Bayview Hunters Point/ Southeast San Francisco Community Emission Reduction Plan (CERP) Community Steering Committee #10

October 15, 2024
Southeast Community Center
1500 Evans, San Francisco, CA 94124

Welcome and Introductions

Agenda

- Welcome and Introductions
- Health Impact Part 1
- Q+A Feedback
- Announcements
- Wrap Up & Next Steps

YOU ARE HERE! CERP Timeline Overview

Theme:
PARTNER WITH COMMUNITY

Key Goals:
- Set-up CSC Structure
- Establish Co-Leadership Team
- Review/Define Plan Boundaries
- Review and Build Community Profile

Key Deliverables:
CSC Charter (**Approved!**)
CSC Boundaries (**Approved**)
Community Profile (**In Progress**)

Theme:
UNDERSTAND THE CHALLENGES

Key Goals:
- Review AQ Technical, Enforcement & Health Data
- Develop Initial Visions & Principles
- Define Key Issues and Problem Statements

Key Deliverables:
__ Data Mapping **(In Progress)**
_x_ Emissions Inventory
_x_ Initial Vision development

Theme:
DEFINE THE SOLUTIONS

Key Goals:
- Research Successful Approaches
- Gain consensus on plan outline
- Develop specific objectives, goals, and action strategies

Theme:
COMMIT TO ACTION & MUTUAL ACCOUNTABILITY

Key Goals
- Develop Draft Plan for Review
- Seek Plan Adoption
  - CSC
  - BAAQMD
  - CARB
- Prepare Implementation Plan
- Annual Progress Reports

Health Impact Part 1

Health, Environment, and Social Indicators to Demonstrate Disparities and Intervention Targets for Bayview Hunters Point/Southeast San Francisco

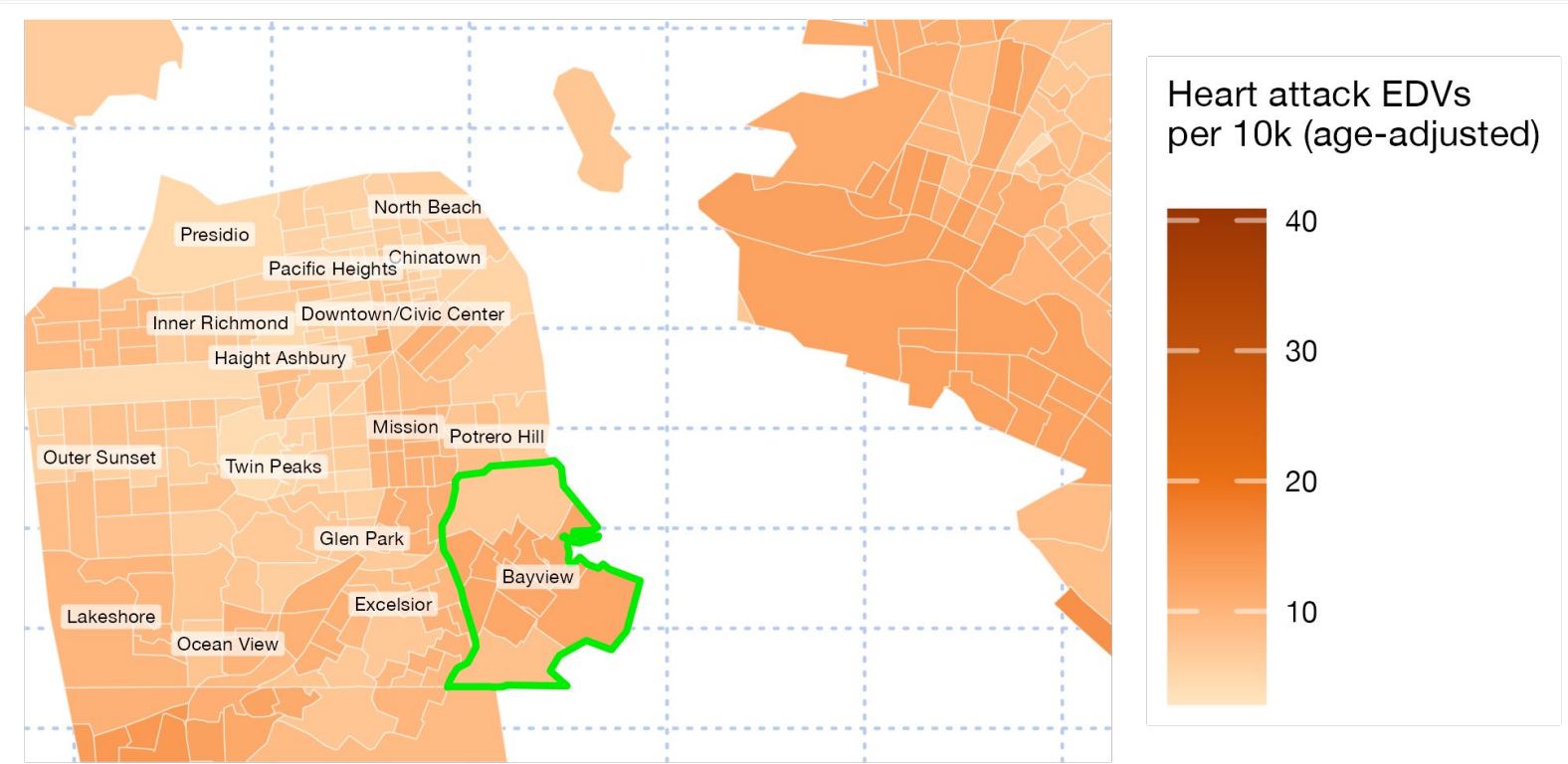
Neeta Thakur (UCSF)

October 15, 2024 BVHP/ SE SF AB 617 CSC Meeting

Table of Contents

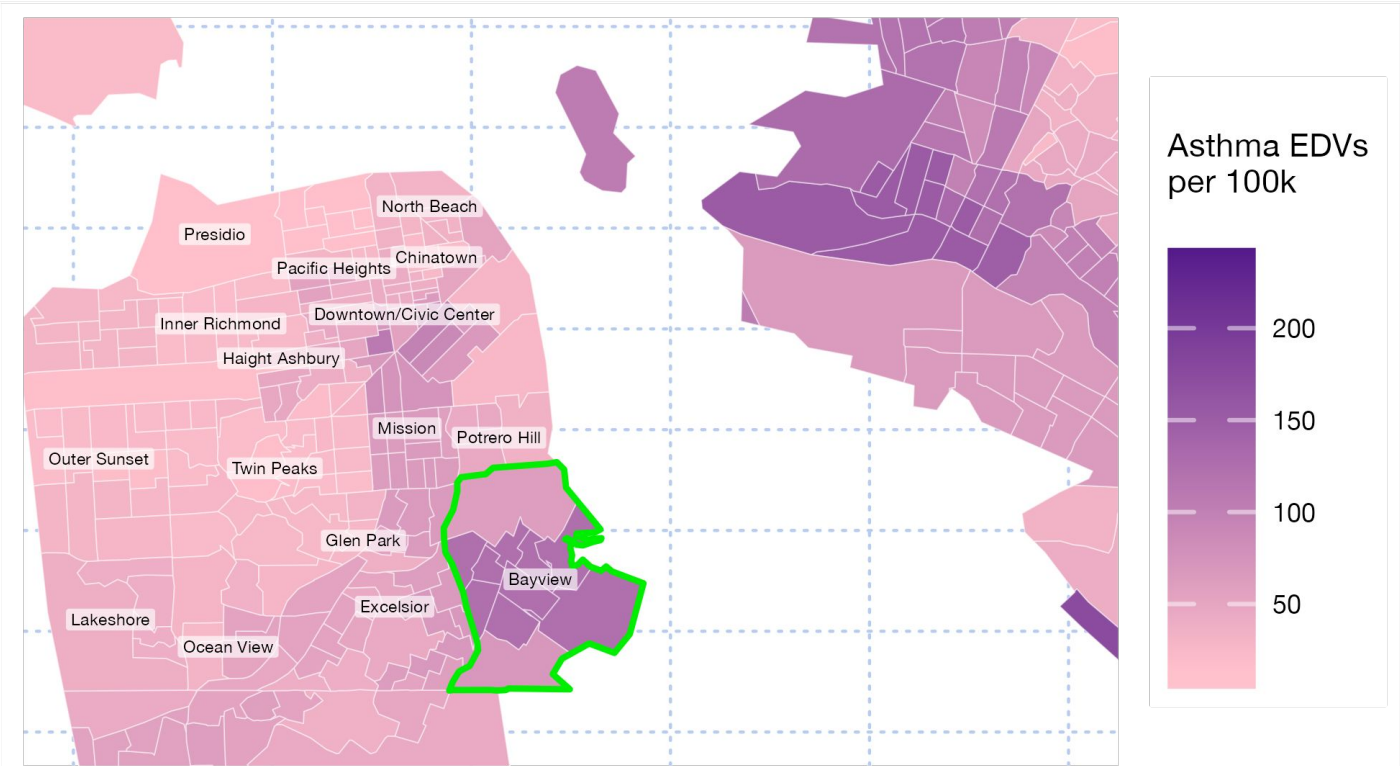
1. Health disparities across San Francisco: Heart Disease

Neighborhoods such as Bayview/Hunters Point, the Mission, and Ocean View/Ingleside has **elevated incidence of heart attack ED visits** compared to other San Francisco neighborhoods. (CalEnviroScreen 4.0)



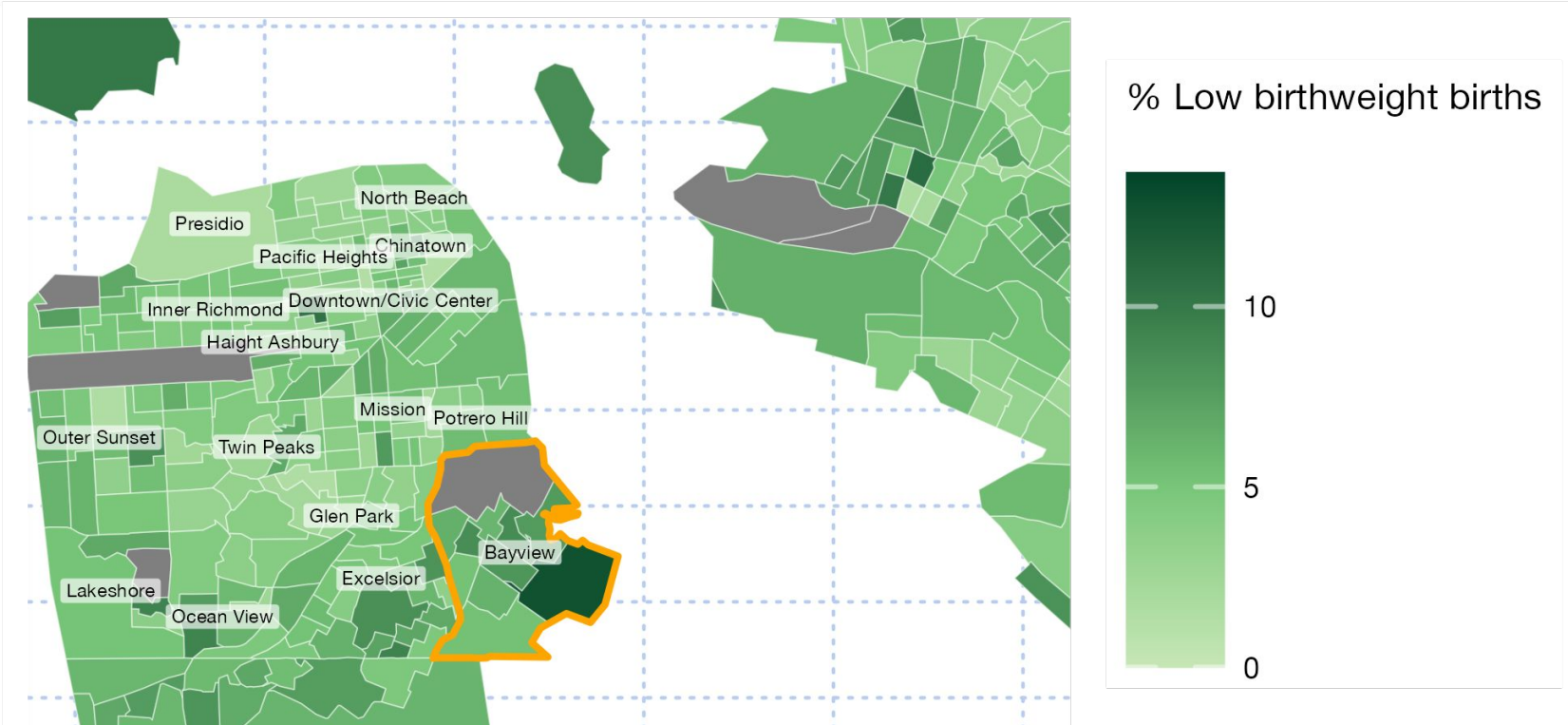
1. Health disparities across San Francisco: Asthma

Bayview/Hunters Point has **elevated incidence of asthma-related ED visits** compared to San Francisco at large. (CalEnviroScreen 4.0)



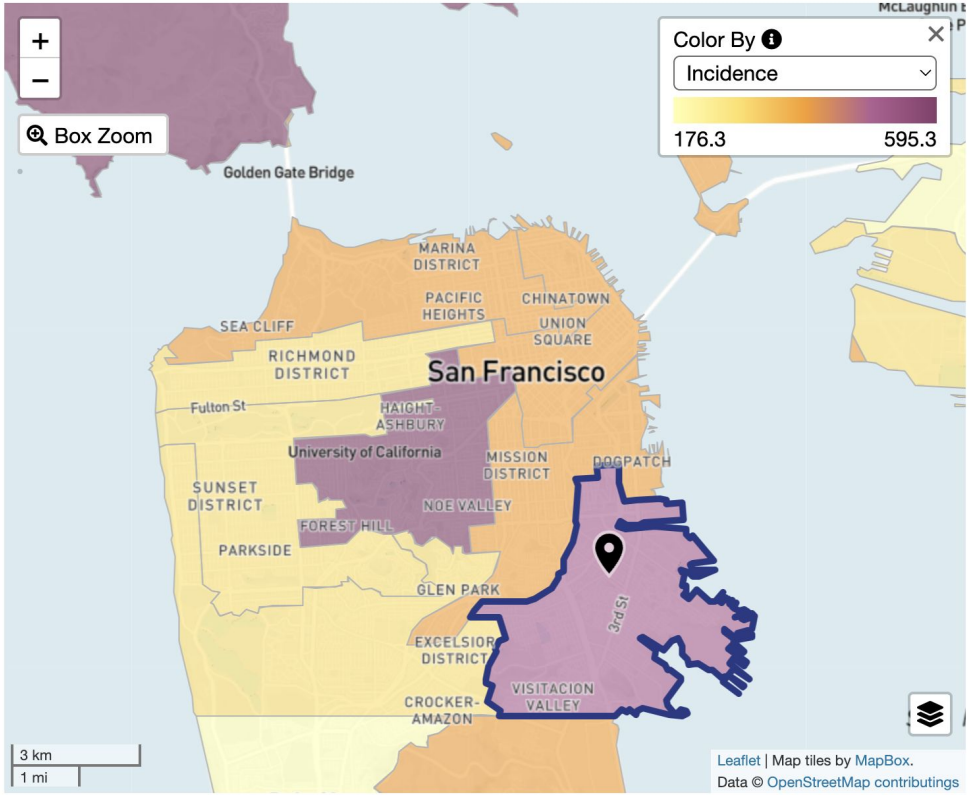
1. Health disparities across San Francisco: low birthweight

Bayview/Hunters Point and Excelsior has a higher proportion of low birthweight births compared to other San Francisco neighborhoods. (CalEnviroScreen 4.0)

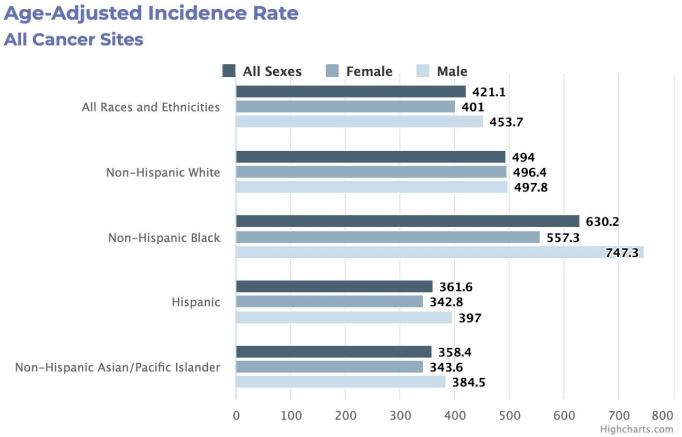


1. Health disparities across San Francisco: cancer

California Health Maps (2012-2021)



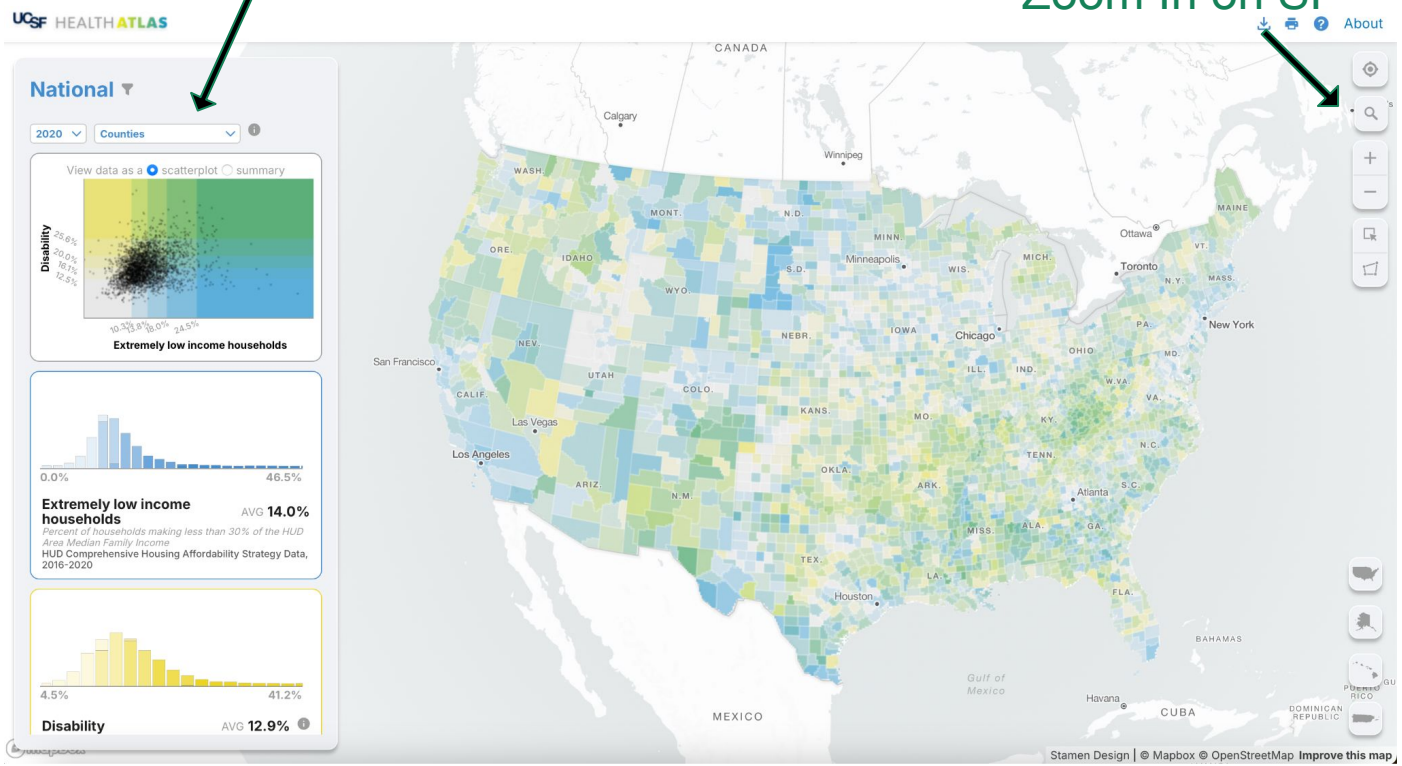
Cancer Statistics	Selected Area	Statewide
Cases	4,082	1,725,549
Age-Adjusted Incidence Rate (95% LCI, 95% UCI)	421.1 (408.0, 434.3)	406.5 (405.8, 407.1)



2. UCSF Health Atlas

Change to Census Tract

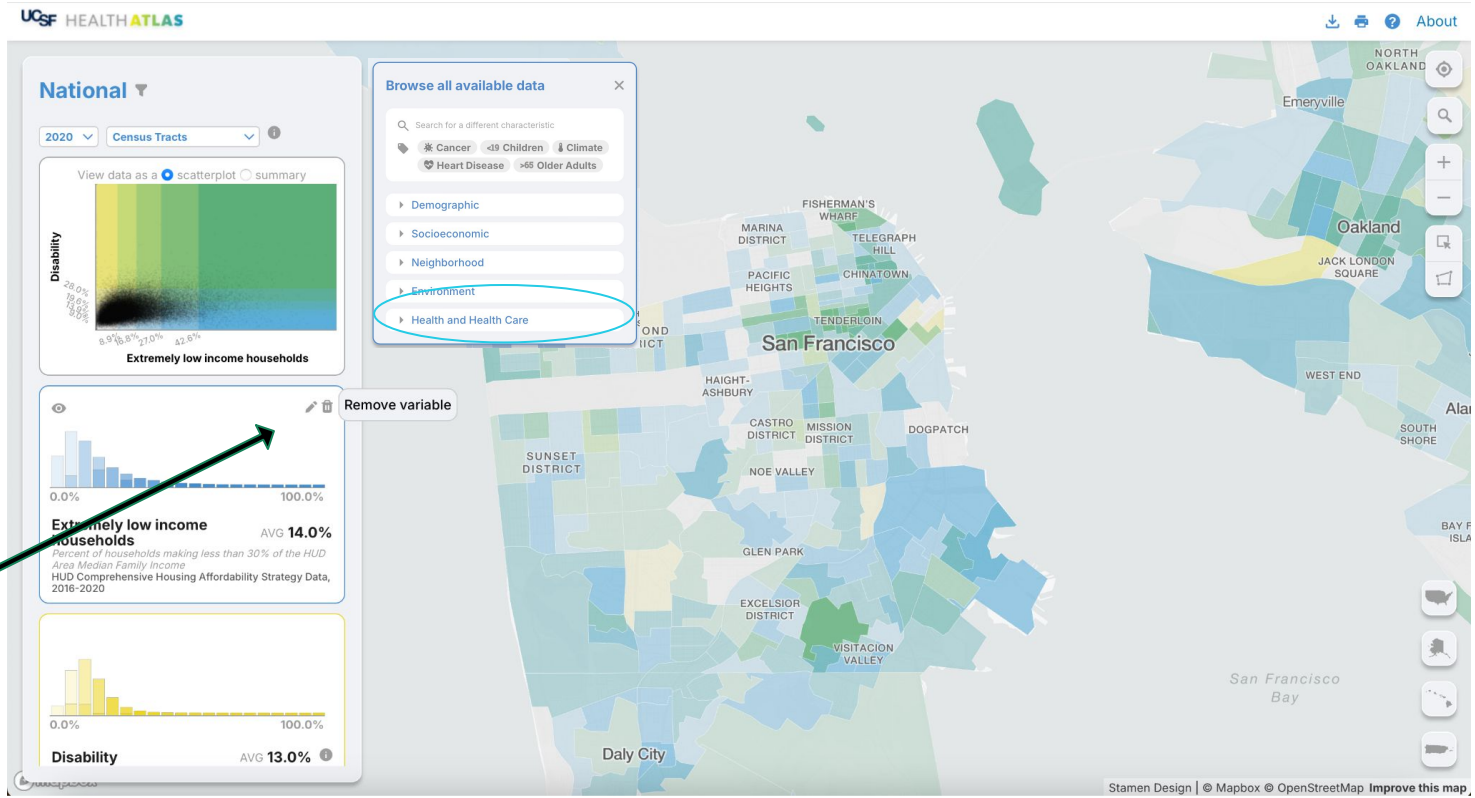
Zoom In on SF



See handout for other data resources.

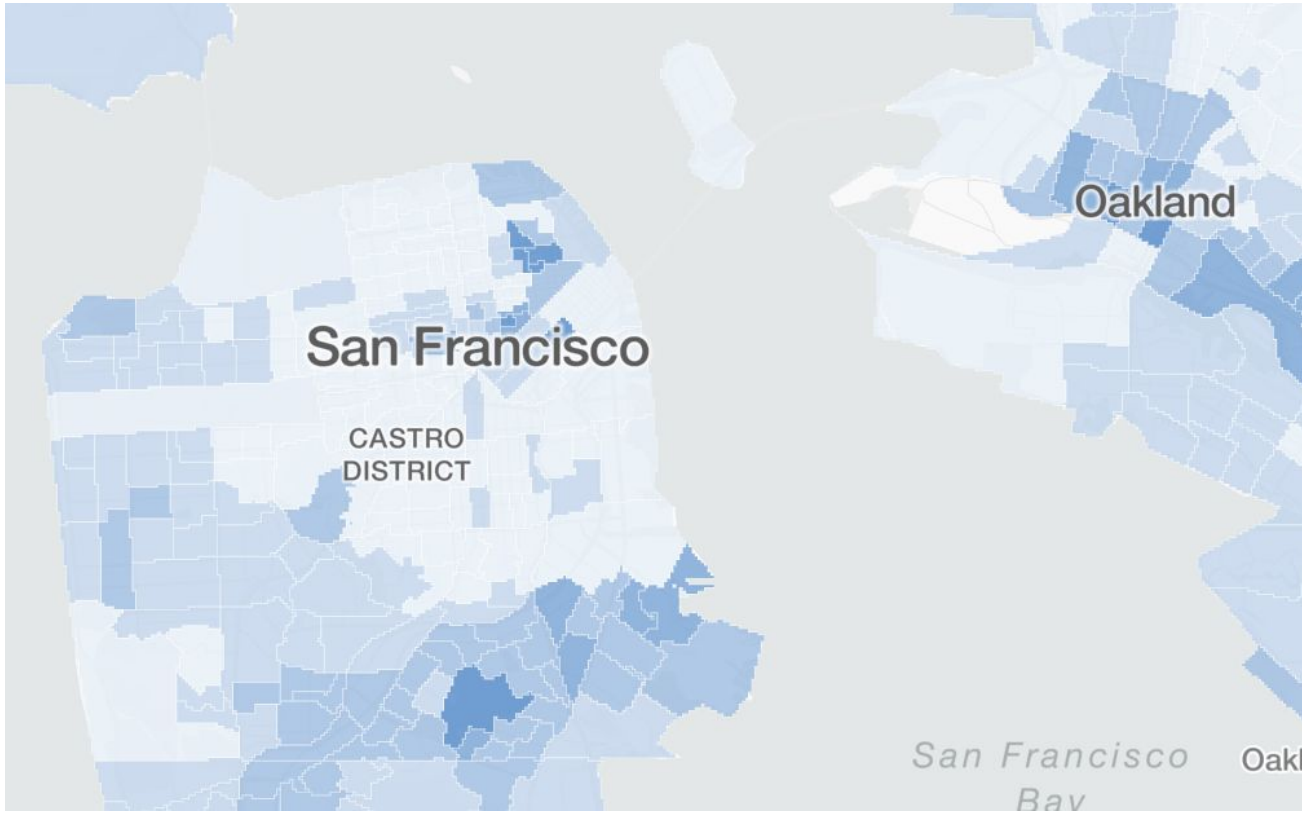
2. UCSF Health Atlas

Remove the variables and add new ones.

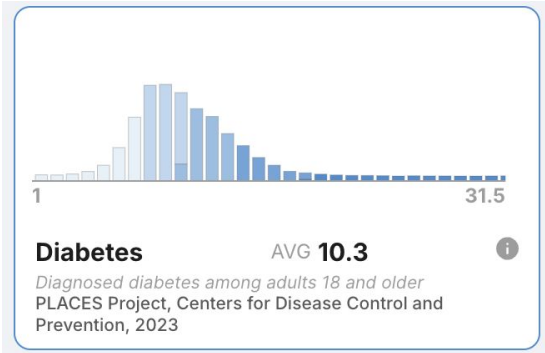


UCSF Health Atlas

Diabetes across San Francisco (2010 census)

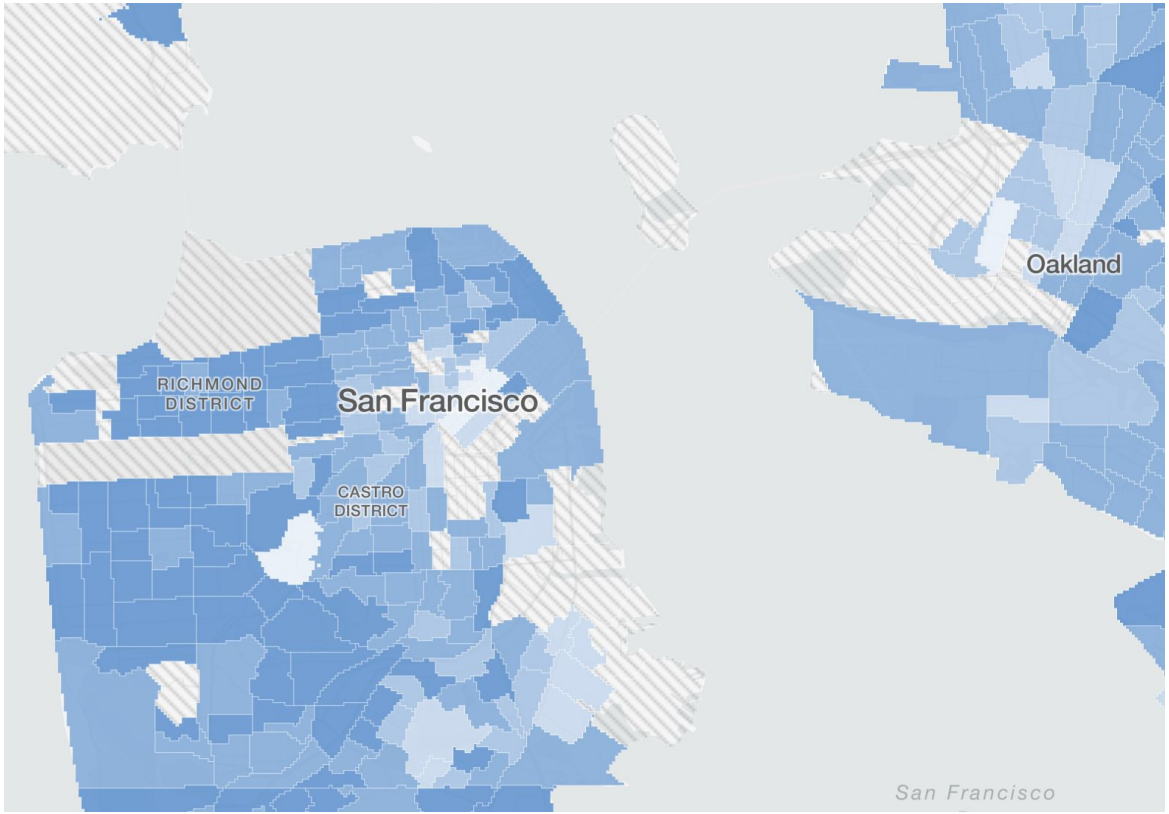


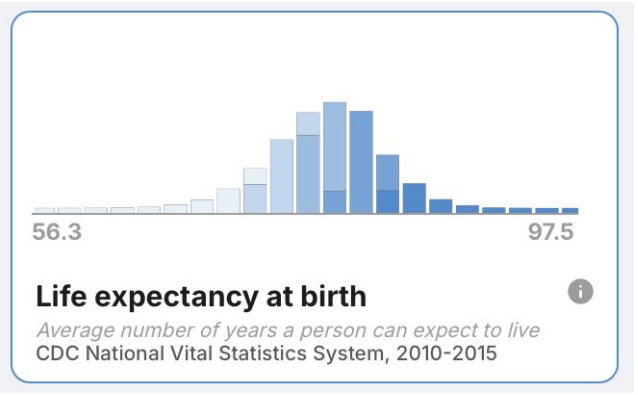
Shows you the distribution and Data Source

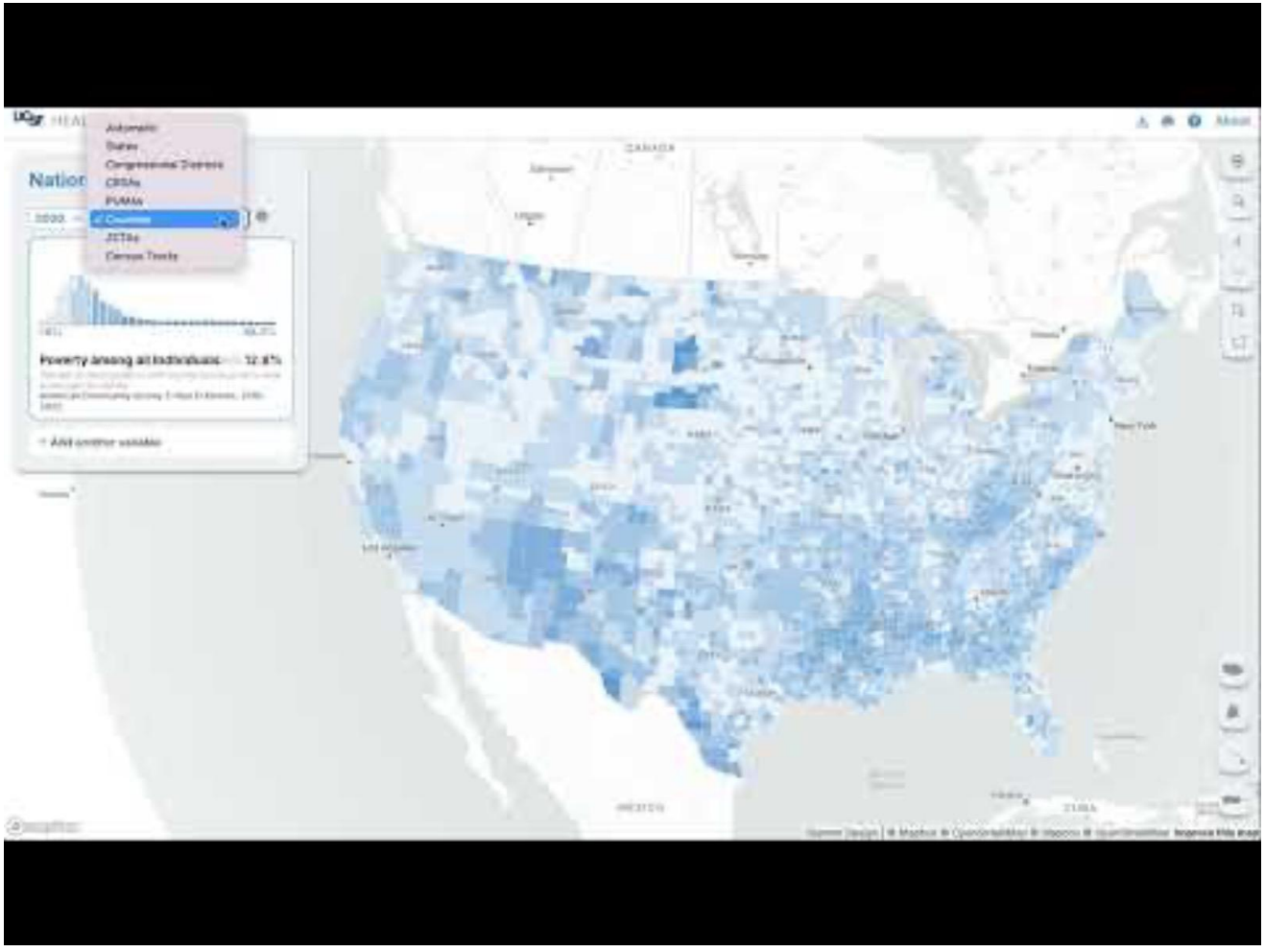


UCSF Health Atlas

Life Expectancy across San Francisco (2010 Census)



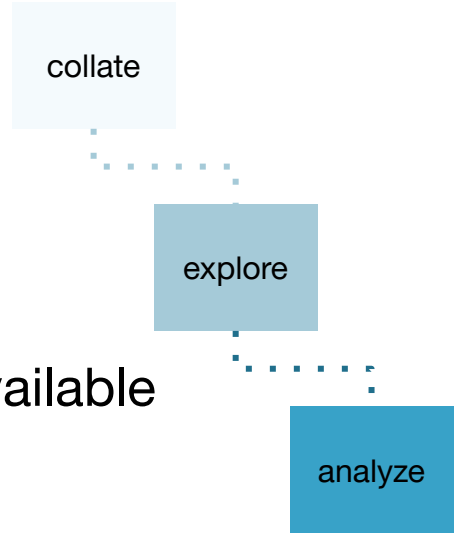




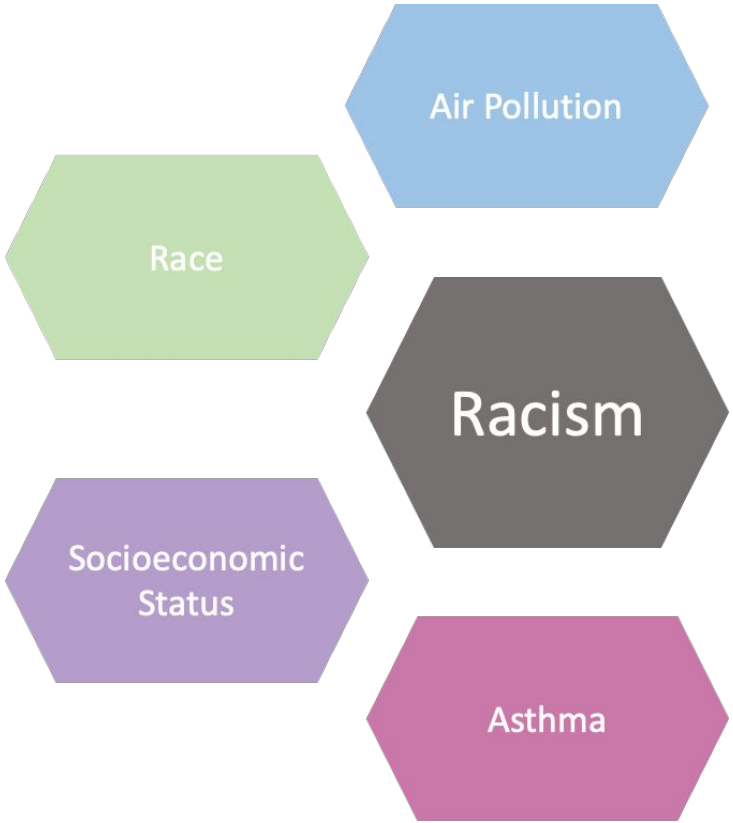
https://youtu.be/kCEeNqlsZ9s

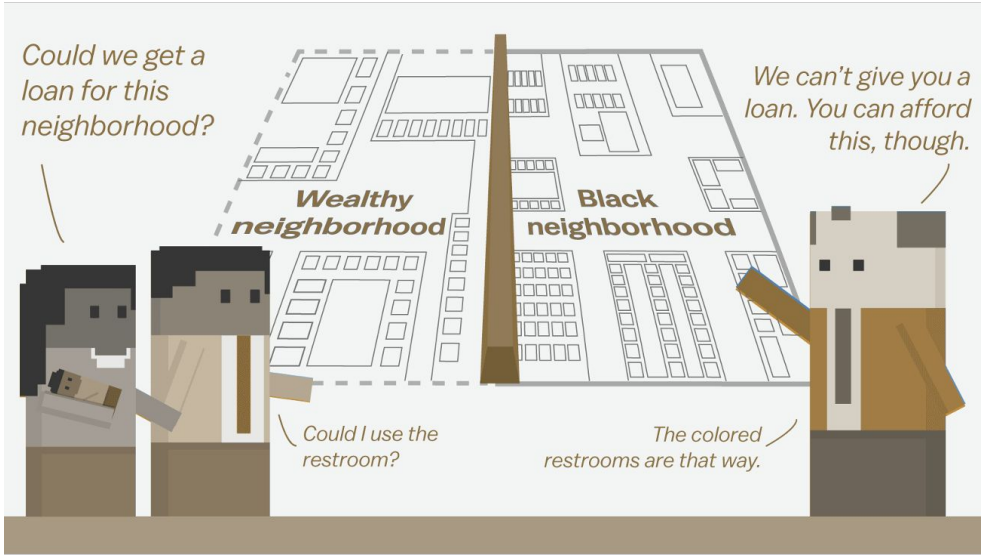
3. Using these metrics/datasets

- Summarize characteristic across different areas
- Visualize spatial patterns, clusters, disparities
- Explore questions and generate hypothesis
- Conduct analyses across areas
- Augment analyses where individual-level data is available
- Resource planning/coordination



4. **Case Example:** Asthma and Redlining





Data sources

Asthma Emergency Room Visits

CalEnvironScreen3.0, average visit rate (2011-2013)

Population Demographics

American Community Survey (Race and Poverty)

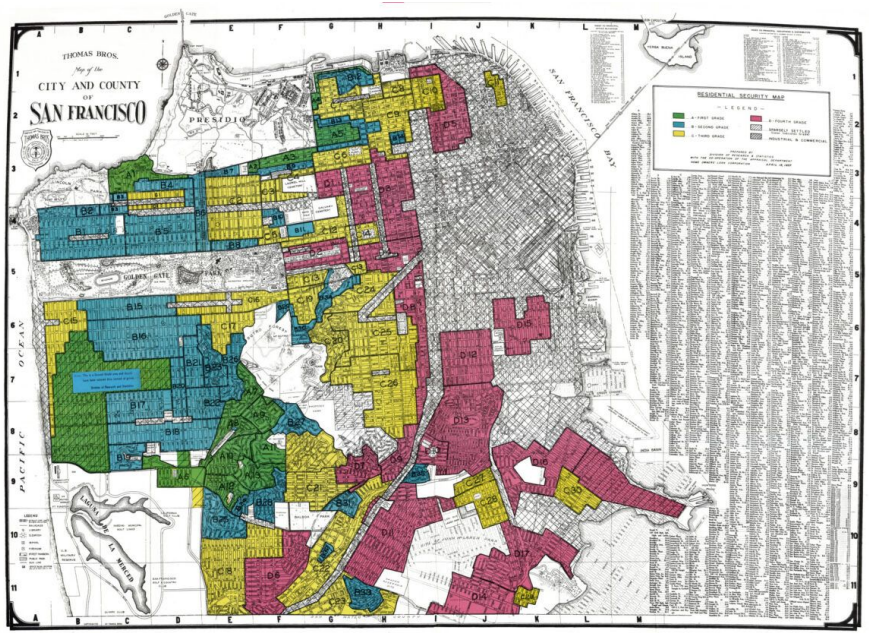
Diesel Pollution

CalEnvironScreen3.0, mean annual Diesel Particulate Matter

HOLC Security Maps (Redlining)

Mapping Inequality Project

Redlining: Home Owners Loan Corporation Security Maps



- Used to define foreclosure risk
- Codified racist practices
- Grading (A, B, C, D/redlined)
  - Race and immigrant status used to in the determination of risk

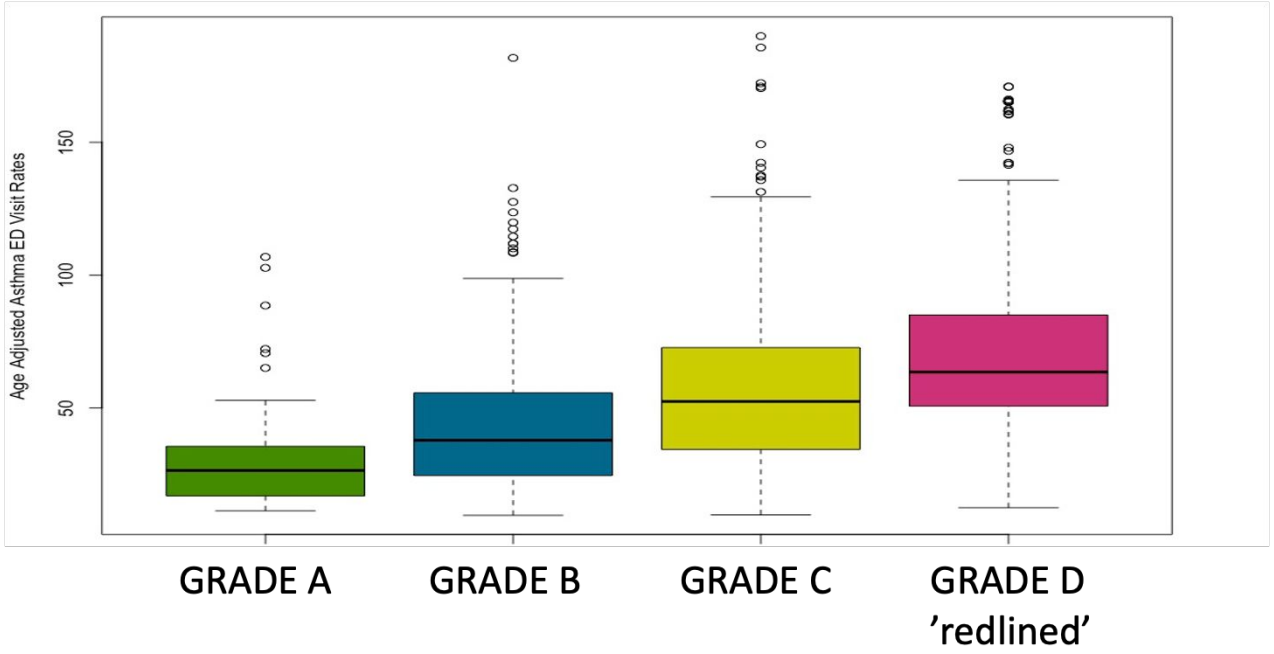
Socio-demographic and air pollutant data

Redlined

	Grade A (n=64)	Grade B (n=240)	Grade C (n=714)	Grade D (n=407)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
% Asian	12.2 (12.2)	15.8 (17.4)	14.8 (17.0)	12.9 (14.9)
% Hispanic*	10.9 (8.8)	27.7 (27.4)	46.8 (28.1)	55.5 (30)
% Non-Hispanic Black*	6.2 (16.1)	8.5 (16.3)	10.1 (12.5)	10.9 (13.7)
% Non-Hispanic White*	67.1 (22.6)	44.7 (28.5)	25.7 (26.5)	18.3 (21.9)
% Other*	3.5 (1.0)	3.1 (1.4)	2.4 (1.5)	2.2 (1.6)
% Poverty[1*]	15.6 (9.4)	29.8 (17.2)	47.6 (19.8)	51.9 (19.9)
Mean $PM_{2.5}$*	11.1 (1.6)	11.0 (1.6)	11.5 (1.4)	11.4 (1.6)
Mean Diesel PM[2*]	22.6 (14.3)	27.9 (16.3)	29.7 (15.9)	39.7 (23.5)

Nardone Lancet PH 2020

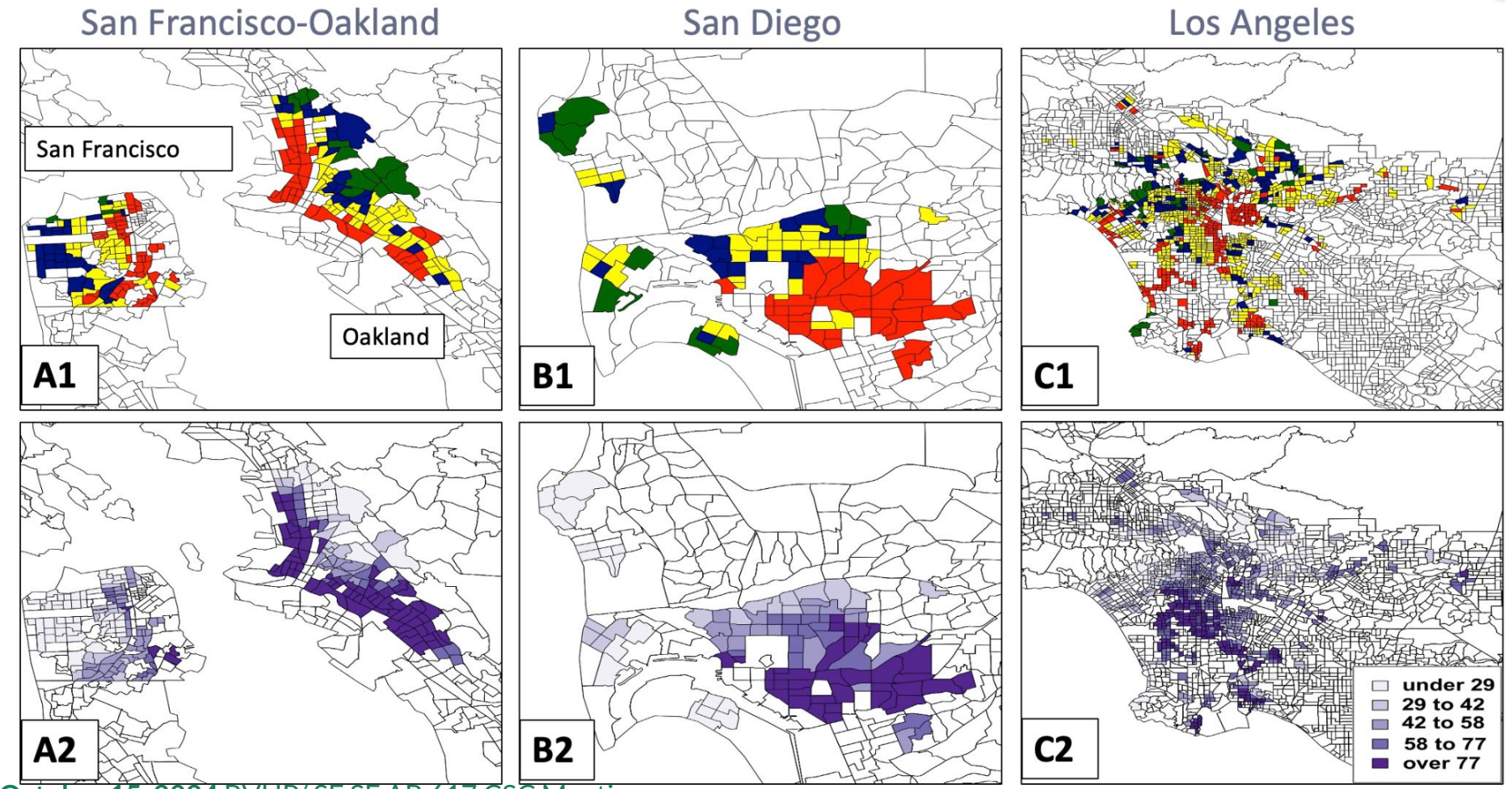
Asthma ED Visits per 10,000 persons by HOLC Risk Grade



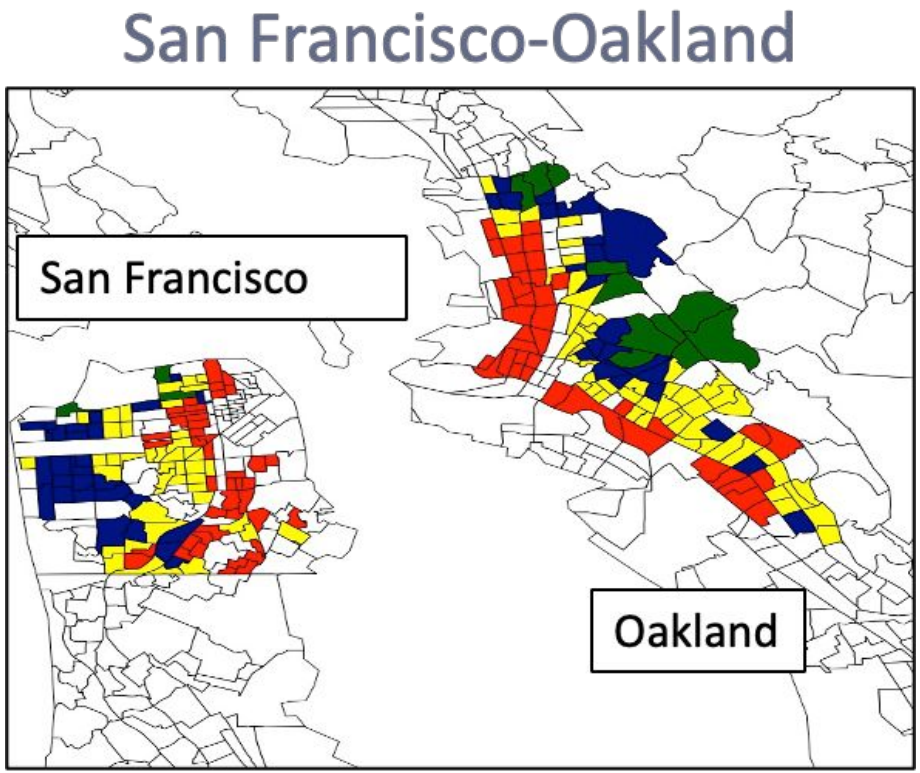
2.4x the asthma ED visit rate in previously redlined census tracts (A vs. D)

(p-trend <0.0001)

Nardone Lancet PH 2020


San Francisco-Oakland
San Diego
Los Angeles
San Francisco
Oakland
A1
B1
C1
A2
B2
C2
under 29
29 to 42
42 to 58
58 to 77
over 77

Zooming in on San Francisco



	Odds of Asthma Related ED Visit (95% CI)	
Grade	San Francisco	Overall
A	Reference	Reference
B	1.23 (0.71, 1.75)	1.14 (1.00, 1.28)
C	1.15 (0.68, 1.62)	1.18 (1.03, 1.33)
D	1.75 (1.01, 2.51)	1.39 (1.21, 1.57)

5. Case Example: Using Data Presented in the CERP Meetings

Asthma Emergency Room Visits

CalEnvironScreen3.0, average visit rate (2011-2013)

Population Demographics

American Community Survey

Fine Particulate Matter

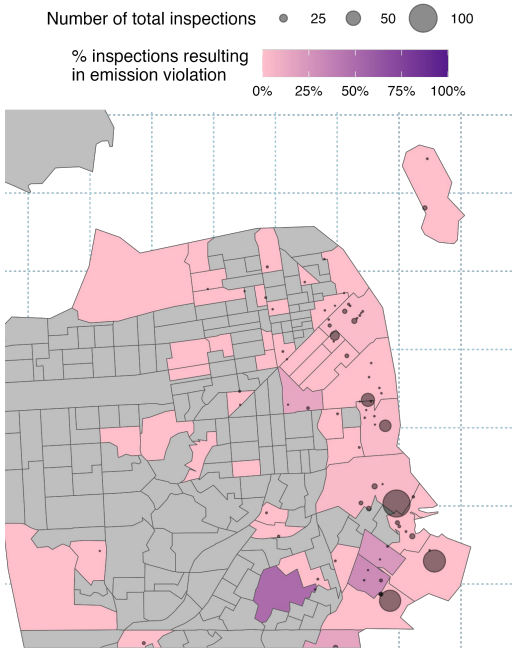
WashU St. Louis, Annual $PM_{2.5}$

Emission Violations

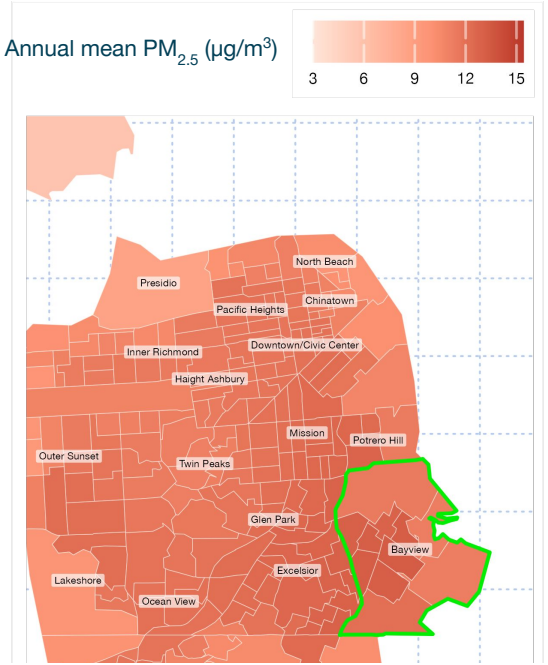
CARB Emission Violations Data

5. Mobile emission violations, $PM_{2.5}$ and asthma ED visits in BVHP

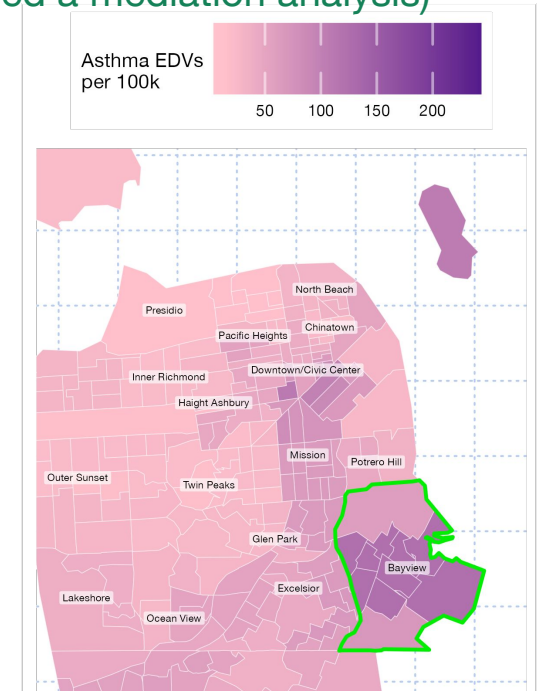
Question: Do heavy duty vehicle (HDV) emission violations lead to increased $PM_{2.5}$, which in turn leads to increased asthma-related ED visits? (what is called a mediation analysis)



CARB Emission Violations



WashU St. Louis

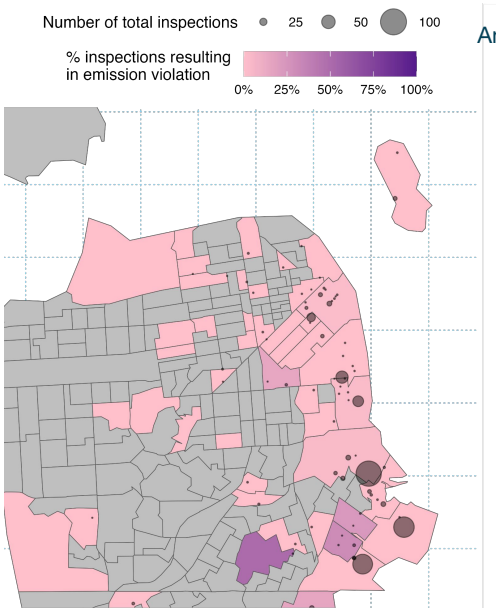


CalEnviroScreen 4.0

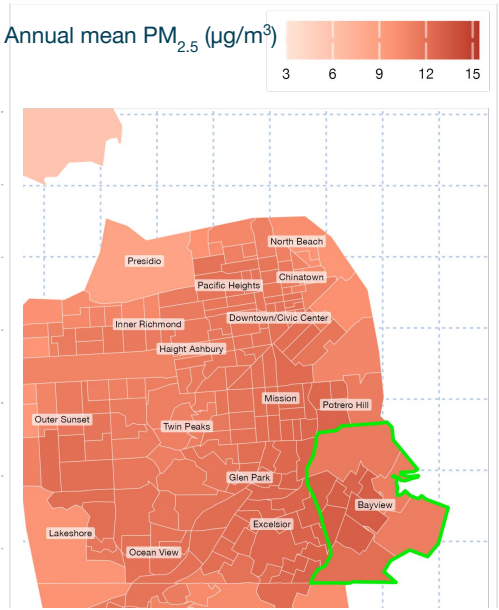
5. Mobile emission violations, $PM_{2.5}$ and asthma ED visits in BVHP

Question: Do heavy duty vehicle (HDV) emission violations lead to increased $PM_{2.5}$, which in turn leads to increased asthma-related ED visits?

1) Model: Are emission violations associated with asthma ED visits? **Yes**



CARB Emission Violations



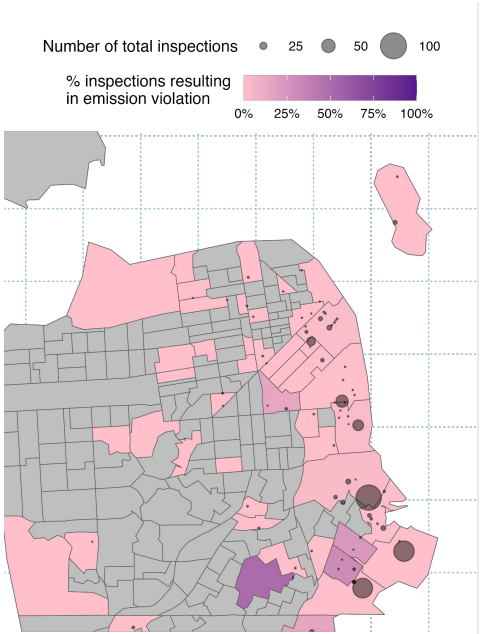
WashU St. Louis

5. Mobile emission violations, $PM_{2.5}$ and asthma ED visits in BVHP

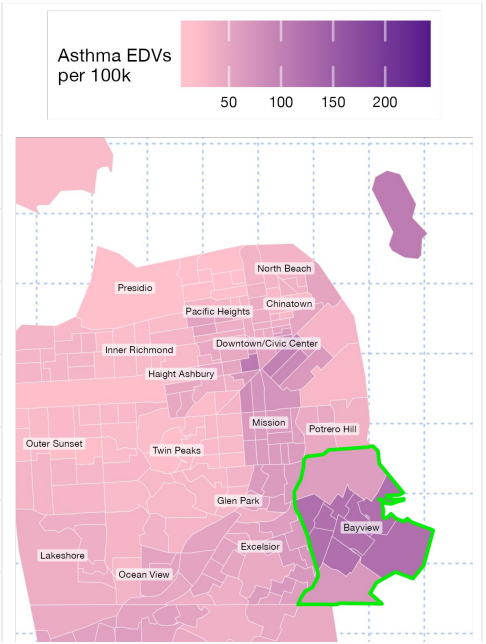
Question: Do heavy duty vehicle (HDV) emission violations lead to increased $PM_{2.5}$, which in turn leads to increased asthma-related ED visits? (what is called a mediation analysis)

1) Model: Are emission violations associated with asthma ED visits? **Yes**

2) Model: Are emission violations associated with $PM_{2.5}$? **Yes**



CARB Emission Violations

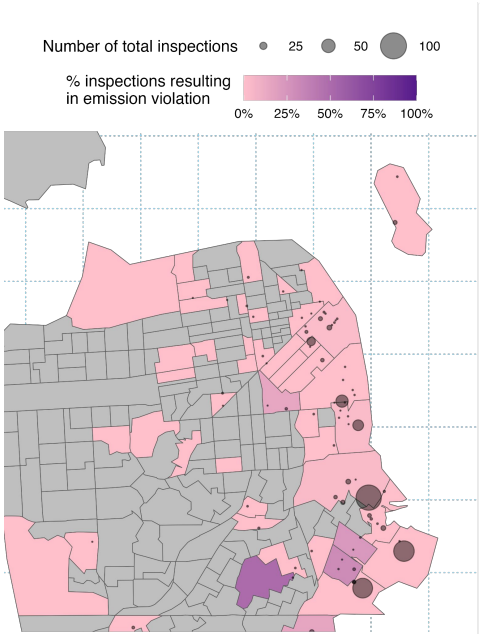


CalEnviroScreen 4.0

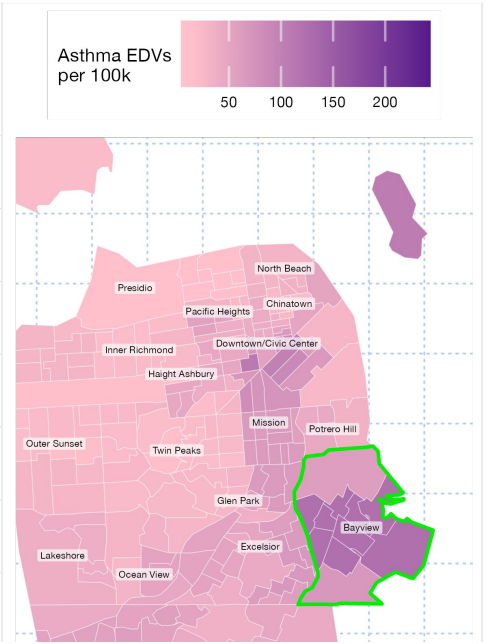
5. Mobile emission violations, $PM_{2.5}$ and asthma ED visits in BVHP

Question: Do heavy duty vehicle (HDV) emission violations lead to increased $PM_{2.5}$, which in turn leads to increased asthma-related ED visits?

1) Model: Are emission violations associated with asthma ED visits? **Yes**
2) Model: Are emission violations associated with $PM_{2.5}$? **Yes**
3) Model: Does $PM_{2.5}$ account for some of the association between emission violations and asthma? **Yes**
4) Quantify how much $PM_{2.5}$ mediates between emission violations and asthma



CARB Emission Violations



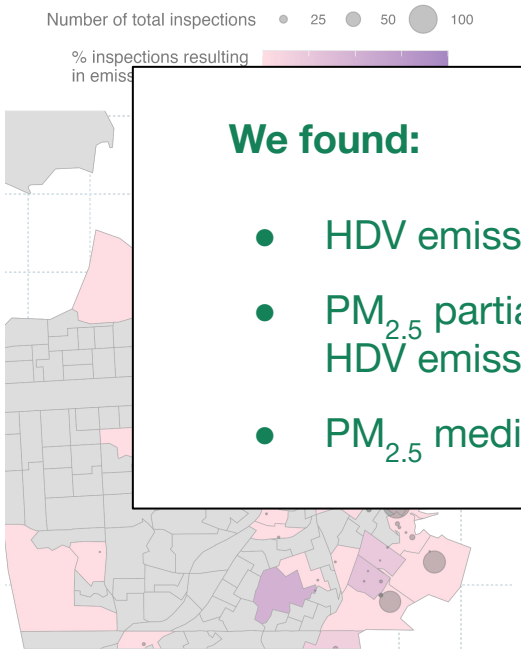
CalEnviroScreen 4.0

5. Mobile emission violations, $PM_{2.5}$ and asthma ED visits in BVHP

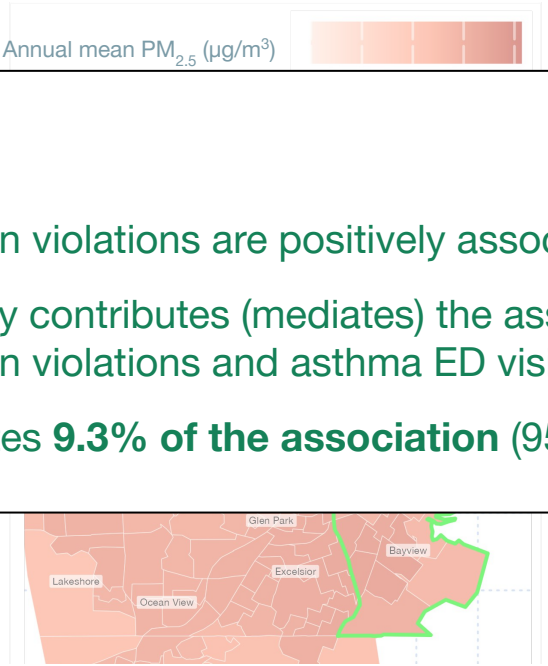
Question: Do heavy duty vehicle (HDV) emission violations lead to increased $PM_{2.5}$, which in turn leads to increased asthma-related ED visits?

We found:

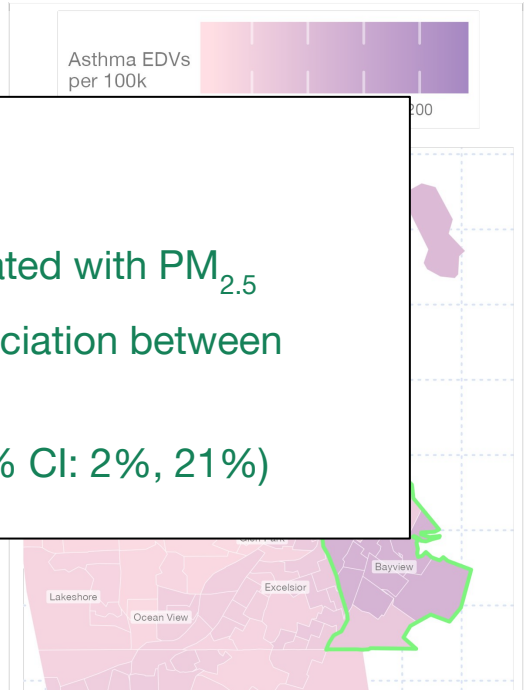
- HDV emission violations are positively associated with $PM_{2.5}$
- $PM_{2.5}$ partially contributes (mediates) the association between HDV emission violations and asthma ED visits
- $PM_{2.5}$ mediates **9.3% of the association** (95% CI: 2%, 21%)



CARB Emission Violations



WashU St. Louis



CalEnviroScreen 4.0

6. Using data to identify solutions for CERP planning

Asthma Emergency Room Visits

CalEnvironScreen3.0, average visit rate (2011-2013)

Population Demographics

American Community Survey

Fine Particulate Matter

WashU St. Louis, Annual $PM_{2.5}$

Trees

USDA Forest Service Tree Canopy

6. Tree canopy cover and Asthma ED visits due to $PM_{2.5}$

What is the relationship between **tree canopy cover** and **asthma ED visits (EDVs) due to $PM_{2.5}$ exposure**? What are the **potential benefits of increasing tree canopy cover**?

We can use these data for a "simulation study":

STEPS

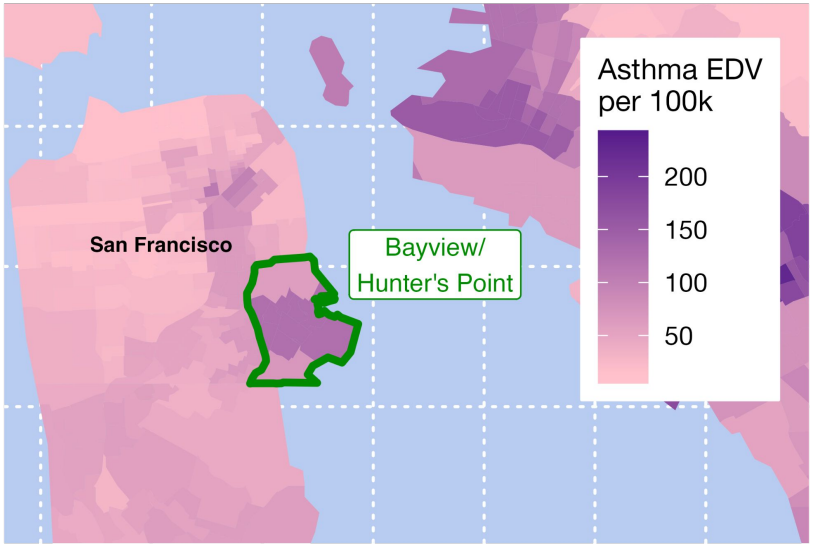
1) Model the total % of asthma EDVs that are due to $PM_{2.5}$
   - Take the total observed EDVs and subtract the number of predicted EDVs if the highest $PM_{2.5}$ never went above the current EPA regulatory limit (8 $\mu g/m^3$)

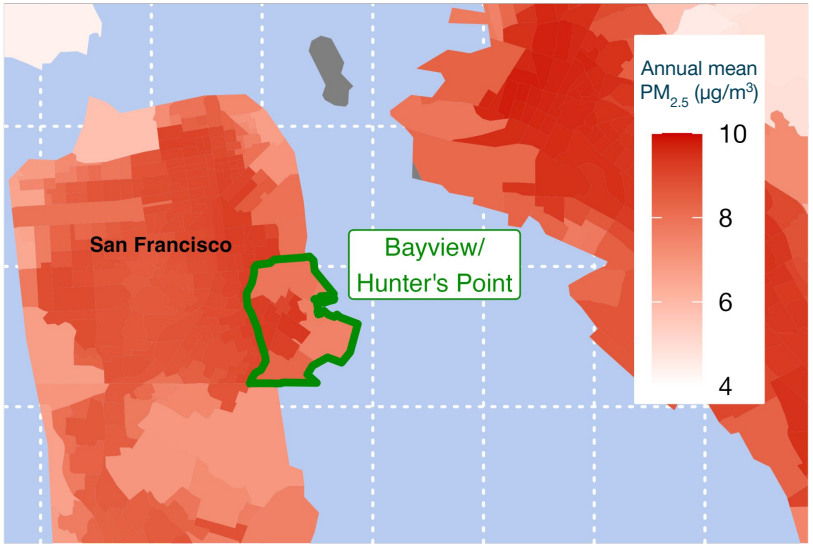
2) Estimate the relationship between tree canopy cover and asthma EDVs due to $PM_{2.5}$

3) Simulate changes in EDVs due to $PM_{2.5}$ if we were to increase tree canopy covers under different scenarios (e.g., lots of trees, trees in certain areas, etc.)

6. Tree canopy cover and asthma due to $PM_{2.5}$

1) Model the total % of asthma EDVs that are due to $PM_{2.5}$

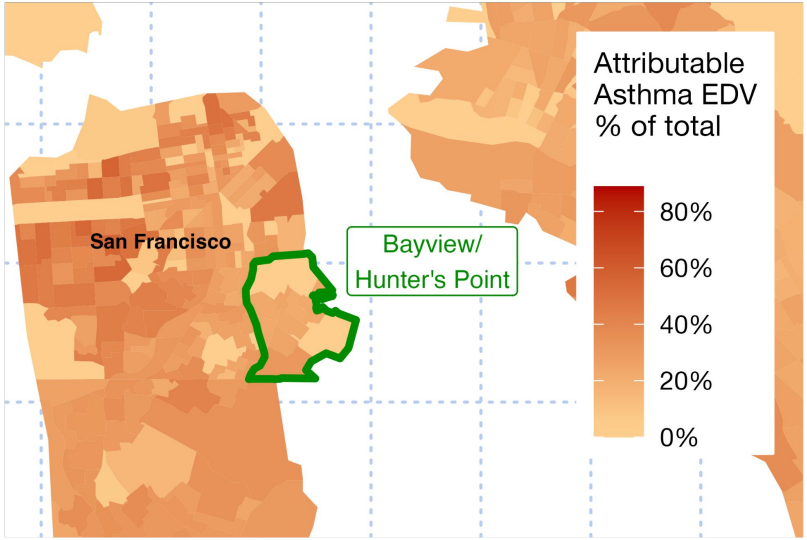


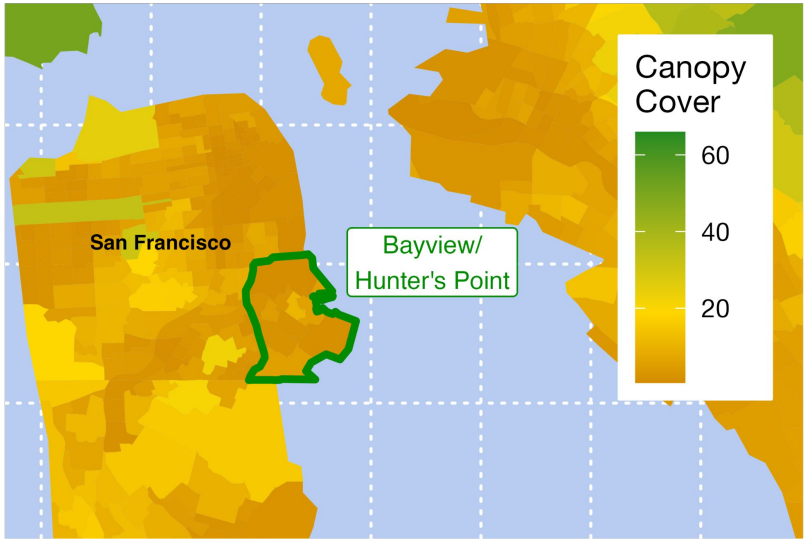


23.5% of observed asthma EDVs were due to $PM_{2.5}$ exposure.

6. Tree canopy cover and $PM_{2.5}$-attributable asthma

2) Estimate the relationship between tree canopy cover and asthma EDVs due to $PM_{2.5}$





A 1% increase of total tree canopy cover was associated with a 1.7% decrease in asthma EDVs due to $PM_{2.5}$.

6. Tree canopy cover and $PM_{2.5}$-attributable asthma

3) Simulate changes in EDVs due to $PM_{2.5}$ if we were to increase tree canopy covers under different scenarios (e.g., lots of trees, trees in certain areas, etc.)

Our scenarios of interest:

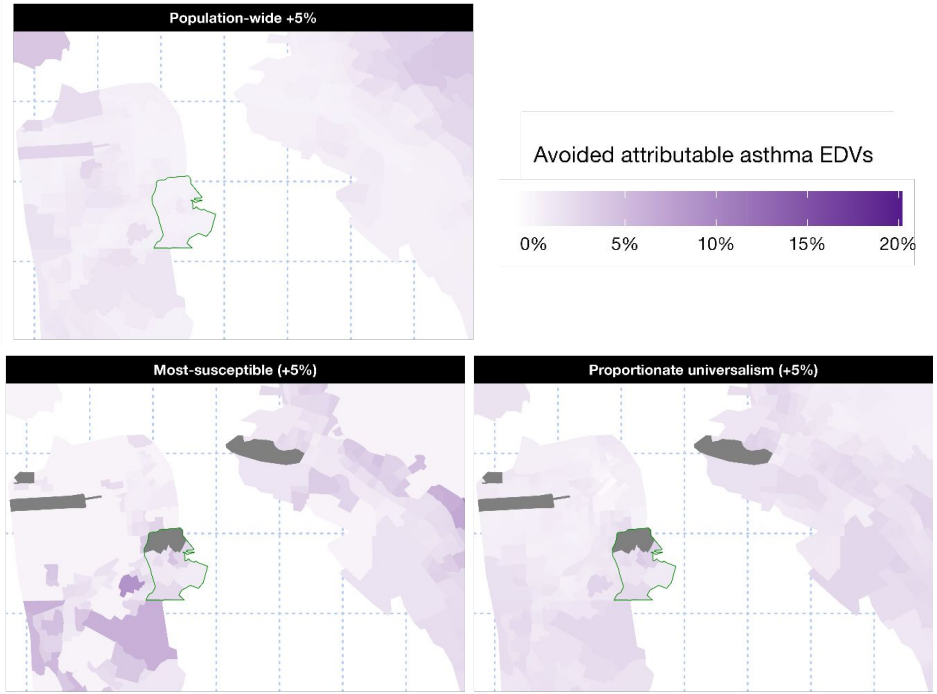
- **Population-wide** increases of canopy cover by 5%.
- **Most susceptible** where only tracts with CalEnviroScreen scores at or higher than 60th percentile receive increases in greenness.
- **Proportionate universalism** where all tracts receive greening; level of intervention scales with tract-level CalEnviroScreen scores.

Most susceptible and universal approaches are scaled up to a total 5% increase in overall tree canopy cover for comparability.

6. Tree canopy cover and $PM_{2.5}$-attributable asthma

3) Simulate changes in EDVs due to $PM_{2.5}$ if we were to increase tree canopy covers under different scenarios (e.g., lots of trees, trees in certain areas, etc.)

Intervention Style	% reduction in Asthma EDVs	Theil index (lower is more equal)
Population-wide (+5%)	1.4%	0.163
Most-susceptible (+5%)	**2.8%**	**0.154**
Proportionate universalism (+5%)	2.6%	0.157



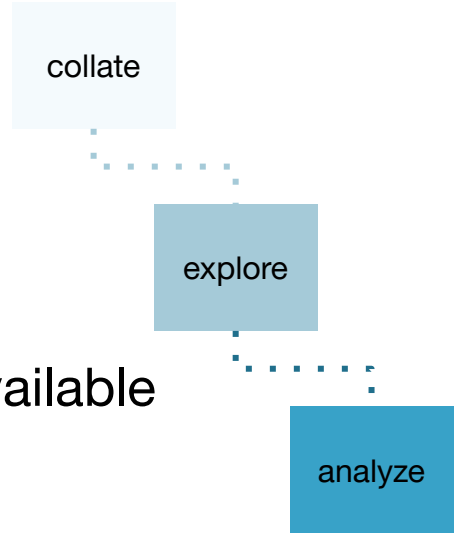
6. Tree canopy cover and $PM_{2.5}$-attributable asthma

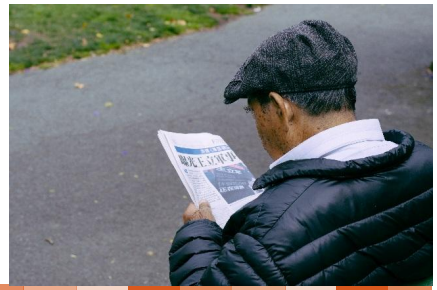
We found:

- Tree canopy cover is associated with less EDV due to $PM_{2.5}$.
- Planting trees in neighborhoods that are the *most divested* resulted in a higher reduction in asthma EDVs for the same economic cost and greater reduction in inequity.
- Other potential co-benefits could exist and warrants further exploration (decreased urban heat island effect, increased mental health and physical activity)

Use these data!!!

- Summarize characteristic across different areas
- Visualize spatial patterns, clusters, disparities
- Explore questions and generate hypothesis
- Conduct analyses across areas
- Augment analyses where individual-level data is available
- Resource planning/coordination





San Francisco Department of Public Health Overview of Air Quality and Health Services

Matt Wolff, Climate Health Program
Matt.Wolff@sfdph.org
Jen Callewaert, Environmental Health Branch
Jennifer.Callewaert@sfdph.org

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

1. **Background: San Francisco Codes and Commissions**
2. **Department of Public Health**
    - Overview
    - Behavioral Health
    - Health Network
3. **Population Health Division**
    - **Environmental Health**
        - Introduction and Overview
        - Article 38
    - **Data Analysis and Epidemiology**
    - **Emergency Preparedness and Resilience**

Background

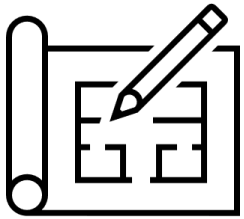
The rules that regulate or address air quality are administered and enforced by many different City Departments.

Purpose

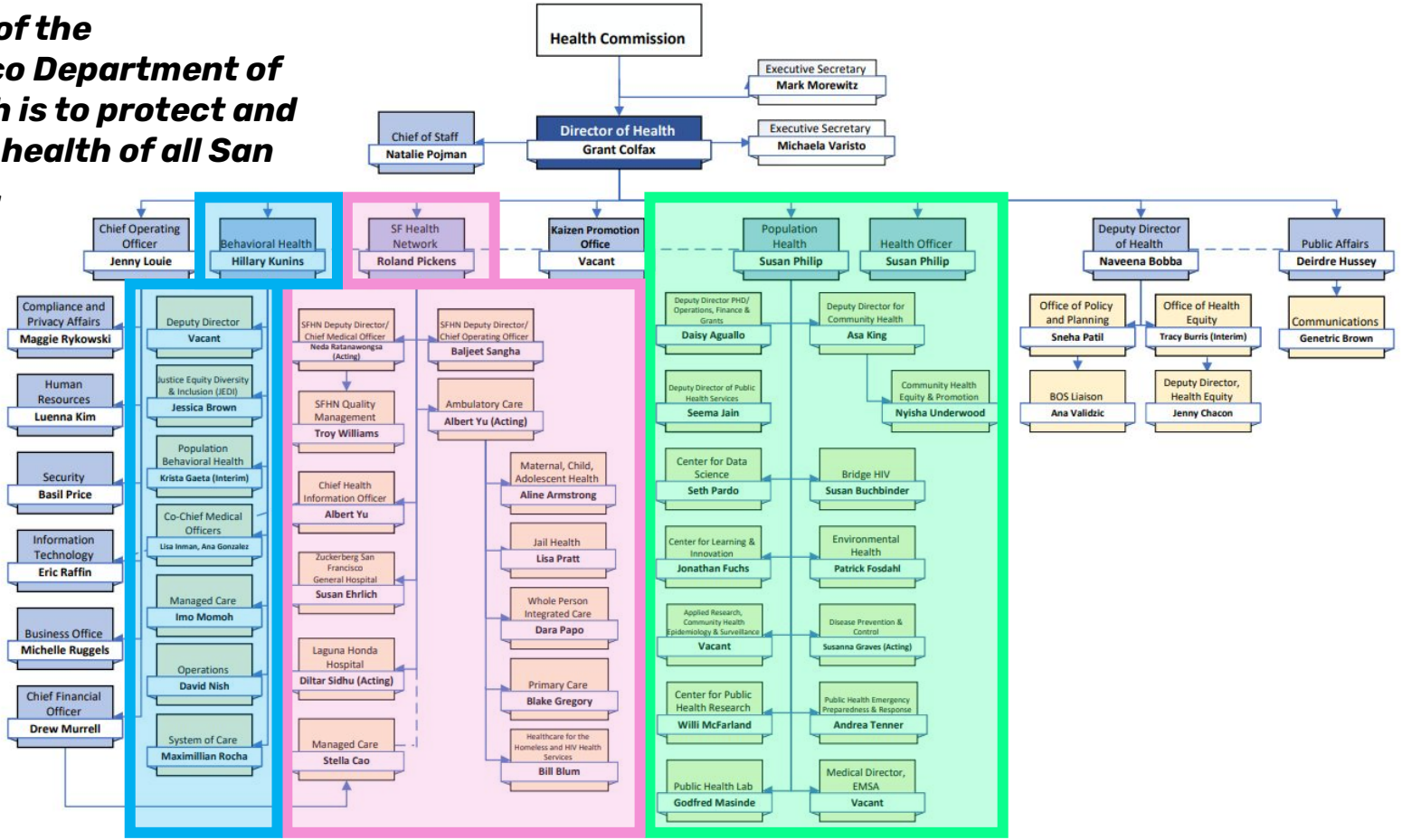
The purpose of the **CERP-Relevant Codes and Commissions** hand out is to consolidate these policies so the Community Steering Committee can better access the tools necessary to craft a Community Emissions Reduction Plan that targets recommendations to the appropriate Department and code.

Document Structure

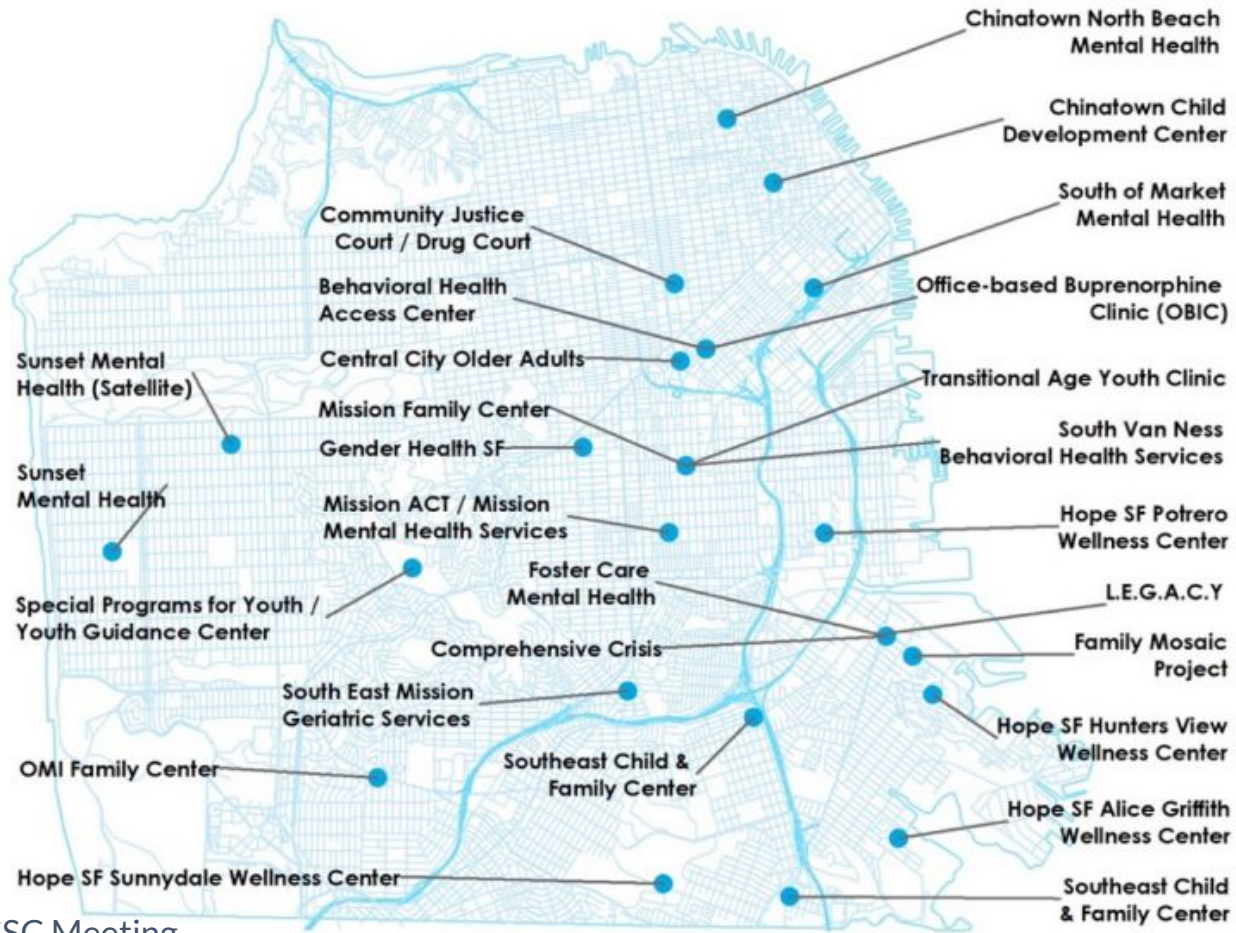
1. Codes and Commissions Matrix
2. How to Change San Francisco Codes
3. Codes Relevant to CERP
    - Indoor Air Quality Codes for New Construction
    - Indoor Air Quality Codes for Existing Buildings
    - Construction and Dust Codes
    - Illegal Dumping Codes



The mission of the San Francisco Department of Public Health is to protect and promote the health of all San Franciscans.



SPECIALTY BEHAVIORAL HEALTH SERVICES SITES[11]



PRIMARY CARE SERVICES SITES 10

Zuckerberg San Francisco General Hospital (ZSFG)

The Population Health Division provides expert core public health services for people in the City and County of San Francisco. These services include epidemiology and surveillance, health promotion, disease and injury prevention, disaster preparedness and response, applied research, as well as policy development and implementation.

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

Environmental Health Branch (EHB)

We help San Franciscans live and work safely by making sure our local businesses, restaurants, homes, and air and water sources meet health requirements.

- Food Safety
- Air and Water Quality
- Solid Waste
- Hazardous Materials Management
- Business Health Requirements
- Environmental Cleanup
- Healthy Housing Conditions

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

SF Health Code Article 38

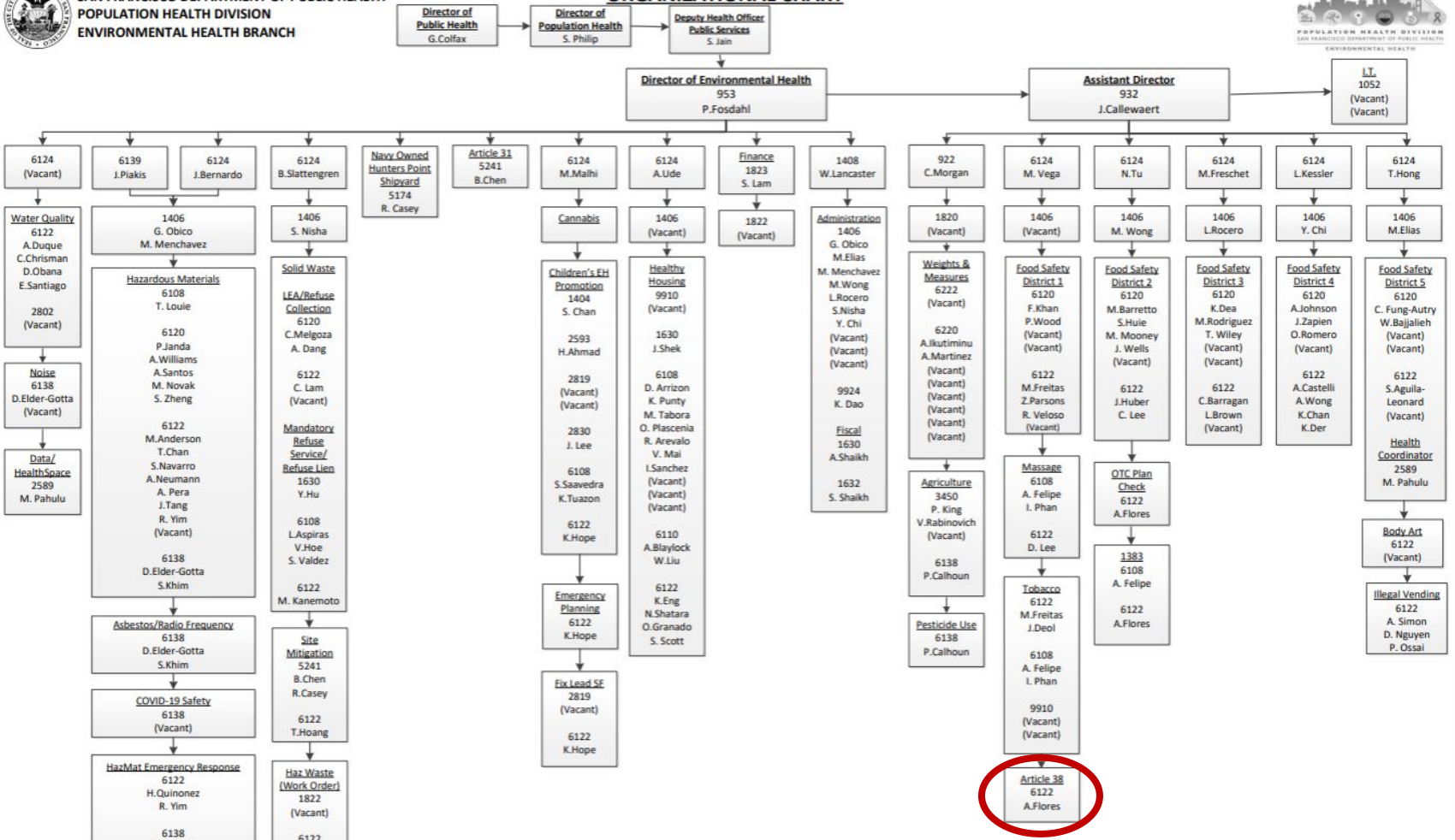
Enhanced Ventilation in Air Pollutant Exposure Zone

- Jen Callewaert, MS, REHS
  SFDPH - Environmental Health Branch

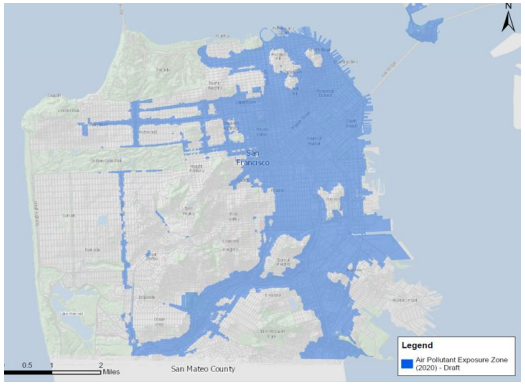
POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH
POPULATION HEALTH DIVISION
ENVIRONMENTAL HEALTH BRANCH

ORGANIZATIONAL CHART



Effective 9/16/24



Overview

- Health Code Article 38 – Background and Objectives
- Air Pollution Exposure Zone
  - Methodology
  - Map Changes

Protecting Public Health through Air Pollution Exposure Zone

- **Health Code Article 38** requires **NEW** buildings that would have sensitive uses (i.e. housing or schools), to include a ventilation system that sufficiently removes fine particulate matter ($PM_{2.5}$) (MERV 13 or equivalent filtration) and provides positive pressure in every unit.

- **Environment Code Chapter 25** requires public works projects within the air pollutant exposure zone to use the cleanest construction equipment available defined by CARB.

- Air Pollutant Exposure Zone is also considered when evaluating projects subject to environmental review under the **California Environmental Quality Act.**

State Guidance:

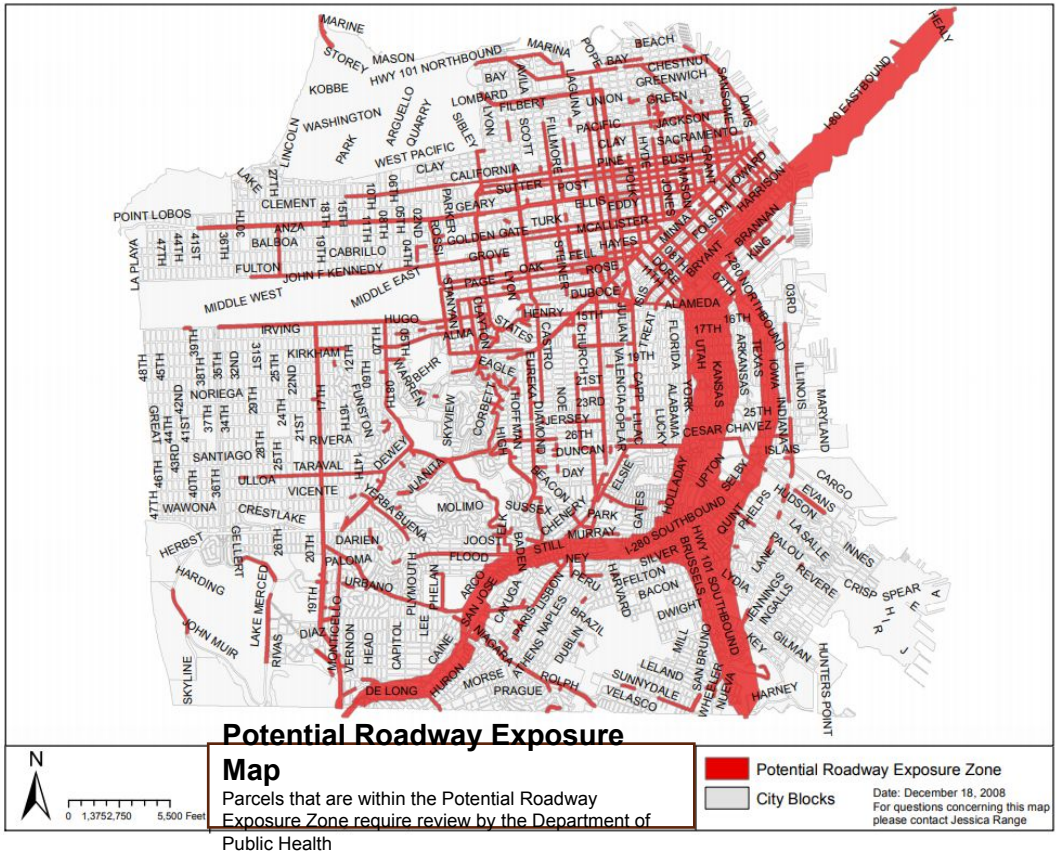
2022 BUILDING ENERGY EFFICIENCY STANDARDS (TITLE 24, PART 6) The California 2022 Building Energy Efficiency Standards (Title 24, Part 6) encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more.

Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 energy code. **The 2022 standards require that all nonresidential, hotel/motel occupancies, single-family residential buildings, and multifamily buildings include mechanical air filtration systems with filters that have a designated efficiency equal to or greater than Minimum Efficiency Reporting Value (MERV) 13. 197,198**

https://www.energy.ca.gov/publications/2022/2022-building-energy-efficiency-standards-residential-and-nonresidential

2008 – San Francisco Health Code Article 38 Signed into Law

- Created enhanced ventilation filtration requirements
- Builder/Project Sponsor required to do air quality model to determine if they need to comply.



Article 38 – 2014 Amendment
Continuous Improvement

Sensitive Uses:

- Residential Unit Threshold
- Childcare and schools
- Adult day care & rehabilitation
- CDPH licensed Health Care

Facilities:

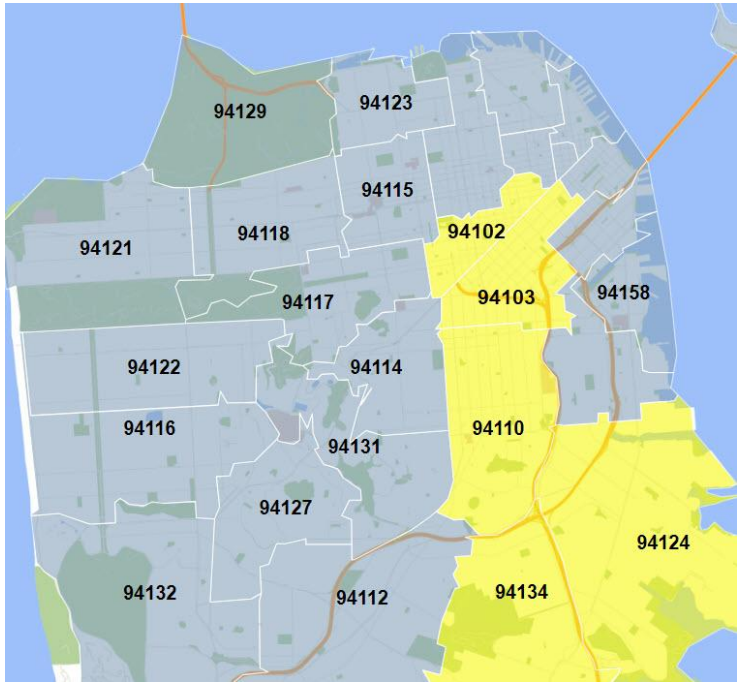
- 3rd Party consultants conducting the AQ modeling
- Cost to comply – mid-rise buildings

Who needs to comply in the APEZ:

- Major renovations
- New Construction
- Change of Use

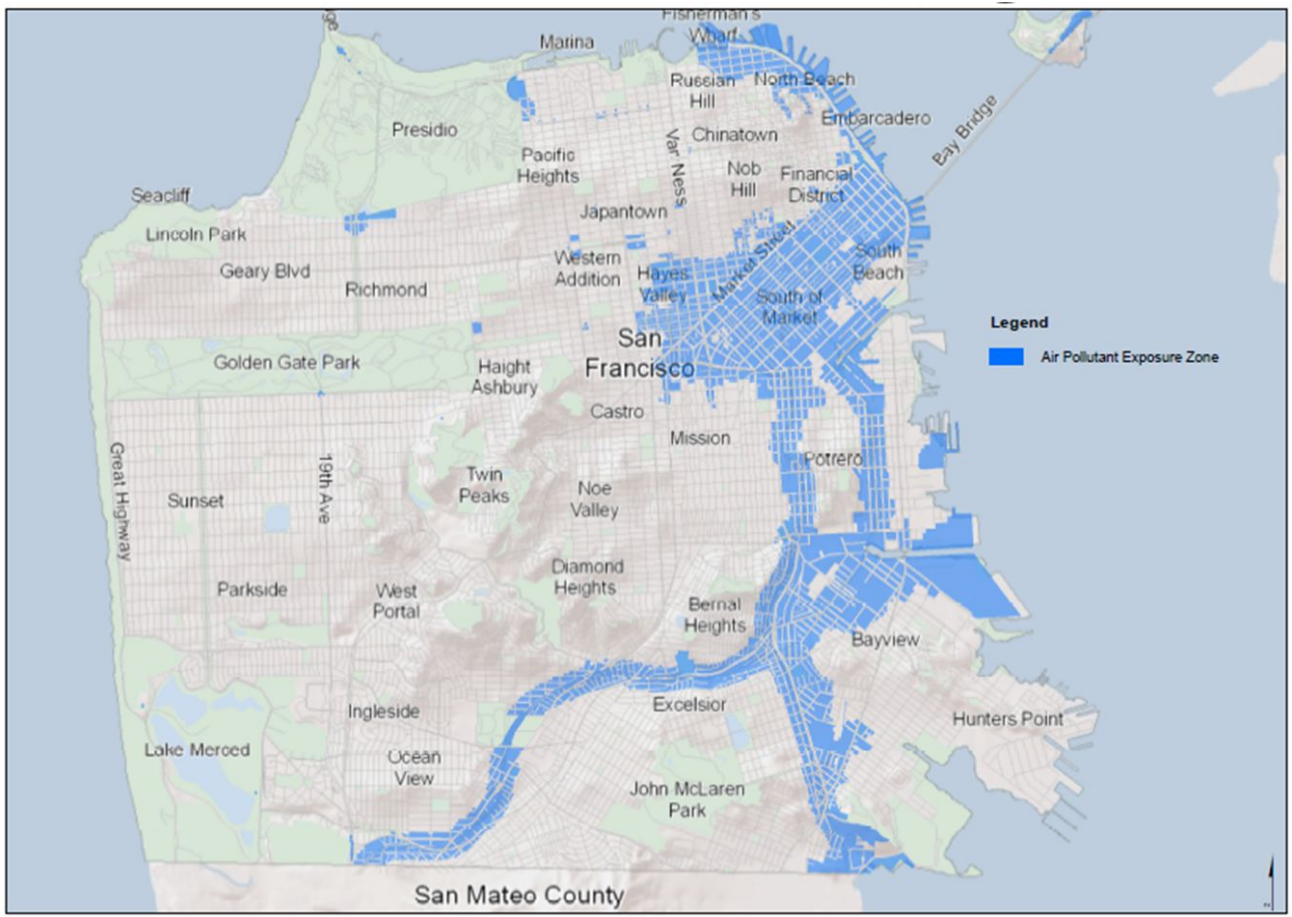
Health Vulnerable Locations
Health Equity Element

- Evaluation of air quality related illnesses and deaths
  - Most currently available 3 years of hospital data
  - Mortality and morbidity aggregated by zip code
  - Calculated Vulnerability Index



2014 - APEZ Modeling Revised

Health Code Article 38 amendment adopted to include <u>all</u> Sensitive Use Buildings



Mobile Sources

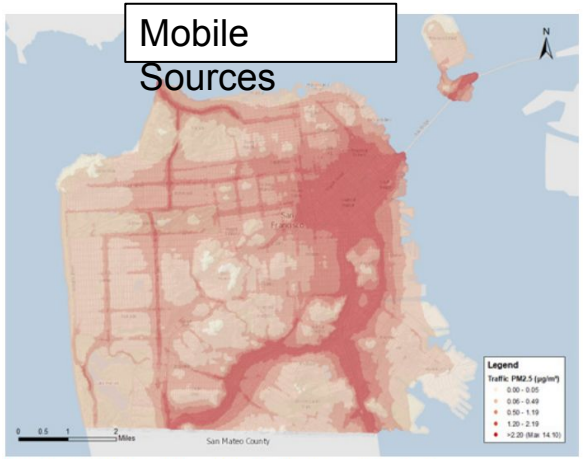


Figure 10. 2020 Annual Average $PM_{2.5}$ Contributions from Mobile Sources in San Francisco

Permitted Stationary Sources

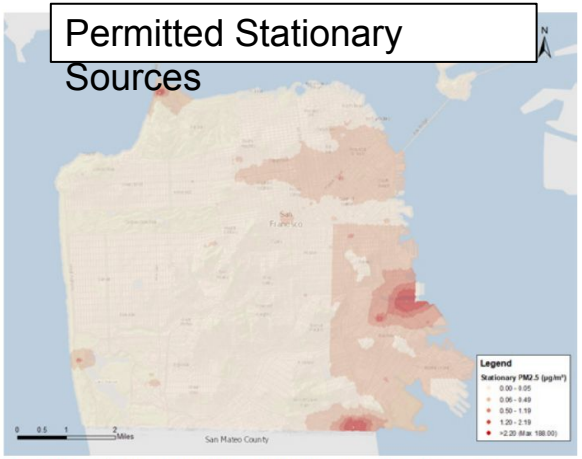


Figure 12. 2020 Annual Average $PM_{2.5}$ Contributions from Permitted Stationary Sources in San Francisco

CalTrain

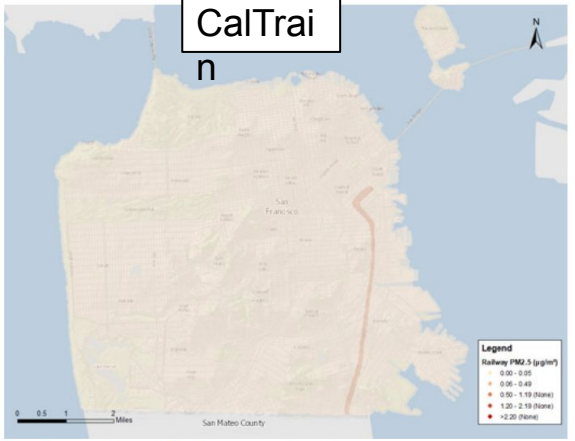


Figure 14. 2020 Annual Average $PM_{2.5}$ Contributions from Caltrain in San Francisco

Maritime Sources

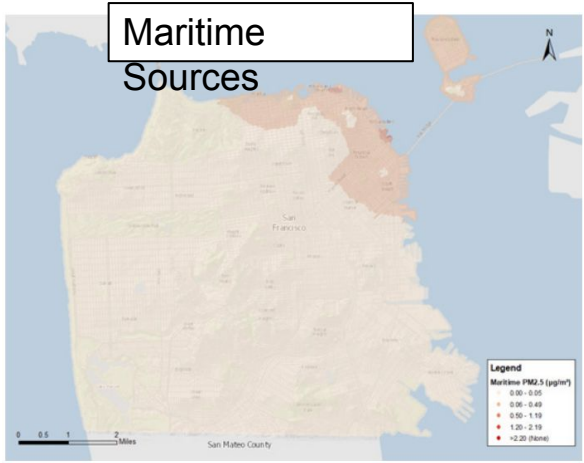
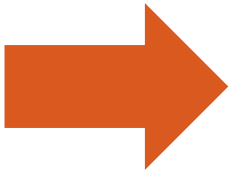
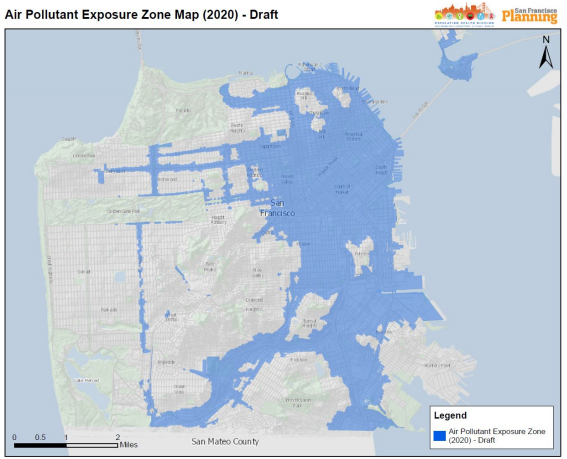


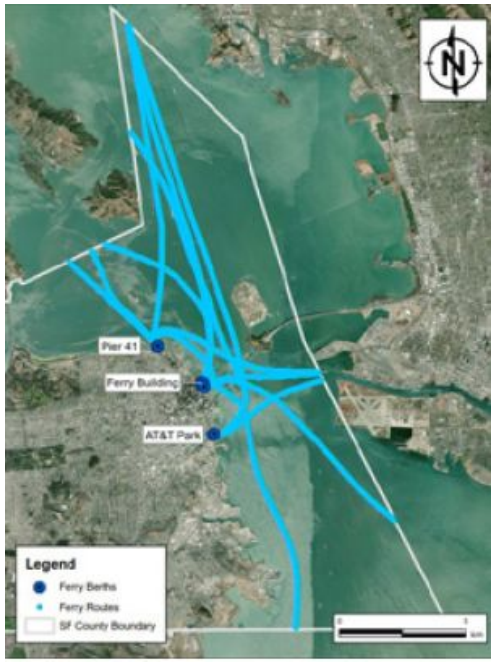
Figure 16. 2020 Annual Average $PM_{2.5}$ Contributions from Maritime Sources in San Francisco



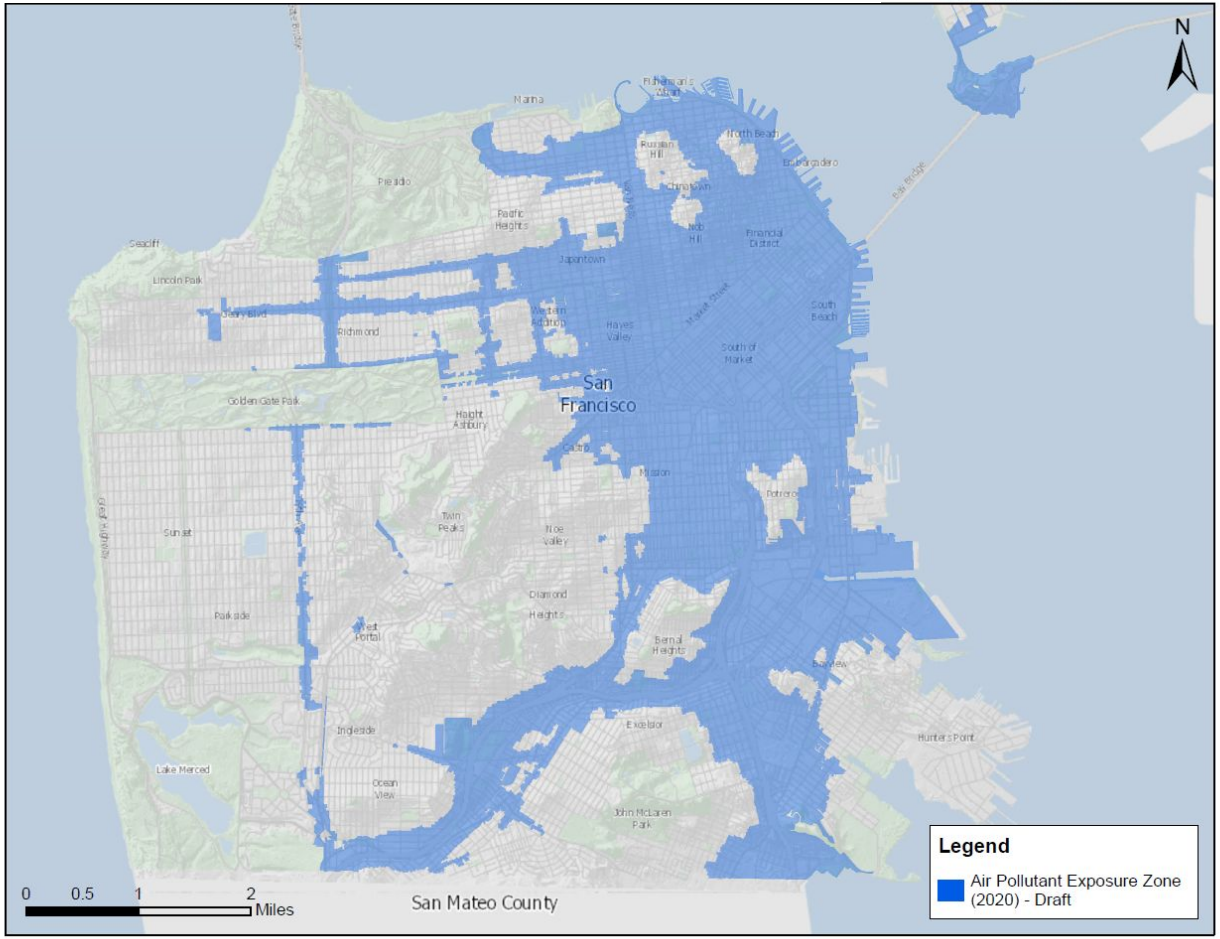
Air Pollutant Exposure Zone Map (2020) - Draft



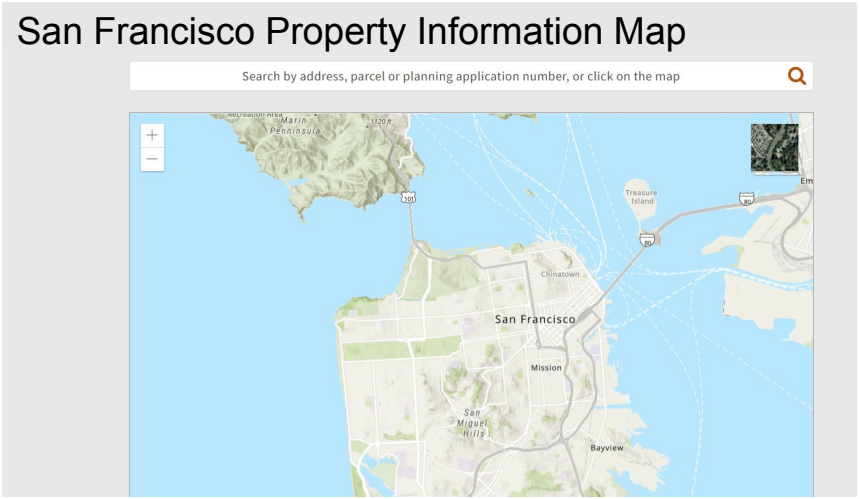
2020 - Article 38 APEZ Map Update Required



Air Pollution Exposure Zone (2020) DRAFT



San Francisco Property Information Map



San Francisco **Property Information Map**

Help

- Property
- Zoning Information
- **Environmental Information** 6
- Historic Preservation 8
- Planning Applications
- Building Permits 2
- Other Permits
- Complaints
- Appeals
- BBNs & NSRs

5203035

Environmental Information

The sections below list environmental monitoring requirements and general environmental topics related to this property.

Report for: **5203035**

CEQA Information

Known environmental issues related to this property are listed below. Under the California Environmental Quality Act (CEQA), certain types of work on this property may require additional environmental review.

Air Pollution Exposure Zone

Site is located in an area with elevated pollutant concentrations. Sensitive use buildings, as defined in the Applicability section of the ordinance must comply with Article 38.

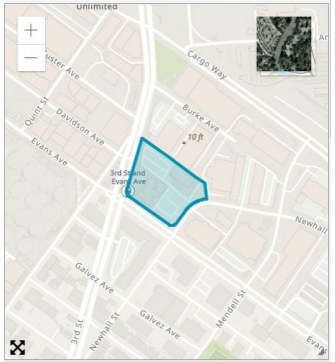
Added: 12/7/2014

Archeologically Sensitive Areas

Public land

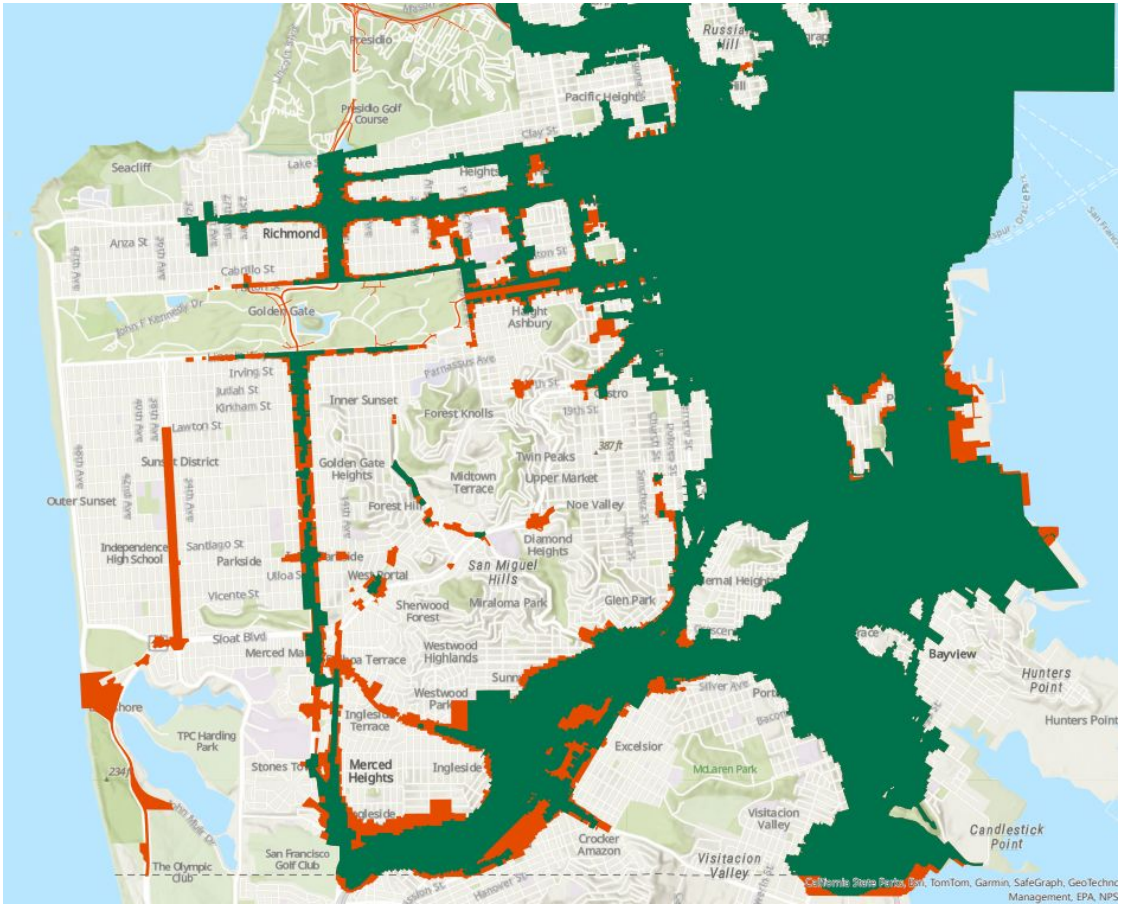
Read more about this regulation

Added: 6/30/2023



Map Layers

- Air Pollutant Exposure Zone (2014)
- Air Pollutant Exposure Zone (2020)
- Cortese
- Environmental Monitoring
- Flooding (Stormwater) - Disclaimer
- Flooding FEMA FIRM (Coastal)



2025 APEZ Update & Beyond

- In February 2024, U.S. EPA lowered the federal primary $PM_{2.5}$ annual standard from 12.0 ug/m^3 to 9.0 ug/m^3.

Key Takeaways

Objective

- **Health Code Article 38** requires **NEW** buildings that would have sensitive uses (i.e. housing or schools), to include a ventilation system that sufficiently removes fine particulate matter ($\mathbf{PM_{2.5}}$) (MERV 13 or equivalent filtration) and provides positive pressure in ever unit.
- **Environment Code Chapter 25** requires public works projects within the air pollutant exposure zone to use the cleanest construction equipment available defined by CARB.
- Air Pollutant Exposure Zone is also considered when evaluating projects subject to environmental review under the **California Environmental Quality Act.**

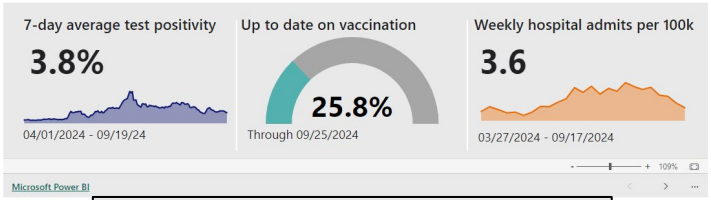
Map Methodology

Methodology established in Health Code Article Section. 3806 states that APEZ covers areas:

1. Where **modeled PM2.5 emissions (**mobile sources, BAAQMD permitted sources, maritime sources, and CalTrain) reach 10 micrograms/cubic meter (9 micrograms/cubic meter in zip codes 94102, 94103, 94110, 94124, 94134)
2. Where the **estimated lifetime (70 year) cumulative excess risk of cancer from that exposure** to those is greater than 100 in a million, (90 in a million in zip codes 94102, 94103, 94110, 94124, 94134)
3. **Proximity** (500 feet) from any Freeway

Thank you!

- Q&A



Data Analysis and Dashboarding

Community Health Improvement Plan

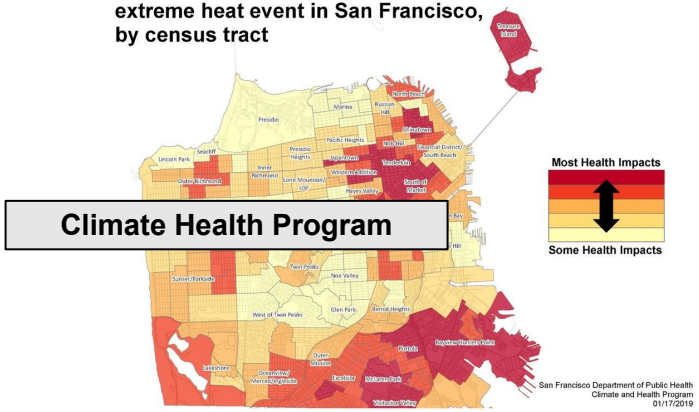
https://www.sf.gov/reports/august-2024/san-francisco-community-health-improvement-plan-chip

Disease Surveillance

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

Public Health Emergency Preparedness and Response

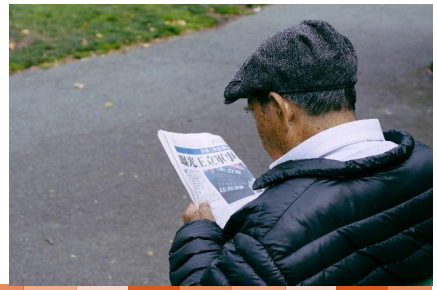
Predicted distribution of the health impacts of an extreme heat event in San Francisco, by census tract



Climate Health Program

https://www.sf.gov/san-francisco-climate-and-health-program

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH



THANK YOU!

Design by Mehroz Baig v. 2017-4-14

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

Q&A Document Feedback Activity

Q&A Document Feedback Activity

Goal:
Have a Q&A that is useful for CERP planning

What works well?
What should be changed?
How should we use the Q&A at meetings?

bit.ly/CERP-QA

How to Q&A - A Primer

October 15, 2024 BVHP/ SE SF AB 617 CSC Meeting

Category ↓ : Sub-category →	Knowledge Questions	Problem Questions
Air Pollution basics	3 - answered	0
Air Monitoring	3 - answered	6 total - 4 unanswered - 2 answered but have follow ups
Air Pollution Sources- includes Emissions, Enforcement & Permitting (maybe need separate categories)	6 - answered	7 total - 3 unanswered - 4 answered but have follow ups
CERP	6 - answered	0
CERP Strategy development	1 - answered	2 - unanswered
MISC	Unrelated to AQ - 1 (+ 6 more unrelated in “Air Pollution Sources” category) Related to AQ - 3 (need to be categorized)	

Wrap up, Action Steps, & Announcements

Feedback on Meeting & Next Steps for the CSC

Please fill out the post-meeting survey form.

Next Meeting will be **Tuesday, November 19, 2024**

It is important that you register for each meeting so that we can make any required accommodations.

Thank You!

See You on November 19!!