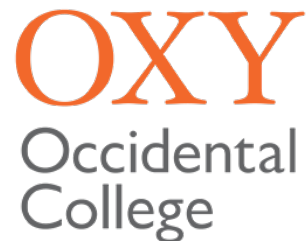


Translating Community Engagement in Science into Emissions Reduction

Incorporating community engagement and community-based research
for environmental justice within regulatory frameworks



Bhavna Shamasunder
Chair and Associate Professor
Urban & Environmental Policy Department
Public Health Program

BAAQMD Advisory Council Meeting
November 8, 2021



Our projects

OXY
Occidental College

SCOPE STRATEGIC
COMMUNITY
AGENDA

PSR LA
Physicians for Social Responsibility
Los Angeles

Esperanza
COMMUNITY HOUSING



Black Women's Network

Sisters In Service to Enhance Resource Sharing

COMMUNITIES FOR A BETTER ENVIRONMENT

CBE
www.cbca.org


CALIFORNIA
LATINAS for
REPRODUCTIVE
JUSTICE

 University of Colorado **Boulder**

 **USC**
Environmental Health Centers




TAKING STOCK
CONSUMER PRODUCT USE AMONG BLACK WOMEN AND LATINAS

 **BLACK WOMEN
FOR WELLNESS**

LA
GRIT MEDIA

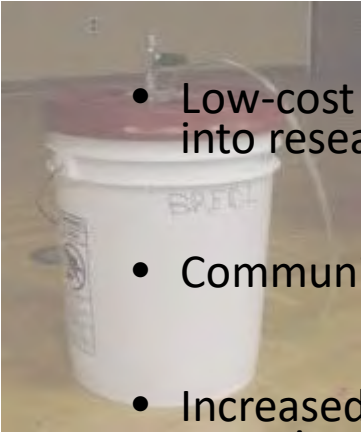
Community Engaged Research: Some Frameworks

- Different scales and scope of engagement: from research question framing to inclusion in data collection, analysis, report back and writing
- All formats consider uneven power, privilege, time, and resources. Though good evidence that engagement improves the scientific and regulatory enterprise
- Consider differences in expertise, contribution, and clarity about possibilities for change and action
- Transparency and Communication across the research, especially for expectations in process, outcomes, and joint understanding of possibility to translate into changes on the ground

From Buckets to Networks: Community Based Monitoring

As lower cost and community-based monitoring becomes more accessible and widespread, what are the challenges for regulation?

What is the responsibility of regulatory agencies for transparency as community driven data collection includes new monitors, models, and networks?



- Low-cost sensors are increasingly sophisticated. Agencies are incorporating evaluation of sensor technology into research divisions;
- Community based air monitoring efforts are also more sophisticated;
- Increased funding for community capacity building to better understand and engage with regulatory agencies on air monitoring;
- Also increased funding for developing, building, participating in community air monitoring; Communities are utilizing better monitoring equipment



Ongoing Challenges and Questions

- Less clarity for data analysis from community air monitoring. Who is looking at, analyzing, and considering the data from community monitoring efforts?
- Will more sophisticated tools and strategies be incorporated into regulatory levers? If so/not, then what are the limits of this enterprise?
- What are models for transparency and responsibility as increased community-based monitoring is funded on the part of air districts?
- How can we avoid the possibility that communities be increasingly tasked with proving their own harm?

Support Internal and Out for Community Engagement

- Agency models that can support agency staff on community engagement skill building, both during and after public engagement processes
- Long history of challenging engagement between agency and community, but potential opportunities for collaboration and joint movement forward
- Consider problems of cooptation of community engaged research towards maintaining the status quo. How can agencies avoid this and use a justice-based approach?

Some possible considerations

- Making community monitoring actionable; Are there possible pathways towards this?
- How do we distinguish between capacity building/community inclusion and making communities feel they need to be regulatory experts to achieve real emissions reductions?
- What are responsibilities of agency staff for environmental justice more broadly?

Thank you

bhavna@oxy.edu

U.S. EPA EFFORTS TO ADDRESS DISPROPORTIONATE IMPACTS IN OVERBURDENED COMMUNITIES

Philip M. Fine, Ph.D.

*Principal Deputy
Associate Administrator
for Policy*

BAAQMD Advisory
Council

November 8, 2021

The banner features a scenic landscape with snow-capped mountains, evergreen trees, and a calm lake reflecting the scenery. On the left side of the banner is the official seal of the United States Environmental Protection Agency, which includes a stylized flower/leaf design and the text "UNITED STATES ENVIRONMENTAL PROTECTION AGENCY".

MESSAGE FROM
THE ADMINISTRATOR

This email message is being sent to EPA employees.

To this end, I am directing my leadership team, including our Assistant Administrators, General Counsel, Associate Administrators, and Regional Administrators, to work with staff in their offices and the Office of Environmental Justice to identify ways to ensure that the country's environmental laws—and the policies implemented under them—deliver benefits to all individuals and communities. Specifically, I direct all EPA offices to do the following:

1. Strengthen enforcement of violations of cornerstone environmental statutes and civil rights laws in communities overburdened by pollution.
2. Take immediate and affirmative steps to incorporate environmental justice considerations into their work, including assessing impacts to pollution-burdened, underserved, and Tribal communities in regulatory development processes and considering regulatory options to maximize benefits to these communities.
3. Take immediate and affirmative steps to improve early and more frequent engagement with pollution-burdened and underserved communities affected by agency rulemakings, permitting and enforcement decisions, and policies. Following President Biden's [memorandum](#) on strengthening the Nation-to-Nation relationship with Tribal Nations, EPA staff should engage in regular, meaningful, and robust consultation with Tribal officials in the development of federal policies that have Tribal implications.
4. Consistent with the Administration's Justice 40 initiative, consider and prioritize direct and indirect benefits to underserved communities in the development of requests for grant applications and in making grant award decisions, to the extent allowed by law.

- EJ integration priorities
 - Enforcement
 - Integration
 - Enhanced engagement
 - Grants
- Programs and Regions already working on EJ plans/strategies/actions

Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government

JANUARY 20, 2021 • PRESIDENTIAL ACTIONS

- All of Government approach to equity
- For EPA, significant overlap with environmental justice
- Barrier analysis/action plans
- Present and past public engagement

Executive Order on Tackling the Climate Crisis at Home and Abroad

JANUARY 27, 2021 • PRESIDENTIAL ACTIONS

- Justice40 Initiative
 - All of government
 - At least 40% of the resources of certain programs to benefit disadvantaged communities
- Air monitoring
- Prioritized enforcement
- EJ Scorecard
- Public Engagement

PRIORITIZING ENFORCEMENT IN COMMUNITIES WITH EJ CONCERNS

- Memorandum from Acting Assistant Administrator Larry Starfield, Using All Appropriate Injunctive Relief Tools in Civil Enforcement Settlements, April 26, 2021 - (April 26, 2021)
- Memorandum from Acting Assistant Administrator for Enforcement and Compliance Assurance Larry Starfield, "Strengthening Enforcement in Communities with Environmental Justice Concerns" - (April 30, 2021)
- Memorandum from Acting Assistant Administrator for Enforcement and Compliance Assurance Larry Starfield, "Strengthening Environmental Justice Through Criminal Enforcement" (pdf) (June 21, 2021) " - (June 21, 2021)
- Memorandum from Acting Assistant Administrator for Enforcement and Compliance Assurance Larry Starfield, "Strengthening Environmental Justice Through Cleanup Enforcement Actions" (pdf) (July 1, 2021) - (July 1, 2021)

DISPROPORTIONATE/CUMULATIVE IMPACTS

- Leadership commitment to making substantive progress – General Iron and Ajax letters
- ORD has formed a council on cumulative risk/impacts and initiated extensive engagement
- Two commitments in the draft multiyear strategic plan

Draft FY 2022-2026 EPA Strategic Plan Framework

Mission: To Protect Human Health and the Environment

Principles: Follow the Science, Follow the Law, Be Transparent, Advance Justice and Equity



Strategy 1:

Ensure Scientific Integrity and Science-Based Decision Making



Strategy 2:

Consider the Health of Children at All Life Stages and Other Vulnerable Populations



Strategy 3:

Advance EPA's Organizational Excellence and Workforce Equity



Strategy 4:

Strengthen Tribal, State, and Local Partnerships and Enhance Engagement



Goal 1:

Tackle the Climate Crisis



Goal 2:

Take Decisive Action to Advance Environmental Justice and Civil Rights



Goal 3:

Enforce Environmental Laws and Ensure Compliance



Goal 4:

Ensure Clean and Healthy Air for All Communities



Goal 5:

Ensure Clean and Safe Water for All Communities



Goal 6:

Safeguard and Revitalize Communities



Goal 7:

Ensure Safety of Chemicals for People and the Environment

BUDGET OF THE U.S. GOVERNMENT

FISCAL YEAR 2022



- EJ as National Program with AA
- Significant increase in investment across EPA and within EJ program
- + Significant funding/set-asides in both the Infrastructure and Build Back Better packages



- American Rescue Package
- Resources spread across numerous EPA activities and across all ten regions
- + \$50M for community air monitoring
- Significant opportunity to engage communities and other partners (states, tribes)

Partnerships

- EPA cannot address the needs of overburdened communities alone
- Whole-of-government approach (federal, state, local, tribal)
- Many state and local agencies are ahead of us (California, New Jersey, New York)
- Communities know what they need - investments and other actions must be community-driven, community-led
- EPA is ready to partner, providing funding, resources, assistance, data, tools and leadership.

Contact Info

Philip Fine
Principal Deputy Associate Administrator
Office of Policy
US Environmental Protection Agency
fine.philip@epa.gov

Matthew Tejada
Director of Environmental Justice
US Environmental Protection Agency
tejada.matthew@epa.gov



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 4

Overview of Air Pollution, Inequity, and Community Health in the Bay Area

**Advisory Council Meeting
November 8, 2021**

**Greg Nudd
Deputy Air Pollution Control Officer
gnudd@baaqmd.gov**

Presentation Overview



- Previous meetings covered the following issues:
 - Background on the Air District, our mission, vision and path forward
 - Climate protection efforts
- Over the next two meetings staff will review key areas of focus including:
 - November 8, 2021: Community Health and Equity Initiatives
 - December 13, 2021: Particulate Matter (PM) Report

What are the Data and Models Telling Us?

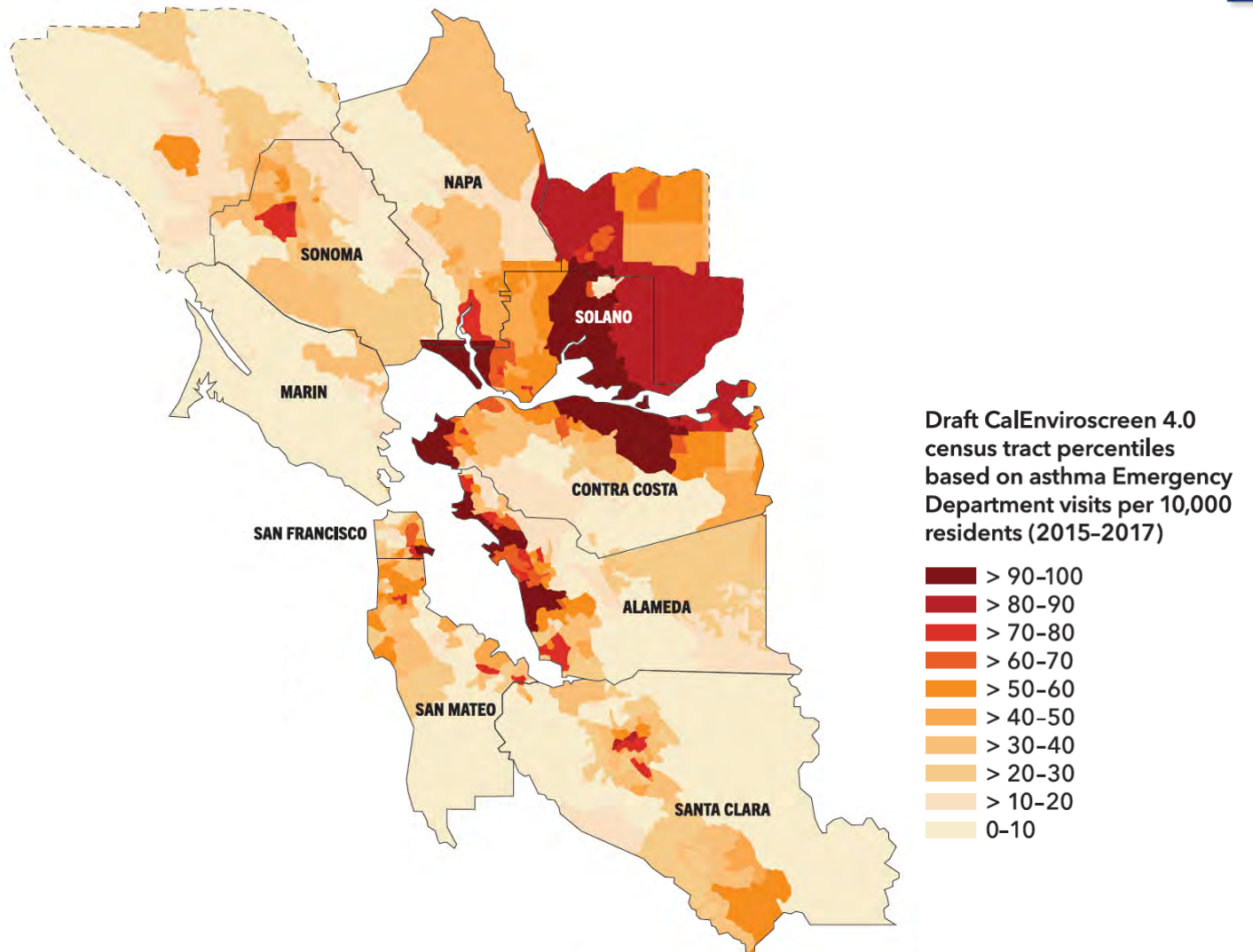


- Inequitable health outcomes
- Inequitable air pollution burden
- Upcoming work on modeling and measurements

Community Health



- Inequity in health outcomes
 - Asthma Emergency Department Visits

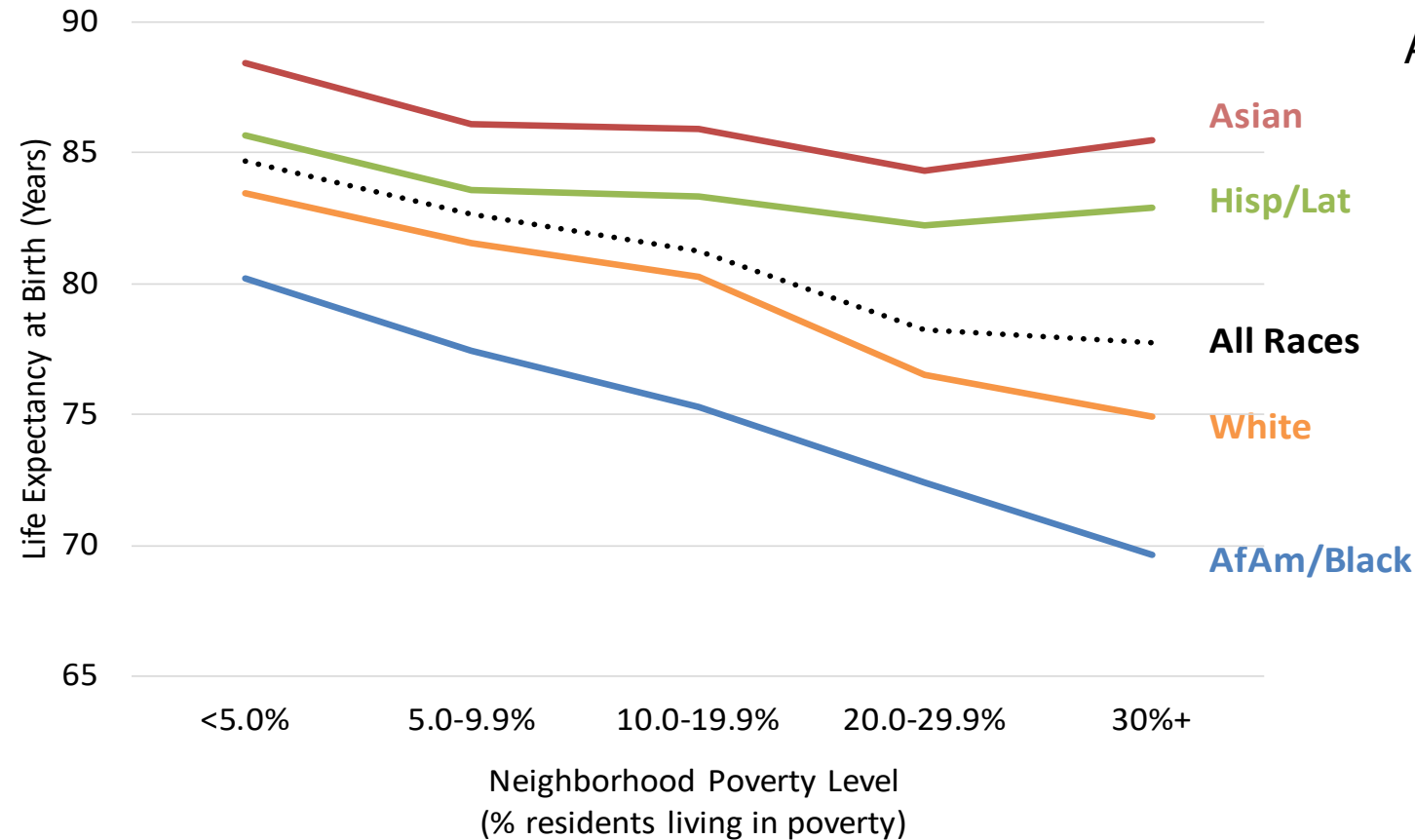


Source: CalEnviroScreen 4.0 Asthma Indicator

DRAFT CALENVIROSCREEN 4.0, ASTHMA INDICATOR

Health Inequities

Life Expectancy by Neighborhood Poverty Level and Race

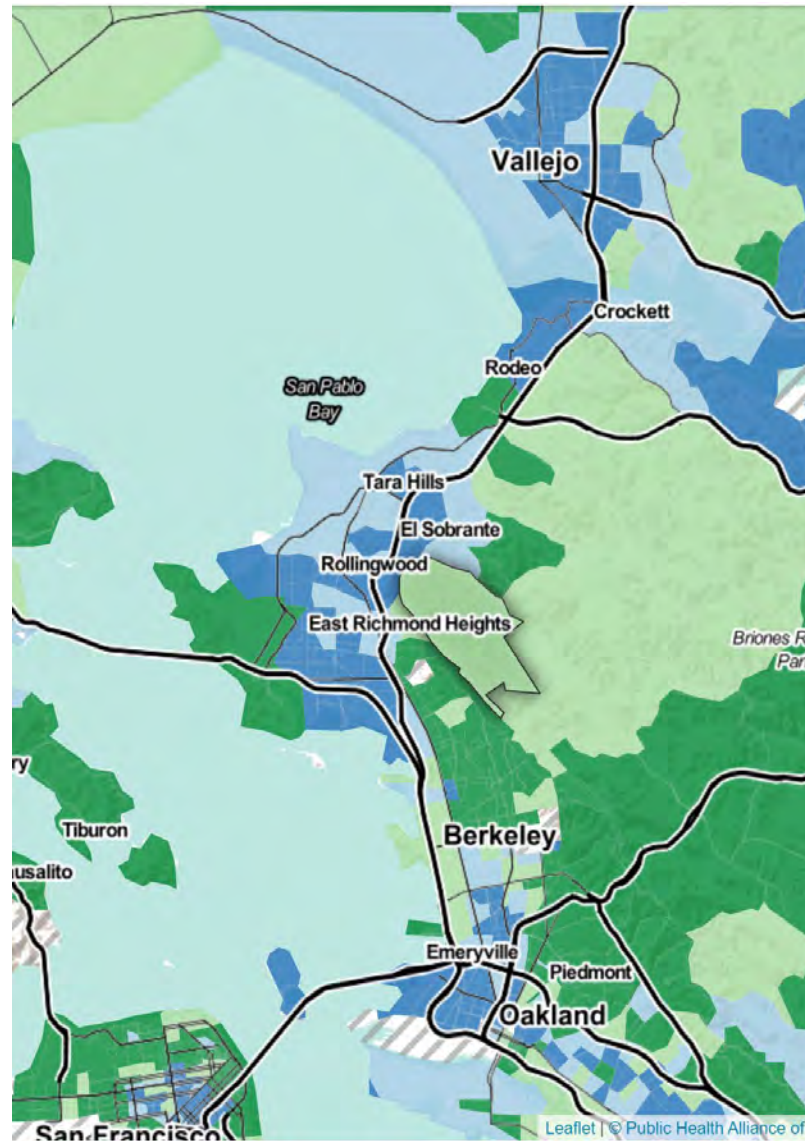
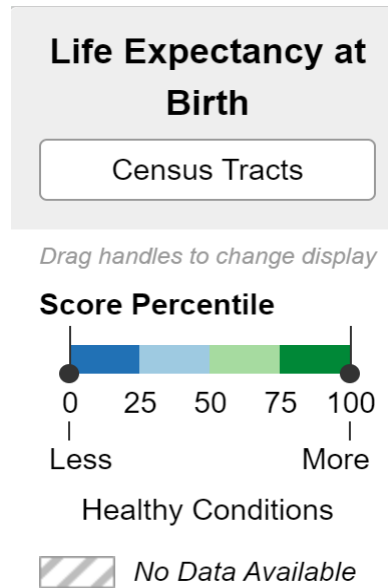


Source: Alameda County Vital Statistics files, 2013-2015; Neighborhood poverty data from American Community Survey, 2011-2015

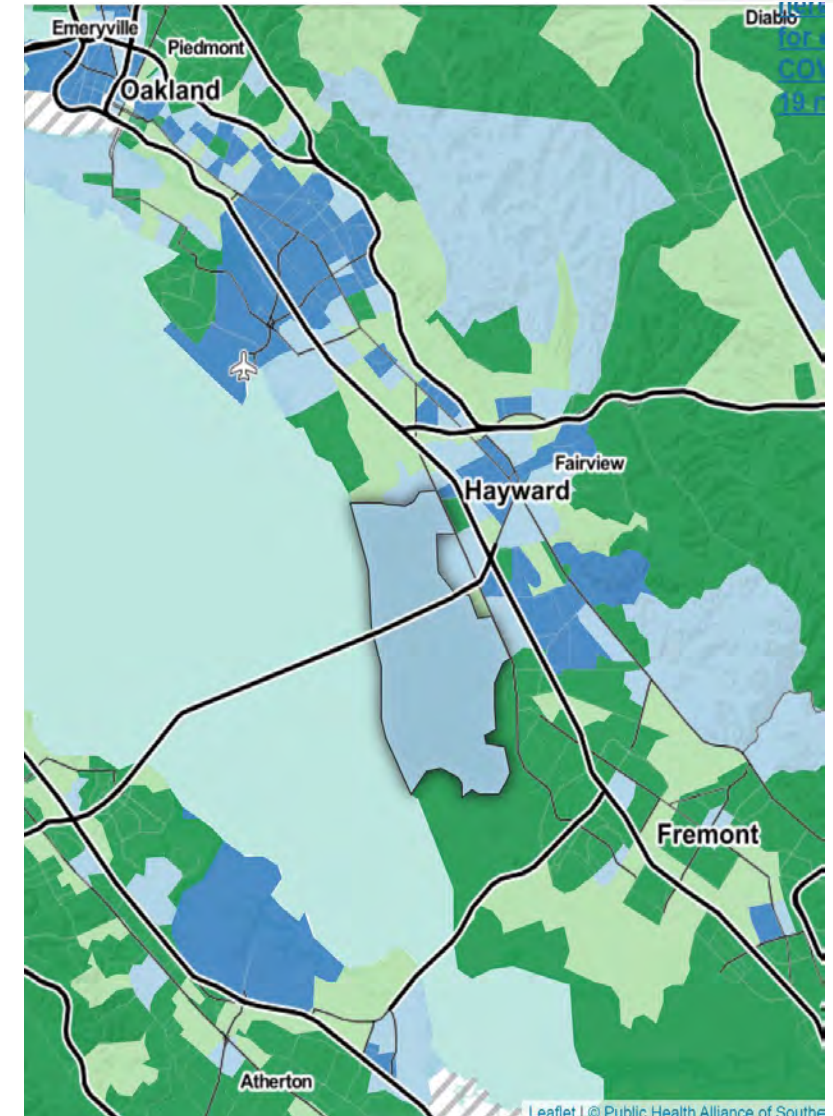
Community Health



- Inequity in health outcomes
 - Life Expectancy at Birth



Bay Area Air Quality Management District



Source: Healthy Places Index

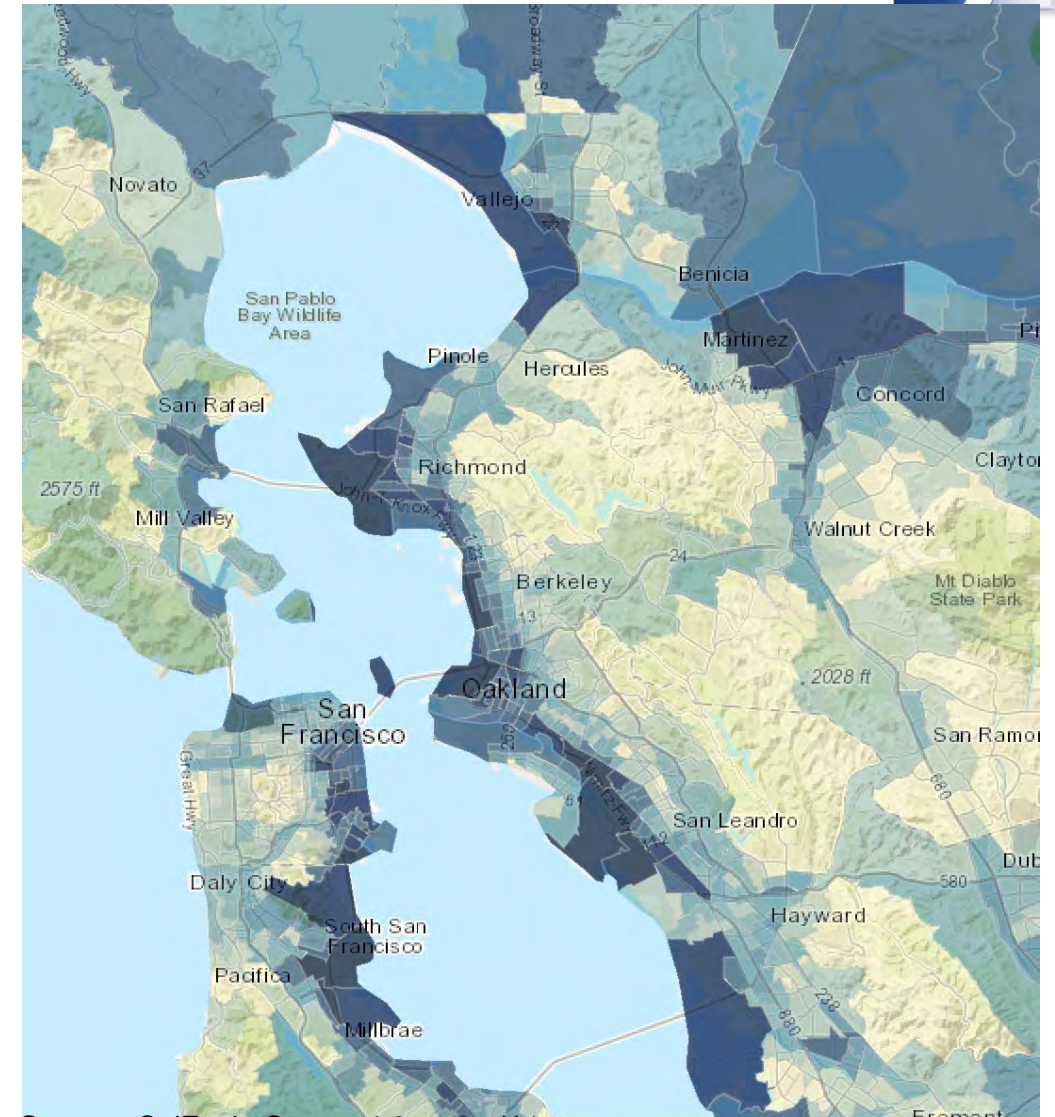
Air Pollution



- What is the available data telling us?
- There are variations in exposure

Pollution Burden

Combined score of multiple types of pollution including PM_{2.5}, diesel PM, and ozone

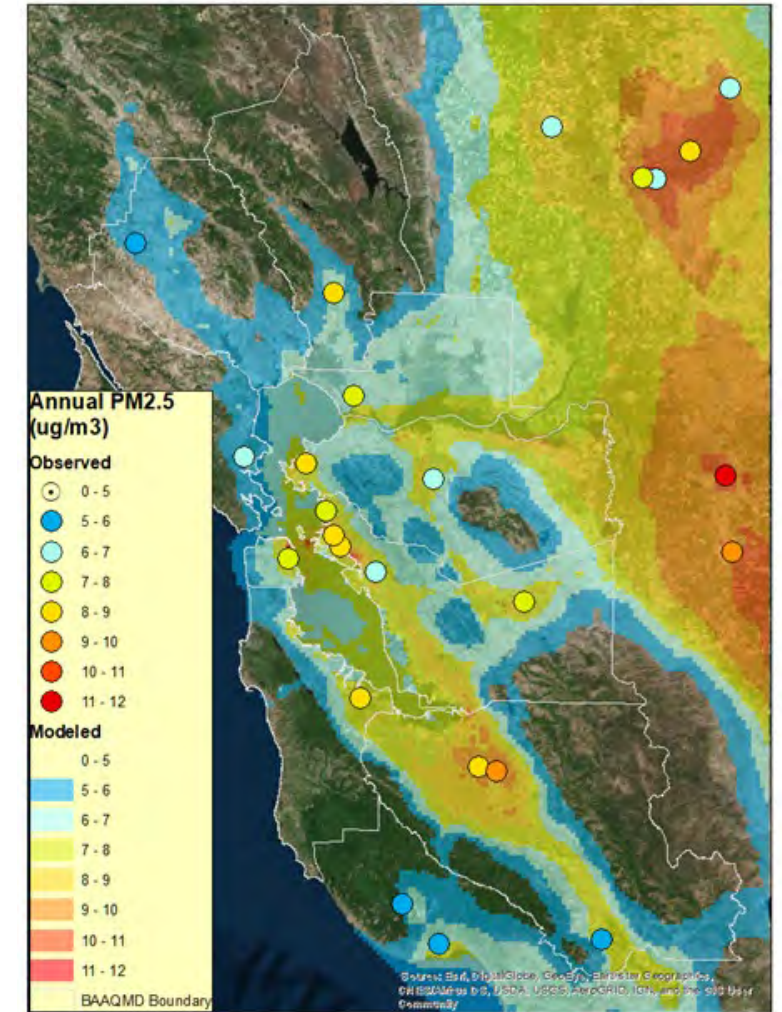


Source: CalEnviroScreen 4.0

Air Pollution: Regional PM_{2.5} Modeling



- Modeled 3 years (2016-2018) with 1-km grids
- Estimate spatial patterns and primary vs. secondary PM contributions
- Support Assembly Bill (AB) 617 and rulemaking efforts
- Improvements to emissions inputs underway:
 - PM from residential wood burning
 - Ammonia from various sources



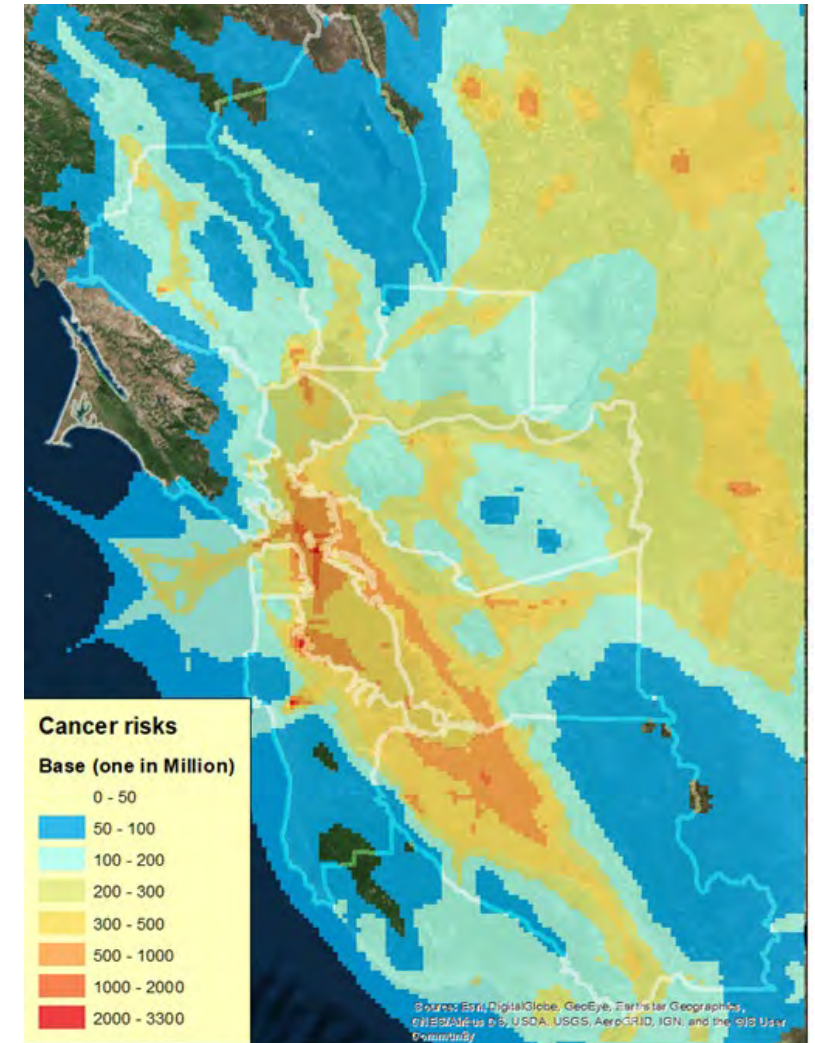
Annual Average PM_{2.5} Concentrations (2016)

Air Pollution: Regional Air Toxics Modeling



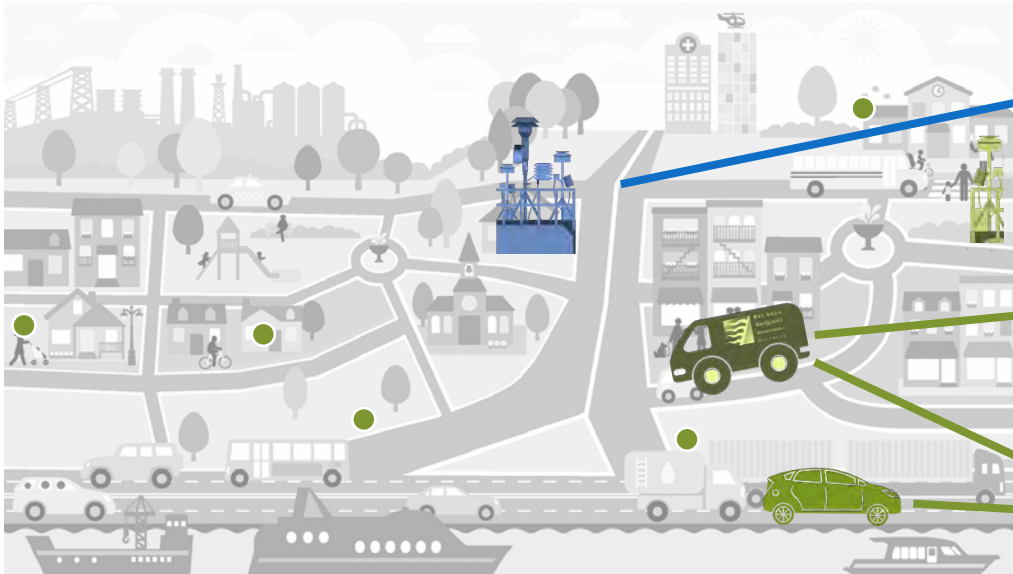
- Modeled 3 years (2016-2018) with 1-km grids
- Cancer risk:
 - Based on annual-average air toxics concentrations (70-year exposure)
 - From diesel PM, key toxic gases* and toxic metals
- Estimate spatial patterns in toxics and risk levels to support AB 617

* *benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein*



Modeled Cancer Risk (2016, per million)

Measuring Air Pollution – Expansion of Monitoring and Analysis Options to Understand Inequities



Long-Term Network

High accuracy equipment at ~30 stations in the Bay Area

Short-term Monitoring

High or medium accuracy equipment at a single location for hours to months

Mobile Monitoring

Low, medium, or high accuracy equipment to measure snapshots of concentrations along roadways

Sensor Networks

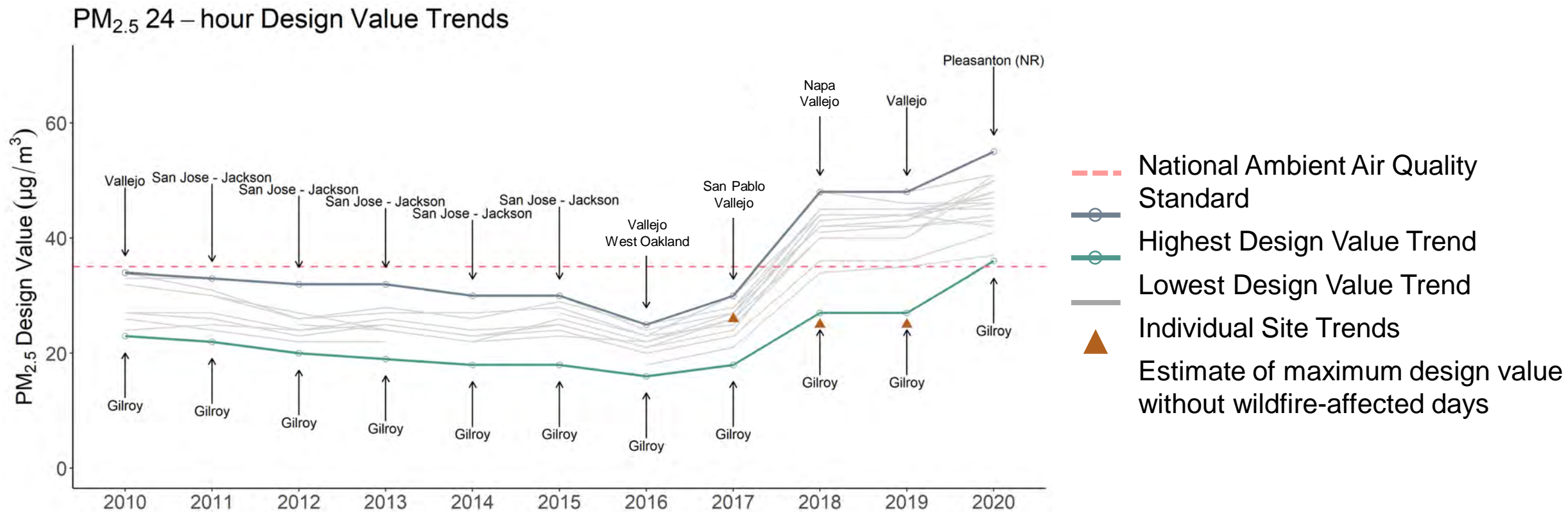
Low-cost sensors for higher density real-time data, community-led science



Data Analysis

Including new analyses of long-term network data

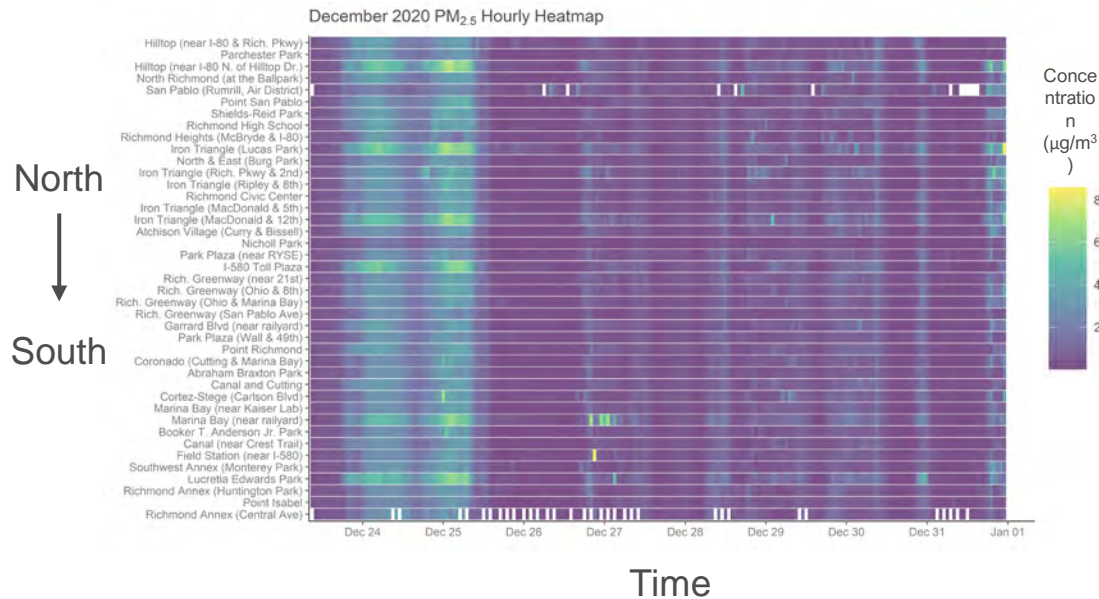
Ambient Concentrations Area-wide Measurement Trends (24-hour PM_{2.5})



Measuring Air Pollution - Inequities



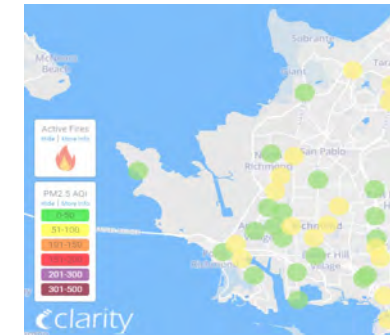
Hourly PM concentrations within a community



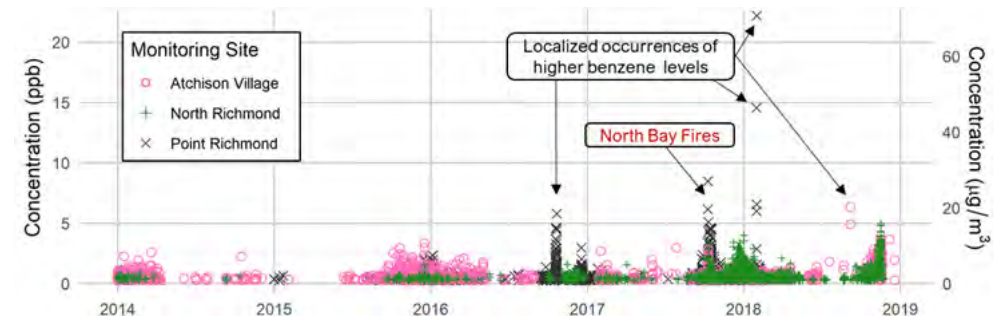
Estimated typical PM on all streets



Real-time PM



Hourly benzene levels around refinery



What Actions is the Air District Currently Taking?



- Community-developed emissions reduction and monitoring plans under AB 617
- Incentives for cleaner mobile source equipment
- Community Advisory Council
- Changes to permitting regulations; additional rules in the pipeline
- Prioritizing Enforcement in AB 617 Communities
- Implementation of Rule 11-18

AB 617 Program Overview



- AB 617 signed into law in 2017
- Air District partnering with communities to co-develop solutions to higher levels of air pollution in environmental justice communities
- Address disproportionate exposure to harmful air pollutants

Bay Area Communities



Designated Communities

- West Oakland
- Richmond-North Richmond-San Pablo
- East Oakland (pending designation)

“High Priority” Communities

(in alphabetical order)

- East County (Contra Costa)
- Eastern SF
- San Jose
- San Leandro
- Tri-Valley
- Vallejo



A Community Centered Program





“Owning Our Air” West Oakland Community Action Plan



FINAL

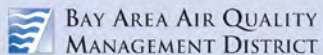


OWNING OUR AIR

The West Oakland Community Action Plan – **Volume 1: The Plan**

October 2019

A joint project of the Bay Area Air Quality Management District and West Oakland Environmental Indicators Project



A joint effort of the West Oakland Environmental Indicators Project (WOEIP), the Bay Area Air Quality Management District (Air District), and a Community Steering Committee

The title reflects the belief that self-determination is key to successful environmental justice action

Adopted by the Air District in October 2019

Adopted by the California Air Resource Board (CARB) in December 2019



Community Centered Planning



Air District completed ground-breaking community-level modeling work to better understand local emissions and exposure

Steering Committee comprised of community members and agency staff provided expertise and knowledge to collectively craft Plan strategies, goals and targets



*Charles Tyrone Reed,
Co-Chair Land Use*





Owning Our Air Implementation Approach



Co-leads working closely with community and agency partners on implementation

Steering Committee continues meeting monthly – remotely due to COVID-19

Four subcommittees met monthly from January 2020 to September 2021 to prioritize strategies and measures

Action specific implementation teams to form to advance high priority strategies





Owning Our Air Implementation Progress



Health

Health Equity Advisory Committee formed

City Council to hear health-protective City Planning Code Amendments

Urban Greening grants from Metropolitan Transportation Commission (MTC) Alameda County Transportation Center (ACTC), California Air Resources Board (CARB) and Port of Oakland (POAK) totals 1M+

Land Use & Mobile Sources

California Waste Solutions (CWS) to move to Gateway Industrial District

“Electric Vehicle (EV)-ready” buildings are required; Natural Gas (NG) in new buildings banned

Sustainable Port Collaborative formed

City develops tools to reduce emissions from truck-attracting businesses

Regulations & Enforcement

CARB adopts Advanced Clean Truck regulation & amends At-berth reg.

On-going Air District inspections of all permitted sources in West Oakland

Air District updates Complaint Policy to improve referral system

CARB amends TRU reg. in 2022 (expected)

West Oakland Investments

ACTC awards 2M for bus stop improvements, free transit passes

Caltrans awards 14M for the 7th Street Connection Project

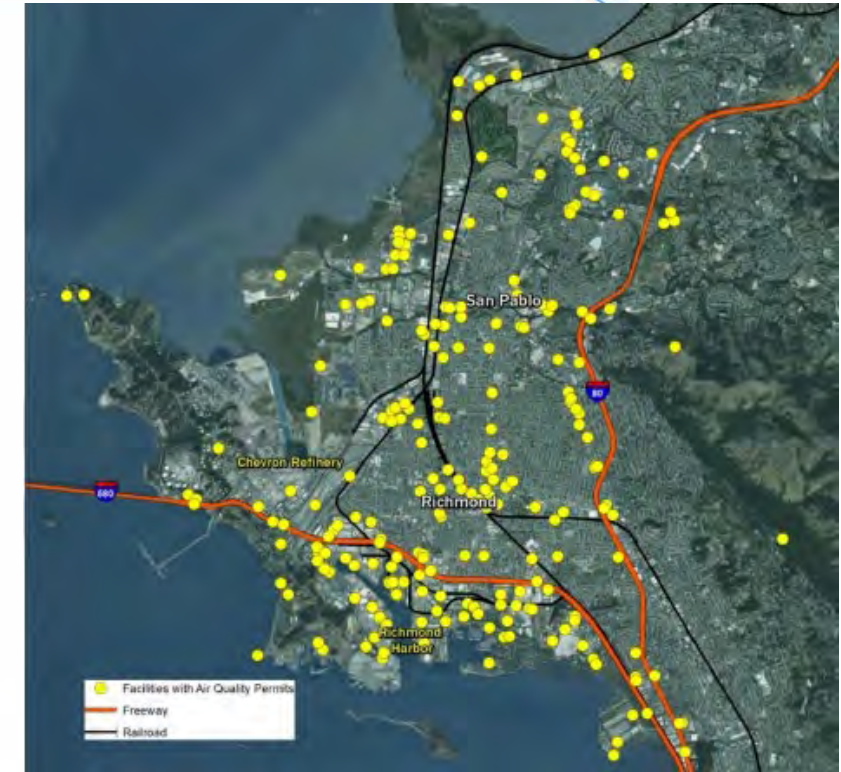
Air District awards 3M to deploy 30 hydrogen fuel cell drayage trucks domiciled at POAK

Over half the tugboats at POAK repowered with cleaner diesel engines

Why Richmond, North Richmond, San Pablo?

Residents in the Richmond-San Pablo area are exposed to a substantial and complex mix of air pollutants including:

- Petroleum refinery
- A chemical plant
- A coal and petroleum coke terminal
- Organic waste, metal recycling facilities
- Wastewater treatment plants, a landfill, and industrial and manufacturing plants of various sizes.
- Mobile sources such as I-80, I-580 and on roadways such as Richmond Parkway and San Pablo Avenue, seaport operations, railways, and railyards.



RICHMOND - NORTH
RICHMOND - SAN PABLO
COMMUNITY **PATH TO**
CLEAN AIR

Community Co-Leading the Process

Community Steering Committee

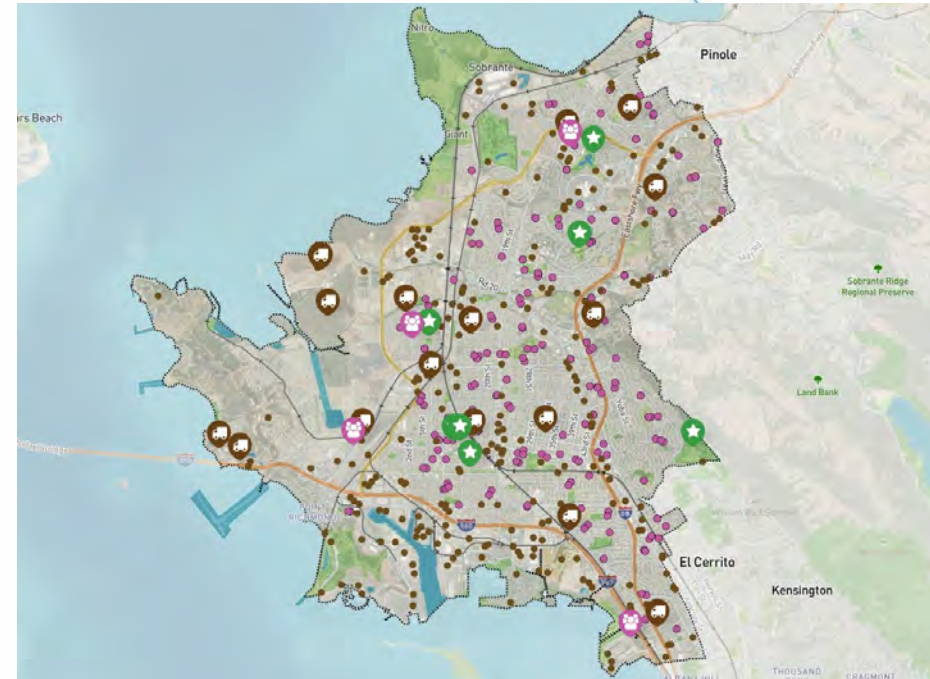
27 to 31-member group of local leaders and Co-Chairs to co-develop the Community Emissions Reductions Plan

Community Organizing Micro-Grants

\$75,000 for local organizations to identify community places and concerns

Social Pinpoint

Interactive mapping platform to gather community input to prioritize resources

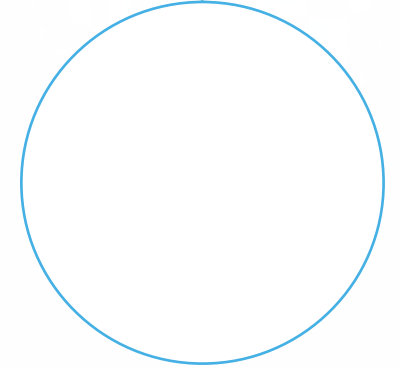


Path to Clean Air Community Pollution and Mapping Project Boundary

RICHMOND - NORTH
RICHMOND - SAN PABLO
COMMUNITY **PATH TO**
CLEAN AIR

Progress to Date

- ✓ Steering Committee selected and seated
- ✓ Two Steering Committee Co-chairs selected
- ✓ Steering Committee Charter developed and adopted
- ✓ Vision and Principles for the Plan developed and adopted
- ✓ Six Community Organizing Micro-Grants awarded
- ✓ Social Pinpoint interactive mapping platform launched



East Oakland



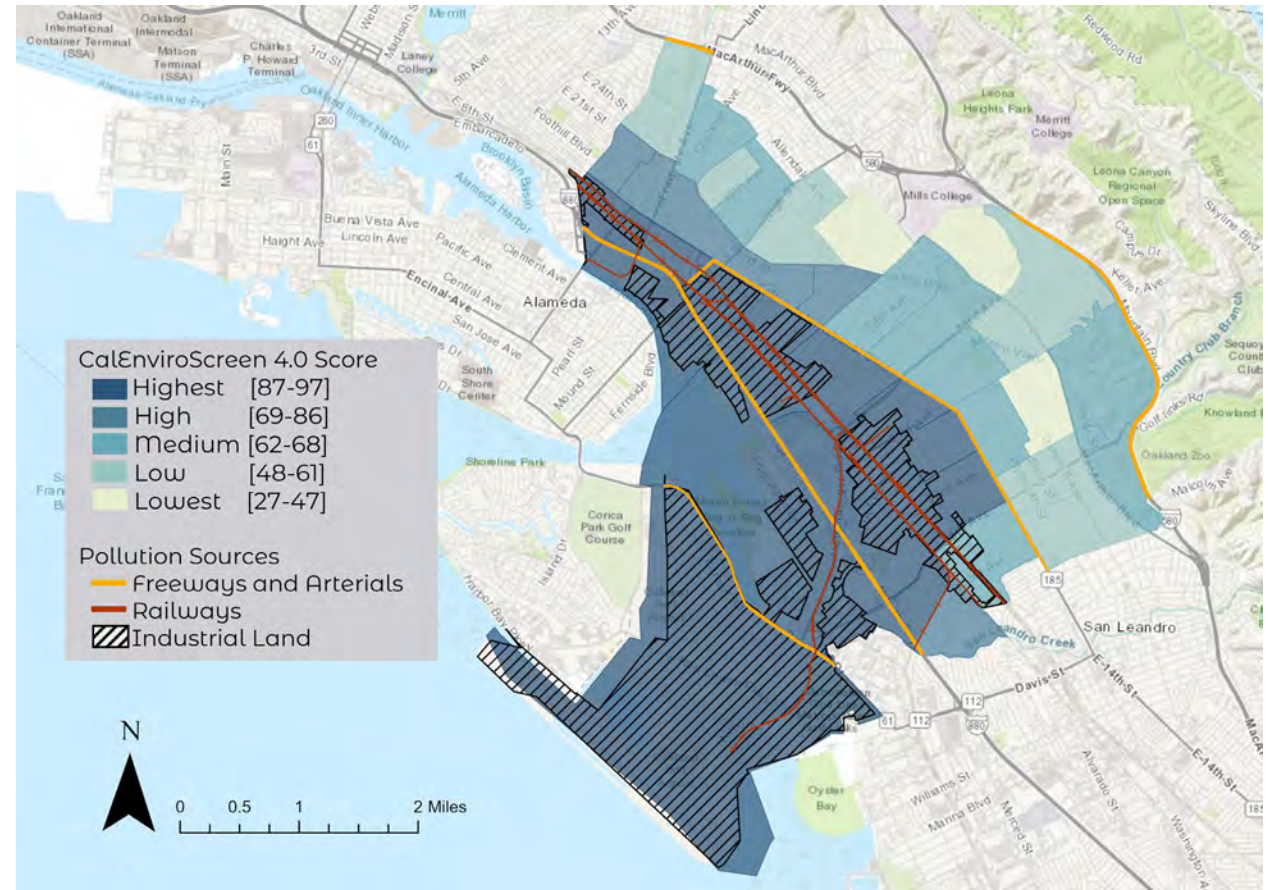
Source: The BlackHour.com, CC By 2.0

- At November 3, Board of Directors meeting, staff recommended that East Oakland be considered by CARB for 2022 plan development
- Community has advocated for selection to develop a community emissions reduction plan every year since AB 617 program began
- East Oakland has high levels of air pollution, inequitable health burdens, decades building community capacity and leadership, and existing inter-neighborhood coalition and collaboration

East Oakland Air Pollution



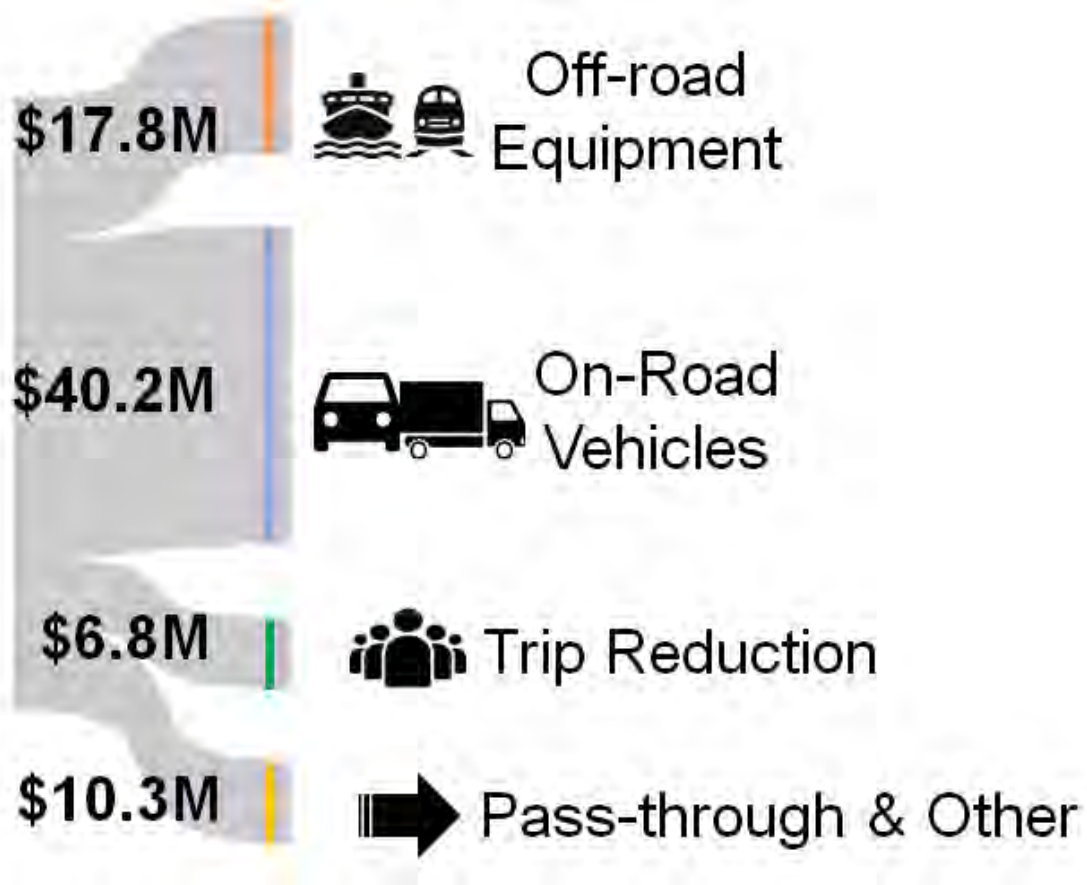
- Much of the “flatlands” of East Oakland experience high levels of pollution
- Major goods movement and transportation corridor
- Large areas adjacent to industry and truck magnet businesses



Incentives Awarded in 2020



~\$75 Million (M)



- >60% (\$45M) of funds benefitting
 - Disadvantaged & low-income communities
 - Low-income residents
- ~30% of funds to deploy zero-emission medium- & heavy-duty technology
- Focus on zero-emissions and cleanest available technology in 617 communities

Next Steps



Implement	West Oakland Community Action Plan
Develop	Community Action Plan in Richmond-North Richmond-San Pablo
Recommend	East Oakland for Community Action Plan
Provide	James Cary Smith Community Grant Funding
Continue	Building shared capacity and understanding of all communities

Community Advisory Council



- The Community Advisory Council (Council) will reflect the demographic diversity of the Bay Area, diversity of knowledge and expertise, including experience living in environmental justice communities or impacted communities
- The Council will advise the Air District Board and staff on policies and programs, such as:
 - Community selection or other aspects of Assembly Bill 617 program
 - Development of a Community Benefits program
 - Addressing inequities in the permitting program

Air Pollution and Rules



- What actions is the Air District taking?
 - Modifications to the Air District's Permitting Regulations
 - Overburdened Community Definition: census tract $\geq 70^{\text{th}}$ percentile CalEnviroScreen Version 4.0 or within 1,000 feet of any such tract
 - More stringent cancer risk limit of 6 in one million in Overburdened Communities
 - Enhanced notification to projects within Overburdened Communities
 - Updates to Risk Assessment Procedures and Health Effects Values

Air Pollution and Rules (cont.)



- What actions is the Air District taking? (cont.)
 - Amendments to Rules 9-4 and 9-6
 - Point of sale rule to reduce NOx emissions from natural gas-fired space and water heating appliances
 - Currently proposing an ultra-low NOx emission limit and introducing a zero NOx emission standard

Air Pollution and Rules (cont.)



- What actions is the Air District taking? (cont.)
 - AB 617 Expedited Best Available Retrofit Control Technology (BARCT) Implementation Schedule
 - 6 rules – organic liquid storage tanks, petroleum wastewater treating, Portland cement manufacturing, refinery heavy liquid leaks, petroleum coke calcining, and refinery fluid catalytic crackers (completed July 2021)
 - Rulemaking to be completed by December 31, 2023
 - AB 617 Community Emission Reduction Plans
 - West Oakland Action Plan – sources and/or rules highlighted for evaluation

Prioritizing Enforcement in AB 617 Communities



- Performed preliminary review and assessment of enforcement data in AB 617 communities to identify compliance concerns and help improve collective understanding of air pollution sources and operations
- Updated Air Quality Complaint Program and investigation procedures in 2020 to address community concerns
- Increased inspections in Richmond/San Pablo and West Oakland
- Implemented targeted inspections and investigations based on enforcement data findings and field observations
- Future Activities: Joint Inspections with CARB on Mobile Sources at Port of Oakland

Facility Risk Reduction (Rule 11-18)



- Applies to Stationary Sources at Existing Facilities
 - 34 Phase I Facilities and 290 Phase II Facilities
- Requires Health Risk Assessments (HRA) and Sets Action Levels
 - 10 in a million cancer risk
 - 1.0 chronic or acute hazard index for non-cancer impacts
- Requires Facilities to Reduce Facility Risks Below Risk Action Levels or Apply Best Available Retrofit Controls to all Significant Sources
- Implementation Status
 - 21 Emission Inventory Updates, 6 Preliminary HRAs, and 3 Draft HRAs
 - Held Public Meeting on draft HRA for AB&I Foundry in East Oakland
 - Expediting HRAs for Facilities in AB 617 Communities
 - Implementing Program Improvements to Accelerate HRA approval and Installation of Risk Reductions

Discussion Questions



- Is there anything that we've missed? What more could we be doing with the tools we have?
- What metrics should the Air District use to track progress and prioritize actions? Who should be at the table to decide those metrics?
- What questions does the Advisory Council want to consider?