health impacts in over-burdened communities
- Exposure disparities and environmental justice
- Multiple climate stressors and health
- Toxics

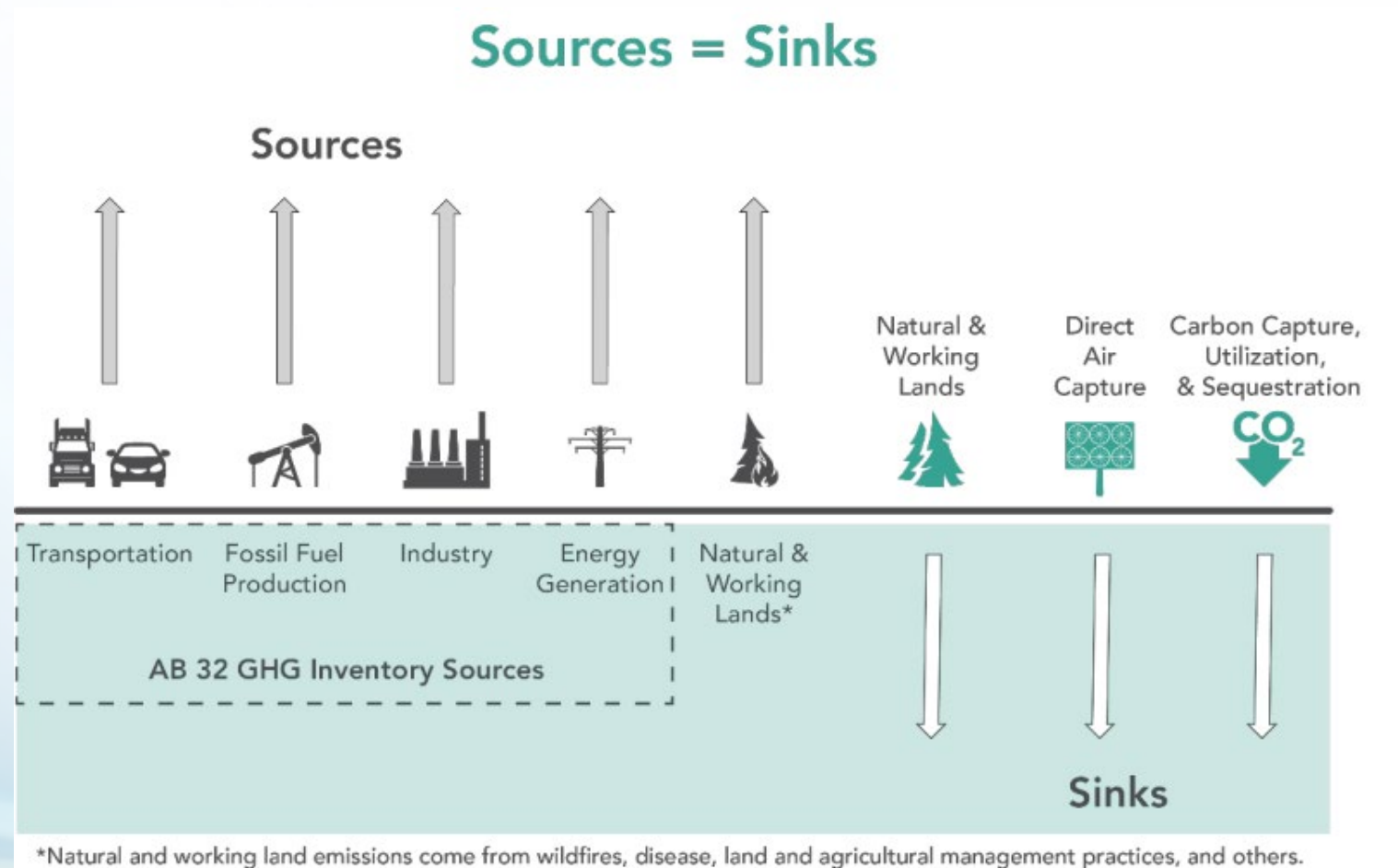
Climate Research Drivers

- Program Drivers
 - AB 32 - CARB lead agency
 - [2022 Scoping Plan for Achieving Carbon Neutrality](#)



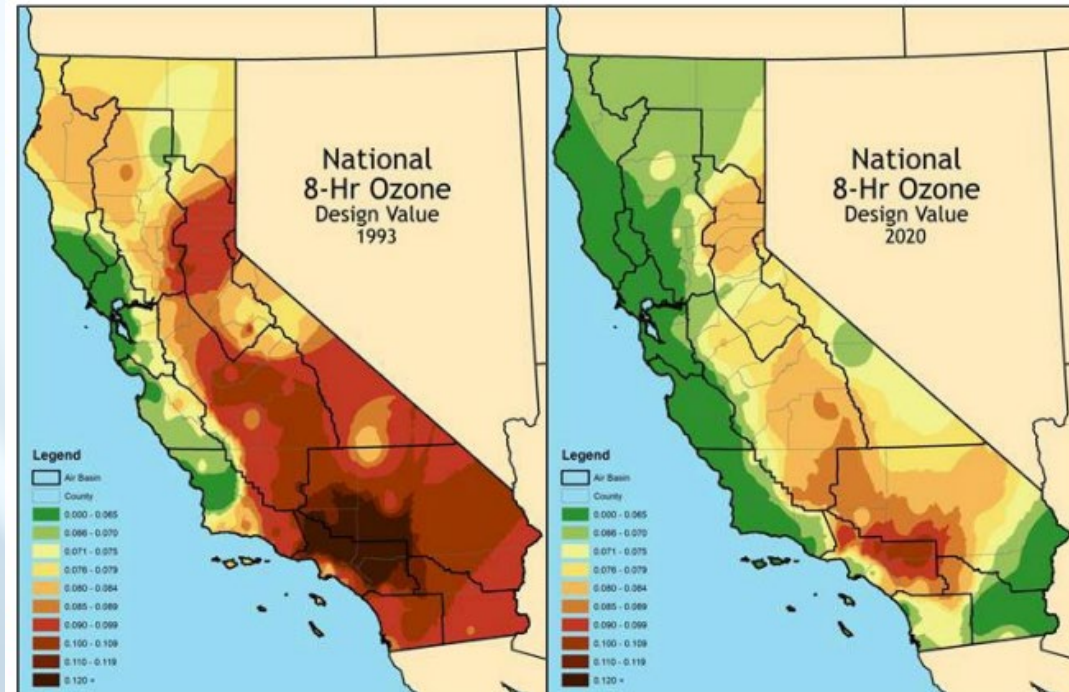
Climate Research Areas of Focus

- Natural and working lands
- Methane and short-lived climate pollutants
- Supporting our GHG inventory needs
- Equity impacts and community needs
- Co-pollutants and health implications



Air Quality Research Drivers

Air Quality Targets



Ozone air quality progress in CA (Fig 1 - 2022 SIP)

2025

- Attainment year for ozone and PM_{2.5} (2023/2025)
- Identify toxics in communities
- Improve tools to guide decisions for the Air Toxics Program

2032

- 75 ppb 8-hr ozone standard
- 9 $\mu\text{g}/\text{m}^3$ PM_{2.5} annual standard
- Obtain lasting emissions reduction in AB 617 communities
- Reduce toxics of major concern

2037

- 70 ppb 8-hr ozone standard

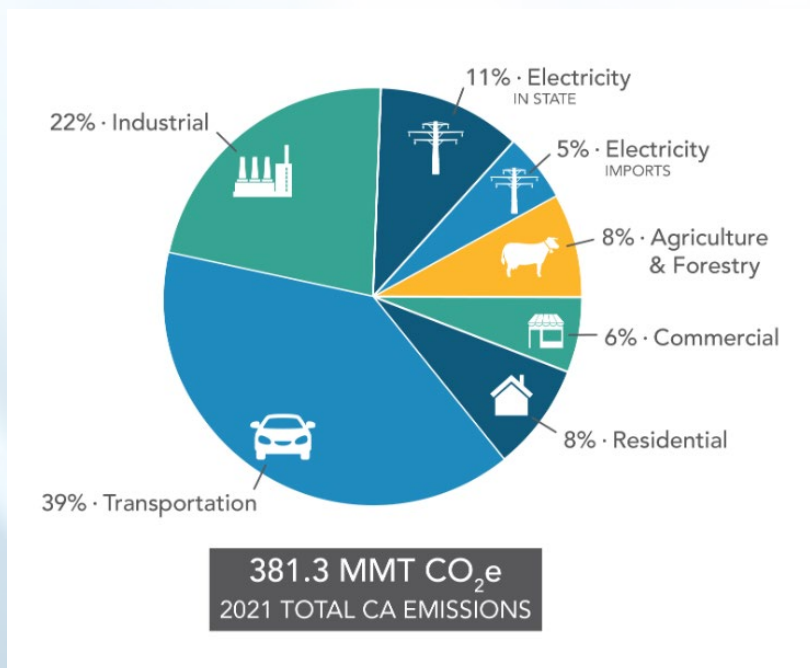
Air Quality Research Areas of Focus

- Sources and formation of air pollution in different regions
- New tools and methods for air quality monitoring
- Emission factors from previously uncharacterized sources
- Impacts from climate change on air quality

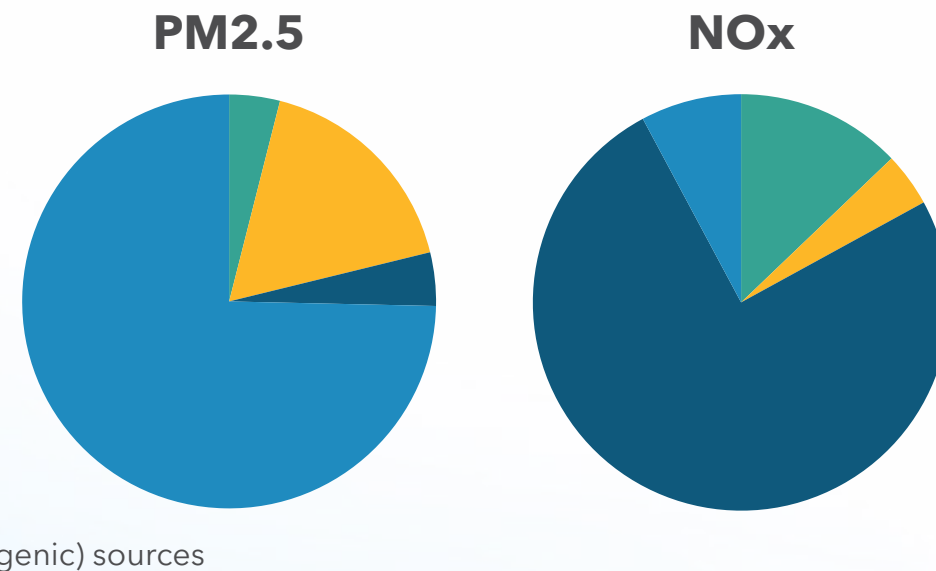


[Ozone non-attainment areas - 2022 SIP Strategy](#)

Mobile Source Research Drivers



[Current California GHG Emission Inventory Data | California Air Resources Board](#)



[Statewide Emissions | California Air Resources Board](#)

Mobile Sources Research Areas of Focus

- Low NOx vehicle testing
- Advanced sensor technology and monitoring
- Non-exhaust emission sources
- Advanced technologies
- Electric vehicle energy efficiency
- Continuing impacts from high emitters, especially in environmental justice communities

Sustainable Communities and Transportation Research Drivers

MPO	Targets Beginning October 1, 2018	
	2020	2035
MTC/ABAG	-10%	-19%
SACOG	-7%	-19%
SANDAG	-15%	-19%
SCAG	-8%	-19%
Fresno COG	-6%	-13%
Kern COG	-9%	-15%
Kings CAG	-5%	-13%
Madera CTC	-10%	-16%
Merced CAG	-10%	-14%
San Joaquin COG	-12%	-16%
Stanislaus COG	-12%	-16%
Tulare CAG	-13%	-16%
AMBAG	-3%	-6%
Butte CAG	-6%	-7%
San Luis Obispo COG	-3%	-11%
Santa Barbara CAG	-13%	-17%
Shasta RTA	-4%	-4%
Tahoe MPO	-8%	-5%

[Regional Plan Targets | California Air Resources Board](#)



Sustainable Community Strategies

- Infill
- Affordable housing
- Transit oriented housing
- Transit
- Active transportation

Metrics

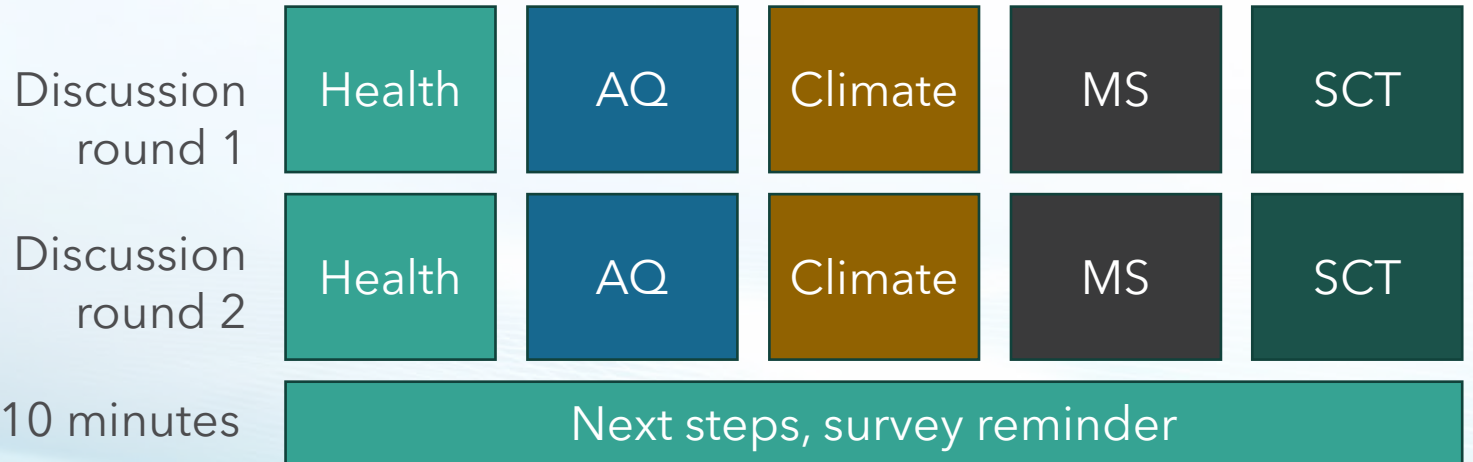
- VMT reductions
- GHG by region
- Mode shift
- Housing units and types added
- Accessibility
- Housing costs
- Transportation investments

Sustainable Communities and Transportation Research Areas of Focus

- Anti-displacement strategies
- Factors impacting changes in VMT
- Impacts of affordable infill housing
- Integrated frameworks - nexus of climate, air quality and transportation
- Building decarbonization
- Zero emission vehicles
- Equitable access to all proposed solutions

Today's Goals

- We want to hear from you
- Research priorities in these areas for the next 5 years
 - Research gaps
 - Research questions
 - Emerging topics
 - Community concerns
- Break-out rooms
 - 25 minutes in each round, provide feedback using polls, chat and verbal comments
 - Opportunity to attend two break-out rooms
- Offline opportunities
 - Survey - Option 3



Next Steps

- Aggregate what we heard today
- Integrate into our future research needs
- Proposed research initiatives presented in August 2024
- Full Draft Plan available in December 2024-January 2025
- Submit comments through public docket
- Tune into Board hearing on Plan January-March 2025