

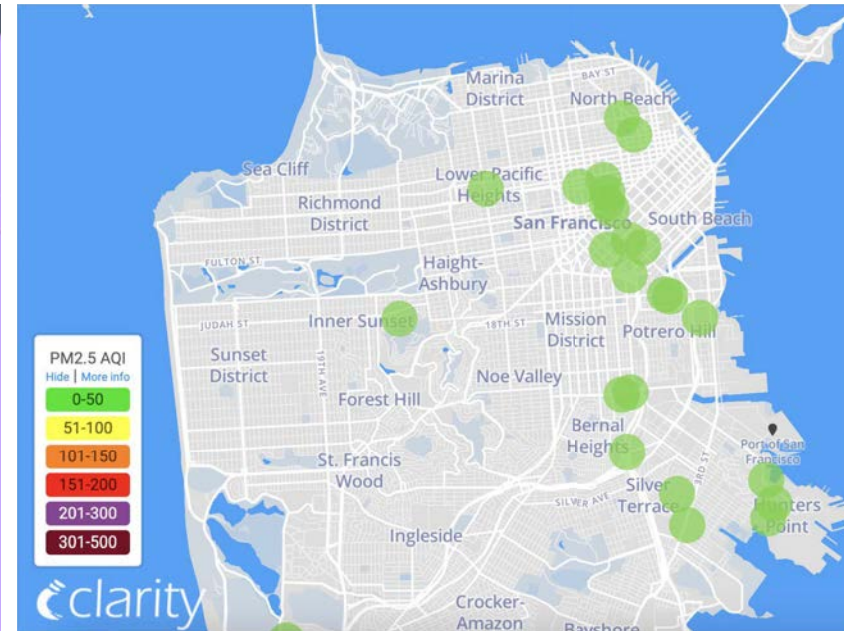
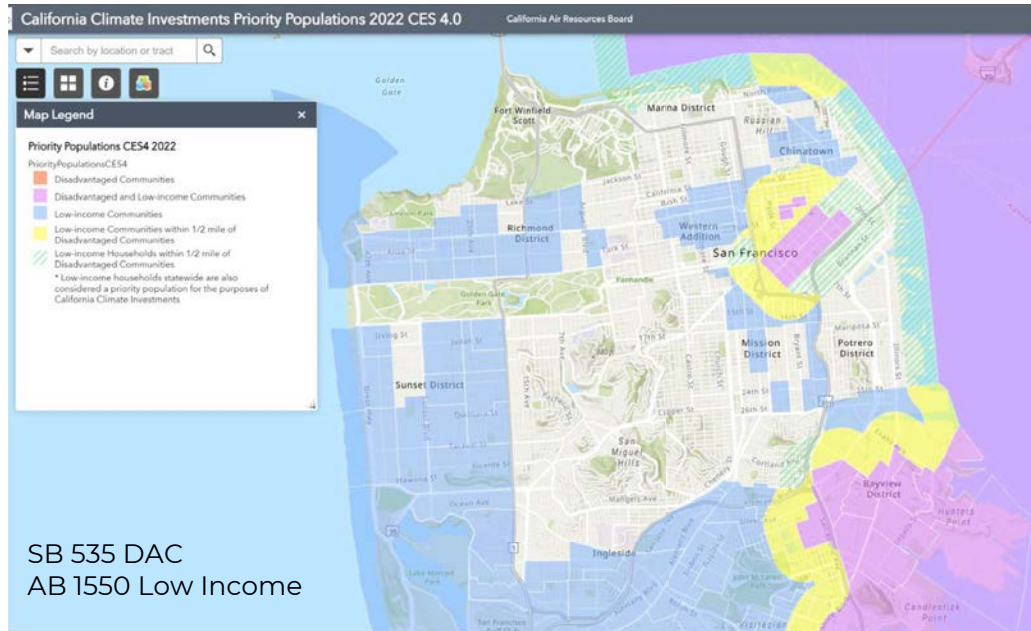
Brightline's Air Quality Monitoring Program

About Brightline

Brightline is an environmental justice nonprofit organization, our primary mission is to empower communities and create sustainable environments.



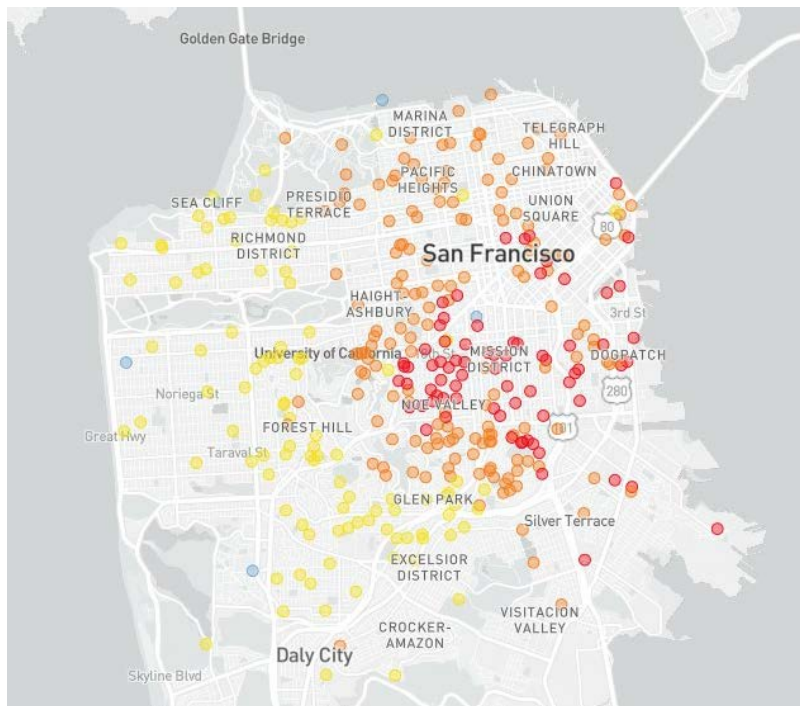
Serving Priority Populations in San Francisco



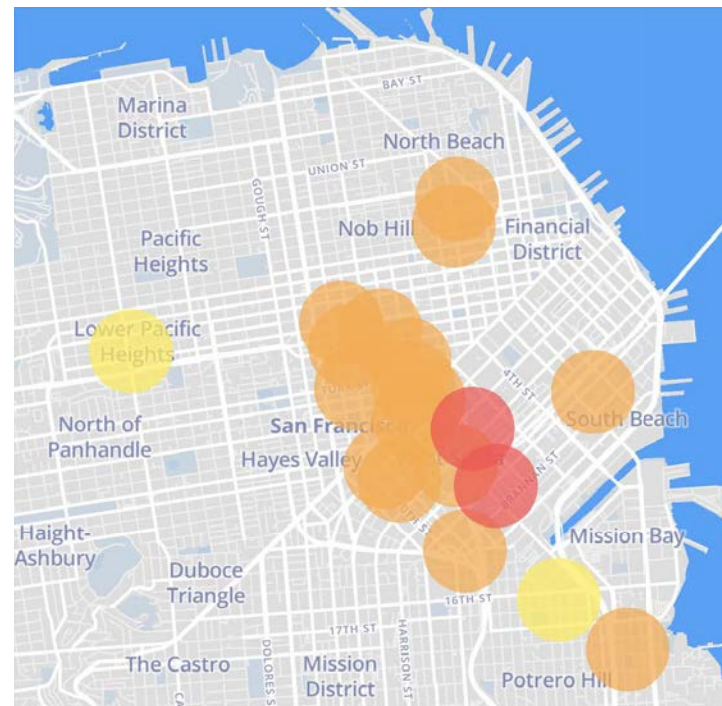
Sensor Siting and Calibration with BAAQMD



Disproportionate Impacts Across SF (1.13.22)



SF Chronicle Air Quality Map



Open Data Map: tinyurl.com/BrightlineAQ

Community Partnerships

Central City SRO Collab

Collaborative that builds community morale and enhances the quality of life of SRO tenants.



Community Youth Center

Nonprofit that provides high-need youth with education and employment opportunities.



Technical Partnerships

Clarity Movement

Technical partner that make it accessible for cities and industries to measure and understand air pollution issues and take effective action.



UC Berkeley

Technical partner that helps design, implement, and scale effective and equitable learning experiences.



Central City SRO Collaborative



**do you know
what's in your air?**

check here to find out and learn more about
the air quality in your area!

scan your iPhone
camera here OR visit this link!

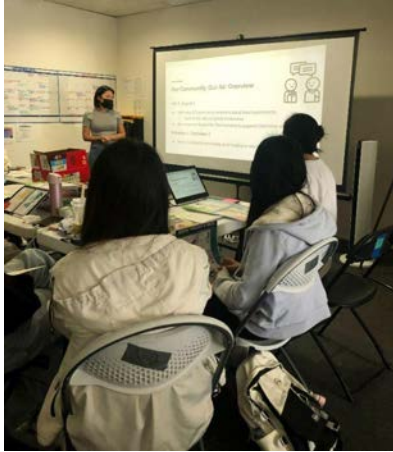
 tinyurl.com/brightlineaq

brightlinedefense.org
f Brightline Defense Project
@brightlinedefense

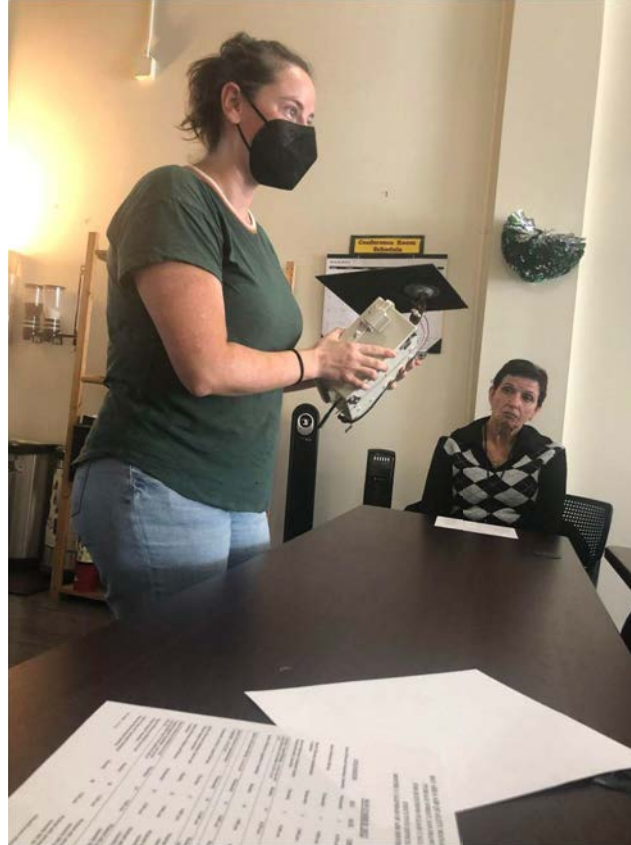
brightline CARB
CVC clarity

8

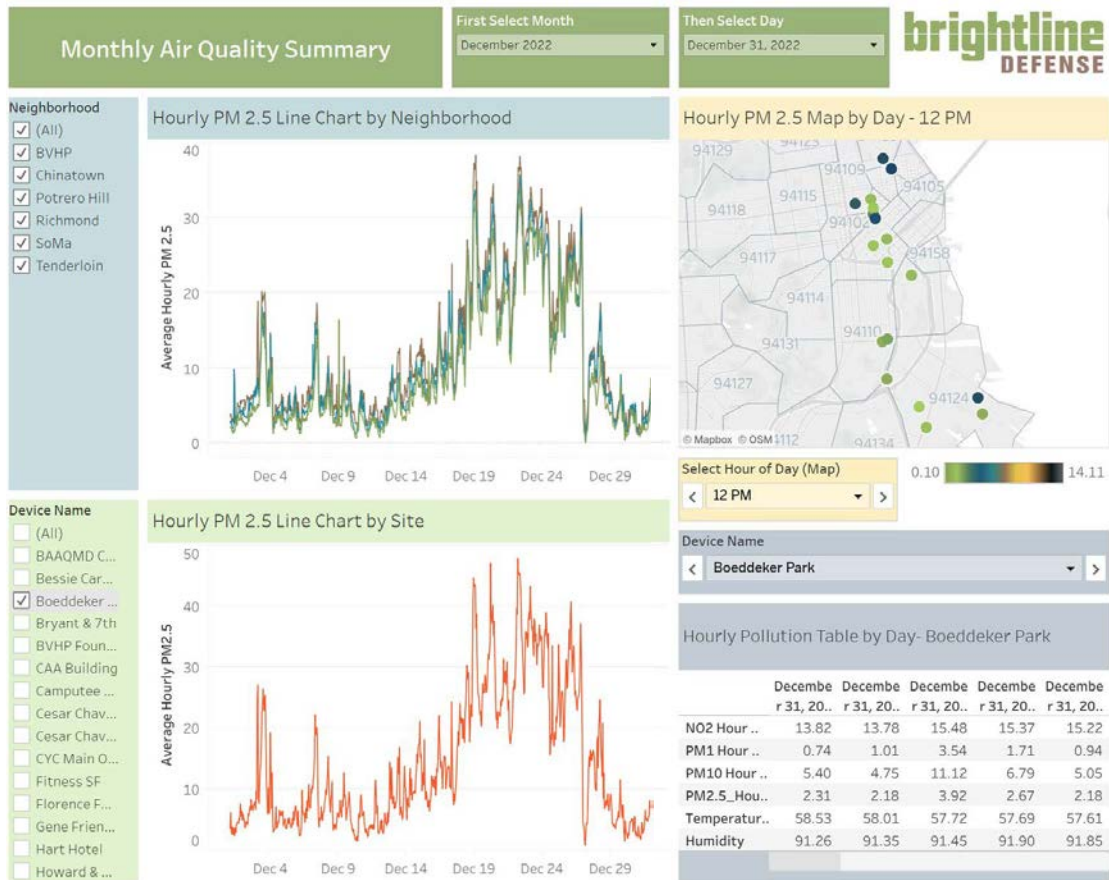
Community Youth Center of San Francisco



Partnership with UC Berkeley for Black Carbon



Data Analysis at tinyurl.com/BrightlineAQData



Brightline's Air Quality Programming Timeline



Jan
2020

Aug
2020

July
2021

Aug
2021

Dec
2022

Today

Kickoff AB 617 Meeting

Brightline first met with community partners and prepped for deployment.

AQ Sensors Pick Up Wildfire Smoke

21 Sensors are deployed and pick up initial wildfire smoke.

"Little Room to Breathe" Report

Brightline and partners interviewed 255 SRO building residents on air quality and health.

CARB Chinatown Tour

Convened CARB and BAAQMD staff to meet community leaders and tour Chinatown SROs.

Expansion with UC Berkeley

We work with UC Berkeley to expand our network with 20 Black Carbon Sensors.

Kickoff JCS Grant Year 2

Brightline is excited to continue the community capacity building with the JCS Grant Program!



Our Community, Our Air Program

Partners

La Voz Latina

Supports the various needs of low-income, monolingual Spanish-speaking immigrants in the community.



Central City SRO Collab

Collaborative that builds community morale and enhances the quality of life of SRO tenants.



Community Youth Center

Nonprofit that provides high-need youth with education and employment opportunities.



Community Workshop in Spanish



Community Workshops in English



Community Workshops and Tabling in Chinese



Bay Area Metro Center Field Trip

Brightline organized a field trip to SRO Tenant Leaders to the Bay Area Metro Center in December 2022 to familiarize them with the meeting spaces for Year 2!



Questions?

Bay Area Air Pollution Health Risk Assessment: Translating data to action in partnership with West Oakland Environmental Indicators Project

Presentation to Bay Area Air Quality Management District
Community Equity, Health and Justice Committee of the Board of Directors
May 17th, 2022

Maria Harris, Fern Uennatornwarangoon, Ananya Roy, Veronica Southerland
Environmental Defense Fund

Ms. Margaret Gordon, Brian Beveridge
West Oakland Environmental Indicators Project



West Oakland Environmental Indicators Project



Environmental Justice

WOEIP is a resident led, community-based environmental justice organization dedicated to achieving healthy homes, healthy jobs, and healthy neighborhoods for all who live, work, learn, and play in West Oakland, California.



Air Quality Research

Using a Participatory Research model, our programs and projects focus the diverse voices of impacted residents on a clear message of toxics reduction and neighborhood planning for local benefits. Our community's research has fueled legislation and regulatory policy in the City of Oakland and the State of California.



Coalition Building

Our Collaborative Problem-Solving model is a blueprint for how local communities can bring diverse stakeholders together to drive on-the-ground change.

Hyperlocal air pollution variability impacts health in West Oakland

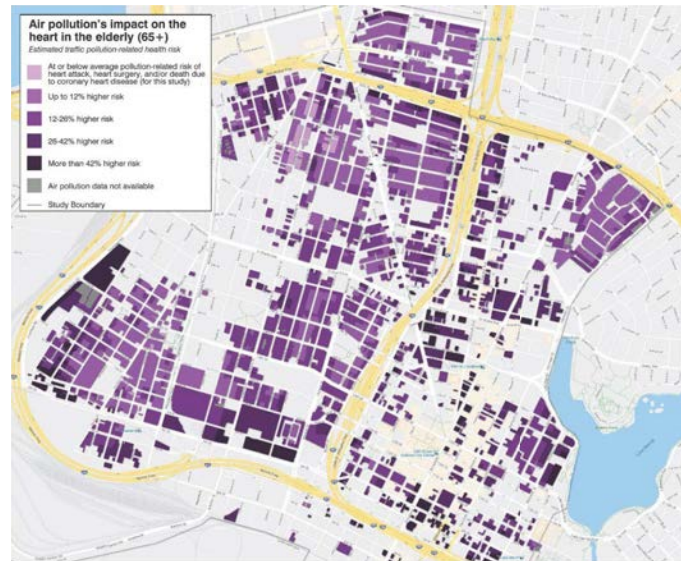
Data: 1 year of air pollution measurements (BC, NO, NO₂) using fast response sensors on Google Street View cars. 400+ unique miles of roads. 14,000+ miles driven total. Each road/highway segment sampled 30+ times.



Finding: Within West Oakland, some areas had **5-8 times** higher median pollution levels than others. Many parts of the neighborhood had higher air pollution than levels measured at the central regulatory monitor.

Apte et al. 2017

Data: Electronic medical records of 41K people insured by Kaiser Permanente health care, linked with air pollution at residential address.



Finding: Elderly residents (age 65+) living in areas of West Oakland with the highest concentrations of NO₂ would have **>40% greater risk** of a cardiovascular disease event than those in less polluted areas of the neighborhood.

Alexeeff et al. 2018

Explore: Interactive map and points of interest

Black carbon Nitric oxide Nitrogen dioxide

Black carbon particles come from burning fuel, especially diesel, wood and coal. High exposure is associated with heart attacks, stroke and some forms of cancer.



OWNING OUR AIR

The West Oakland Community Action Plan – A Summary

October 2019

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



Bay Area Heath Risk Asssesment



Air Pollution
Data

+



Concentration
Response
Function*

+



Baseline
Disease
Rates

+



Population
Data

*Estimated health effect of pollution based on epidemiological research

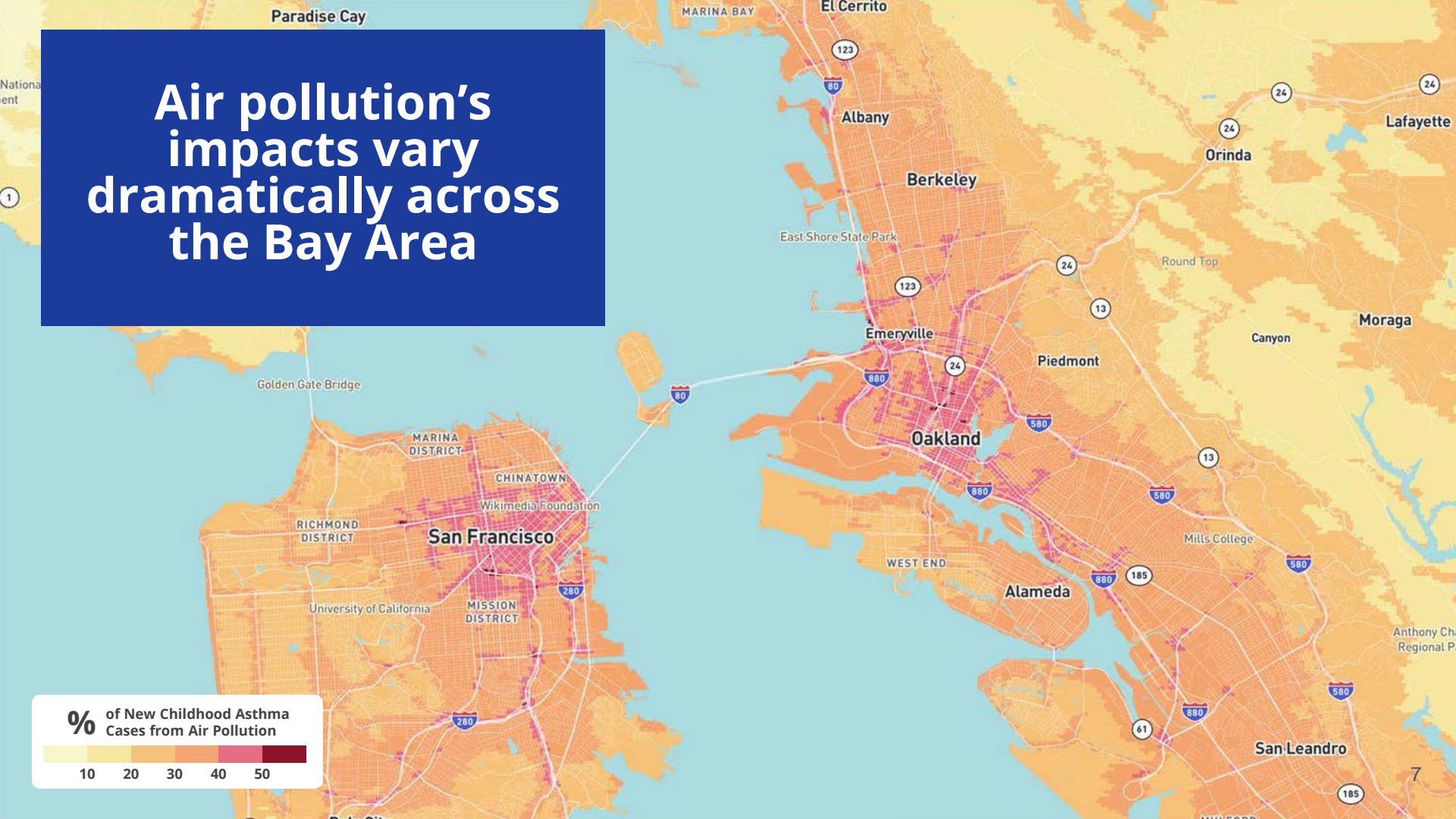
**Major health
impacts from
air pollution in
the Bay Area**

2,520
Deaths per year

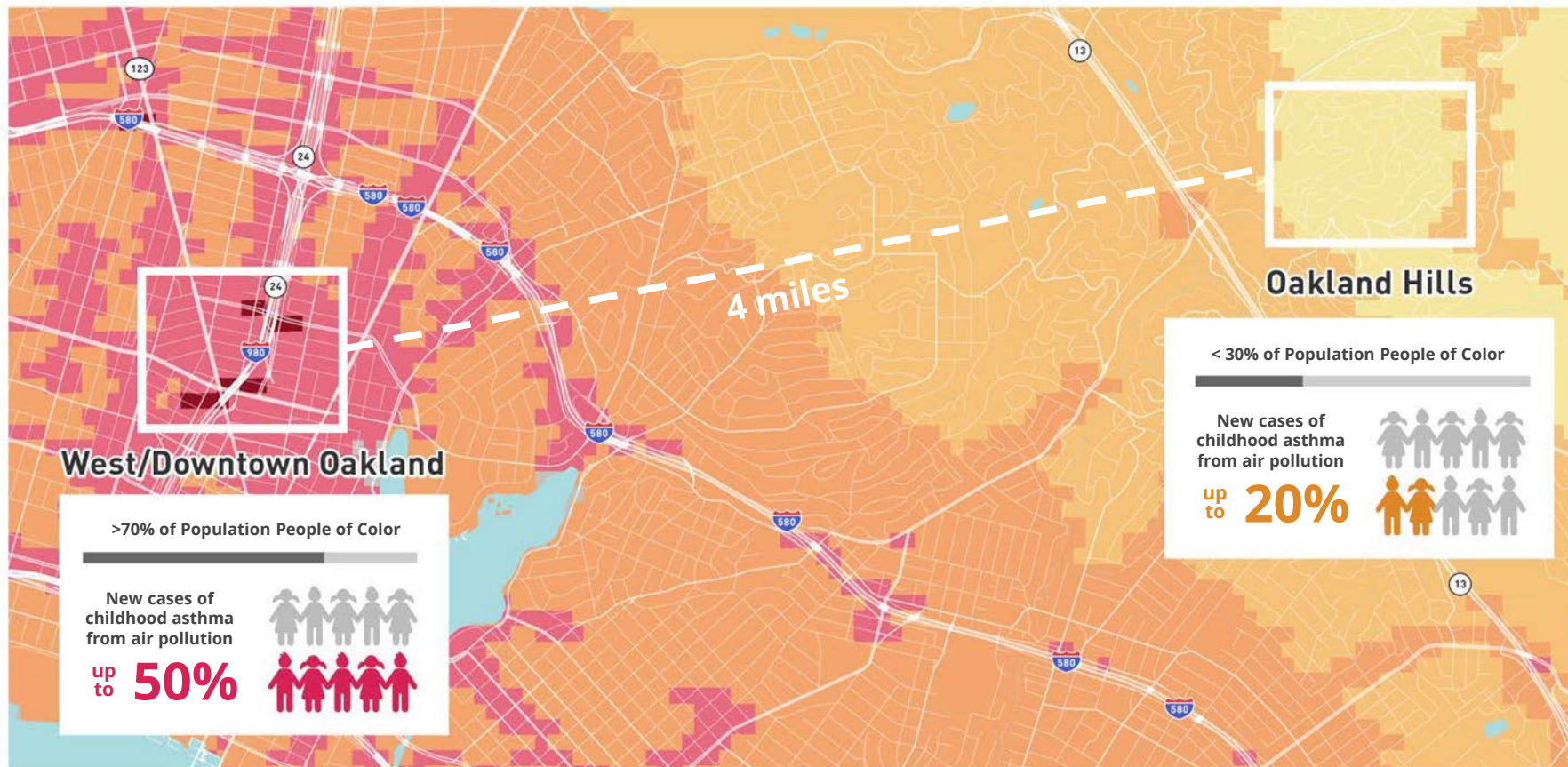
5,210
New childhood
asthma cases
per year



Air pollution's impacts vary dramatically across the Bay Area



Communities of color face higher rates of health impacts from air pollution



Hyperlocal data reveal greater health disparities

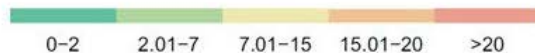
Modeled air pollution data
and **county-level mortality rates**



Hyperlocal air pollution data and
neighborhood-level mortality rates



Risk per 10,000



Implications

- Both pollution exposure and health vulnerability drive health impacts of air pollution.
- Local air and health data can reveal hotspots in health impacts that might not otherwise be recognized.
- Health assessment methods and screening tools should incorporate health and pollution data at a scale that allows for examination of within-city variability in risk and impacts.
- Understanding geographic variability and inequality in health impacts from air pollution can help policymakers and communities target mitigation efforts and develop solutions that reduce pollution exposure, address health inequities, and protect the most vulnerable.

WOCAP Health Equity Advisory Committee

- **Mission:** Provide technical assistance to the WOCAP Steering Committee in support of efforts to implement the WOCAP strategies and track progress in reducing the disproportionate health impacts of air pollution in West Oakland.
- **Participants:** Representatives of the West Oakland community, local and regional agencies, health care stakeholders, and academic researchers

HEAC participants

ACPHD

Brenda Yamashita
Maria Dominguez
Matt Beyers

Green & Healthy Homes Initiative

Brendan Brown
Kate Klinger

West Oakland Health Council

Erika Simpson-Akpawu

San Jose State University

Jennifer Hartle

UC Davis

Irva Hertz-Picciotto

BlocPower

Grace Parl-Bradbury

Alameda County Healthy Homes

Soni Johnson

East Bay Indoor Environmental

Howard Oliver

OEHHA

Lily Wu
Alvaro Alvarado
Rupa Basu

Tracking California

Daniel Madrigal
Paul English

UCSF EaRTH Center

Annemarie Charlesworth
Amy Padula

CARB

Collin Weigel
Brian Moore
Julia Luongo

BAAQMD

Judith Cutino
Anna Lee
Azibuike Akaba
Henry Hilken
Joshua Abraham
Lily MacIver

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PEHSU

Stephanie Holm

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Mark Hall

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David Gonzalez
Josh Apte

UT Austin

Sarah Chambliss

WOEIP

Ms. Margaret Gordon
Brian Beveridge

Physicians for Social Responsibility - SF Bay

Marjaneh Moini

Co-Facilitator

Beth Altshuler Muñoz

EDF

Ananya Roy
Maria Harris
Kelsey Meisenhelder

Key question: What are the health data, tools and research needed to inform local and regional air pollution regulation and track progress on reducing health impacts of air pollution in West Oakland?



Air pollution
concentrations



Health impact
estimates



Health
indicators



Vulnerability
indicators

Limitations

Data constraints:

- Data often not available at address/neighborhood level
- Delay in reporting
- Sample size

Other challenges to making causal connections between particular interventions and health:

- Time between exposure and disease
- Other factors influencing health

Moving forward

- *Local health and air data*: Policies to address air pollution inequities will be more effective when they are informed by local health and air data, at a scale which captures disparities.
 - Requires close collaboration between air quality, health, and planning agencies; resources for accessing, collecting, analyzing, and sharing data
- Planned ongoing collaborative efforts to track progress on reducing health impacts of air pollution in West Oakland

Thank you!

Maria Harris, PhD

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mharris@edf.org

