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RICHMOND - SAN PABLO
COMMUNITY

PATH TO CLEAN AIR

Community Emission Reduction Plan (CERP)
Community Steering Committee Meeting #10

January 24, 2022

Today's Agenda

1. Roll Call
2. Approval of December 13, 2021, Meeting Minutes
3. New Steering Committee Members Introduction
4. Social Pinpoint Final Presentation (by Grantees)
5. How Measurements and Modeling Help Develop a CERP
6. Public Comment on Non-agenda Items and Next Steps

Timeline: Where are We Today?

Welcome!


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Approval of December 13, 2021 Meeting Minutes

Public Comment

New Steering Committee Members Introduction

Karissa White, Staff Specialist I
kwhite@baaqmd.gov

New Members

- Application period closed November 19, 2021
- The Air District Board approved four new members on December 15, 2021
- Two new members have accepted, completed paperwork, swore in, and are now joining the CSC
- Let's give a warm virtual applause for our new members!

Marisol Cantú

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Simren Sandhu

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Public Comment

Steering Committee Questions and Discussions

Social Pinpoint Final Presentation (by Grantees)

Kevin Olp, Senior Policy Advisor
kolp@baaqmd.gov

Emphasis on Equity and Representation

- Reaching out to vulnerable communities:
  - Communities susceptible to air pollution because of pre-existing health conditions
  - Neighborhood areas near sources of pollution
- And groups which have been historically excluded or underrepresented. Examples include:
  - Young people
  - Monolingual non-English speaking households
  - Unincorporated areas
  - Geographically underrepresented areas
- Quality of outreach over quantity

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Key Information About Grants

- Six grantees, projects ranged in size from $5,000 to $15,000. $72,876 total awarded.
- All groups stipended youth activities and $9,300 were spent on stipends for youth-funded outreach efforts.
- The grant period was from September through November.

Path to Clean Air Community Boundary

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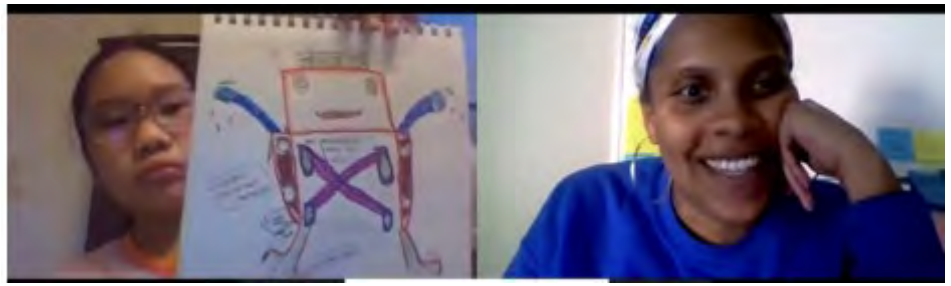
Community Organizing Project Highlights

Path to Clean Air Sunday Ride!

Come ride with us on Sunday as we ride around the beautiful paths our city of Richmond has to offer.

We are encouraging participants to share their story about Air Pollution in Richmond and San Pablo as part of the Path to Clean Air Campaign. We may have a surprise for those who join us ;)

Everybody rides, all riders, all ages, nobody left behind. Everyone is welcomed!



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National Association for the Advancement of Colored People (NAACP), Richmond, California Branch

Project team

- The NAACP Health Committee is composed of four members: Sarah Grant, LaChanda Davis, Jamelle Wallace, Tracy Walker

NAACP Health Committee Activities

1. Social media campaign
2. Promoted at community events
3. Connected with local churches
4. Leveraged swag bags and promotional items
5. Sponsored youth/young adult activities

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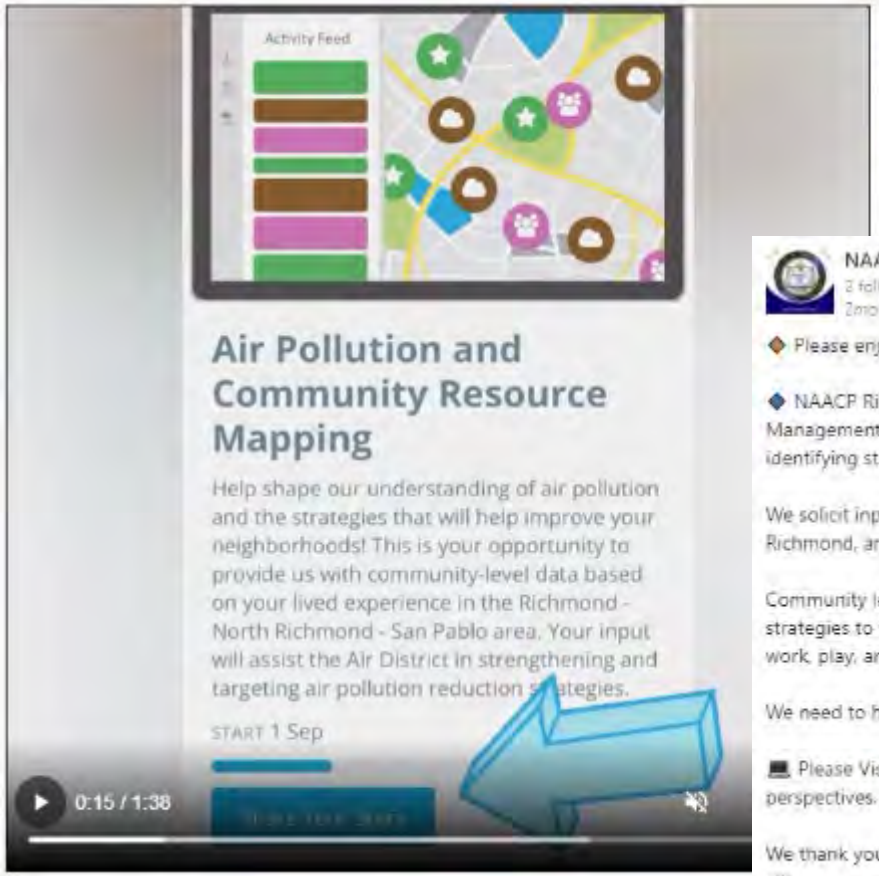
Social Media Campaign



naacprichmondca • Follow

naacprichmondca 🔸 Please enjoy this tutorial on how to use the Social Pin Point Survey tool!

NAACP Richmond CA
2 followers
2mo •
+ Follow

🔸 Please enjoy this tutorial on how to use the Social Pin Point Survey tool!

🔹 NAACP Richmond CA is working in partnership with the Bay Area Air Quality Management District to help learn about the air pollution in our community, while identifying strategies to help improve our neighborhoods for better health!

We solicit input from you and all community members in Richmond, North Richmond, and San Pablo, to learn more about local air pollution concerns.

Community leaders from the area are working with the Air District to co-develop strategies to reduce harmful air pollution that impacts people where they live, work, play, and pray.

We need to hear from you!

💻 Please Visit https://lnkd.in/gySjfDxt and take a moment to share your stories, perspectives, and input to help inform local air pollution strategies."

We thank you for your partnership to help build a healthy air environment for us all!

@bayareaairdistrict #naacprichmondca #communitysupport #communityaction #cleanairforall #cleanairnow #bayareaca #richmondairmatters

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Community Outreach Activities

- 9/10 Pop-up clinic Bethlehem Missionary Church, Richmond 5 bags given
- 10/17 Pop-up clinic North Richmond Baptist Church, Richmond 10 bags given
- 10/30 Pop-up clinic William Jenkins Health Center, Richmond 10 bags given
- 11/06 Pop-up clinic Life Long Medical Vale Road, Richmond 10 bags given
- 11/10 Pop-up clinic Mobile Clinic, Parkside Drive, Richmond 15 bags given
- 10/31 Pilgrim Rest Community Church 43rd Street, Richmond 25 bags given
- 11/06 Community Walk 49th Street, Richmond 10 bags given
- 11/13 Women's Empowerment MacDonald, Richmond 30 bags given
- 11/19 Richmond High School PTA 23rd Street, Richmond 18 bags given
- 11/20 Community Volunteer Day Ohio Ave, Richmond 10 bags given
- 11/21 Davis Chapel Youth Outreach North Richmond 20 bags given
- 11/22 Pilgrim Rest Food Giveaway 43rd Street, Richmond 10 bags given

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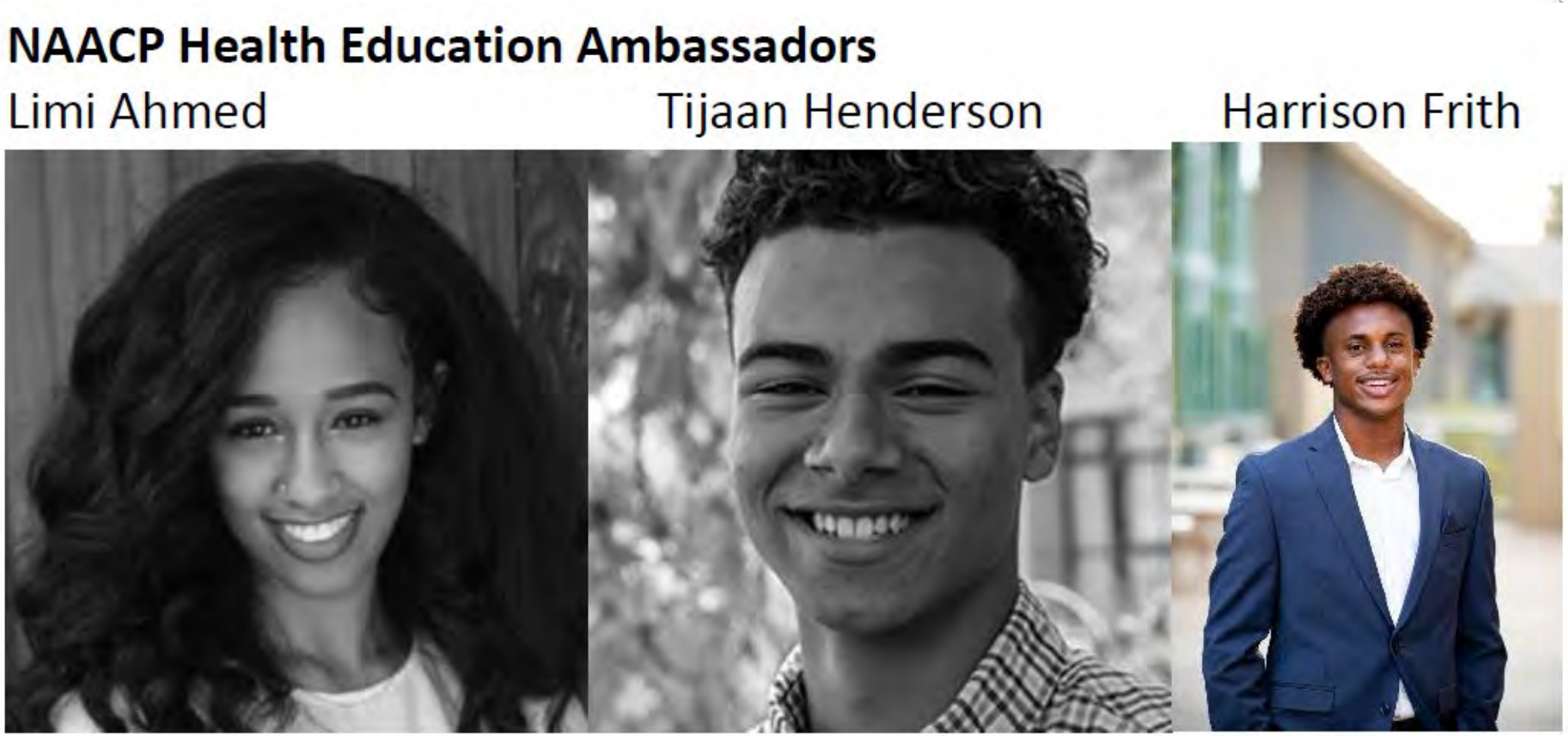
Youth Led Survey Promotion Activities – Youth Contest

Youth Led Survey Promotion Activities – Health Education Ambassadors



Lessons Learned

1. Participants encountered a host of technical difficulties.
2. When individuals ran into issues with the survey, they became frustrated and gave up without submitting a response.
3. Third, residents did not know how to identify poor air quality unless there was a clear visual cue for them or the air had a strong odor.
4. Trust is a major issue.

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Suggestions and Feedback

- The recent Chevron flaring incident demonstrates that residents feel powerless to do anything about air pollution.
- Invest in a training program in Richmond, San Pablo and North Richmond about the negative effects of air pollution upon their health and well-being.
- Health professionals should participate in the program as well discuss strategies for managing asthma, respiratory and cardiovascular diseases that are exacerbated by poor air quality.
- In addition, the team should lay out the actions that businesses and government entities are undertaking to reduce air pollution.

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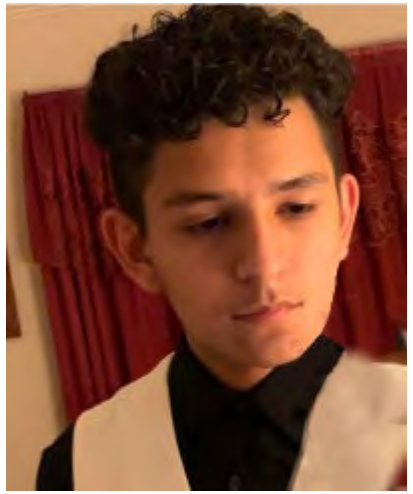
#NuestraVoz + #OurVoice:

Our community's feedback on air quality, resources, and strengths of Richmond and San Pablo

By YPAR students:
Michelle Gomez, Manuel Gomez, Hector Munoz, Jocelynn Arellanes, Mario Rodriguez

Student project leaders:



Manuel Gomez
12th grade
Berkeley
High School

Jocelynn Arellanes
12th grade
Richmond High school

Michelle Gomez
11th grade
Berkeley
Highschool

Hector Munoz
11th grade
John F. Kennedy
Highschool

Mario Rodriguez
9th grade
Leadership
Highschool

Our YPAR Program

(Youth **P**articipatory **A**ction **R**esearch)

Richmond Food Access Survey-YPAR (English)

As a youth research group here in Richmond, we are committed to tackling the issues of the Richmond community. One of those issues being the lack of nutritious foods accessible to the community of Richmond. Access to these foods has grown more difficult to community members due to the coronavirus pandemic and shelter-in-place orders. In order to progress with data collection for this project, your cooperation is needed. Please take a few moments to complete the following survey to help our progression. No personal information will be collected. If any question makes you uncomfortable, please feel free to skip. Thank you for your cooperation.

1. **Age Range:**
   10-15 16-21 22-27 28-33 34-39 40-45 46-51 52+
2. **Cross-streets (to pinpoint census tract):** _____
3. **Tell me how you are accessing food right now? What resources/places are you using to access food?** *PROBES:* How did you find out about these? Are these enough to meet your needs?
4. **How have your experiences accessing food changed from before to during COVID?** *Probes:* Has the pandemic made it harder for you to access food?
5. **How often do you go to Lifelong Medical for Veggie Giveaway, and why?**
6. **What are some reasons why you are not able to get food resources?**
7. **What types of food resources are you missing right now?**
8. **What would help you get these' or what programs would be helpful?**

Our Project Proposal

Goal: Complete **100** surveys in Spanish with adults who….

- Live in Richmond / San Pablo
- A Spanish-speakers
- Have low income
- Are immigrants

Participants received a $20 FoodsCo gift card for completing a survey

<u>Why we gave priority to this community:</u>

- **50%** of Richmond / San Pablo population is Latino
- **35%** of Richmond population are immigrants
- It is difficult to express an opinion to the government when …
  - You are not 100% comfortable speaking English.
  - You don't know who to call or how to complain about something that needs to be fixed in the community
  - There is no time to go to city government meetings because of work or other responsibilities
  - There may be discrimination or prejudice that does not create an open environment in government or city council meetings

Project responsibilities

1. Created recruitment scripts and materials for our table
2. Completed surveys with community members in Spanish and translated them into English
3. Led weekly meetings to review our progress
4. Created presentations of our project in English and Spanish
5. We supported with the final grant report

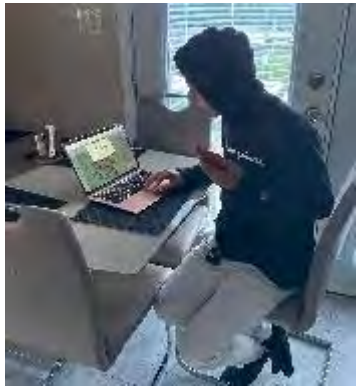
Weekly time commitment

- 4 hours to complete surveys
- 1 hour for the meeting
- 1 hour to do homework (presentations & additional projects)

#NuestraVoz Methods

[redacted]

[redacted]

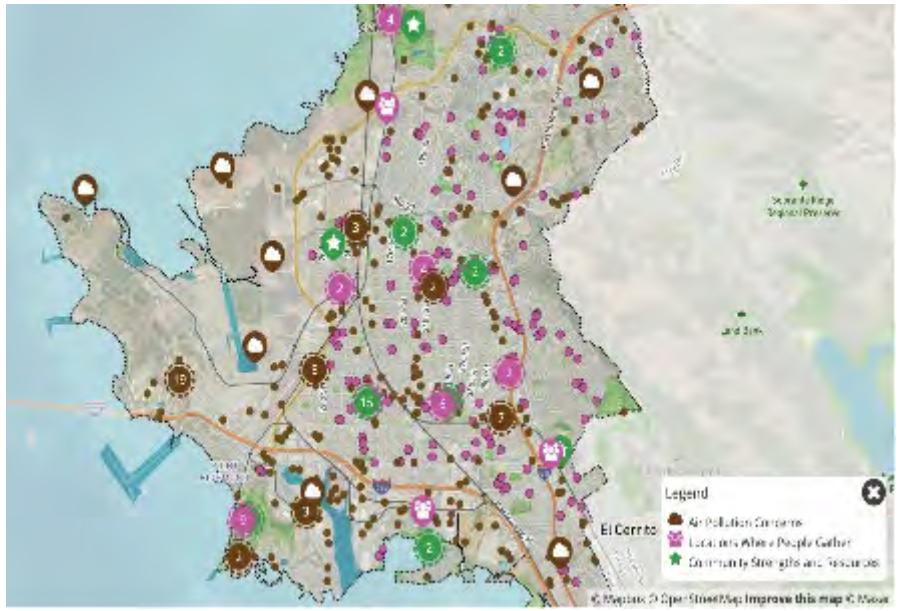


#OurVoice Methods

[redacted]

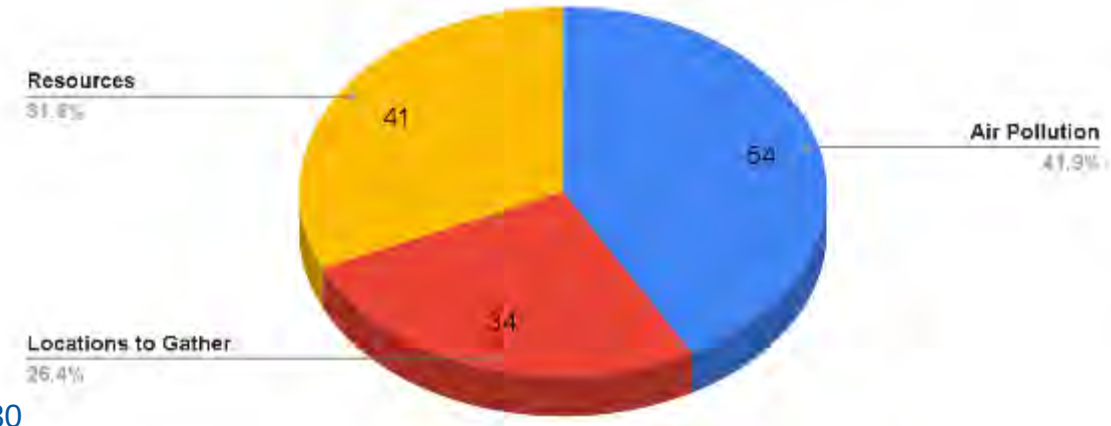
[redacted]

Results: #NuestraVoz

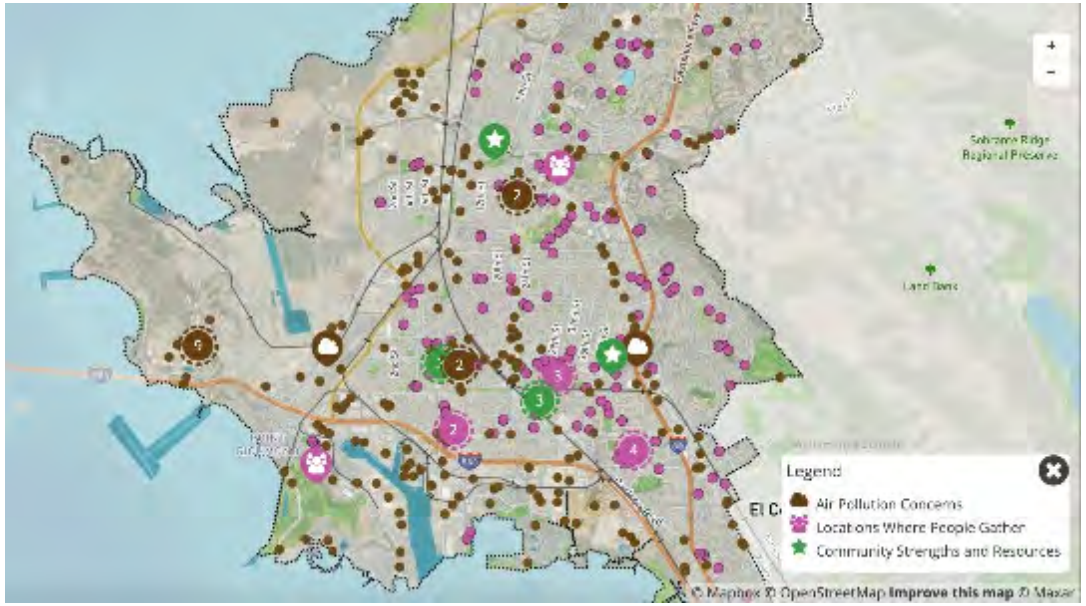


#NuestraVoz Surveys by Categories

Total Surveys: 129

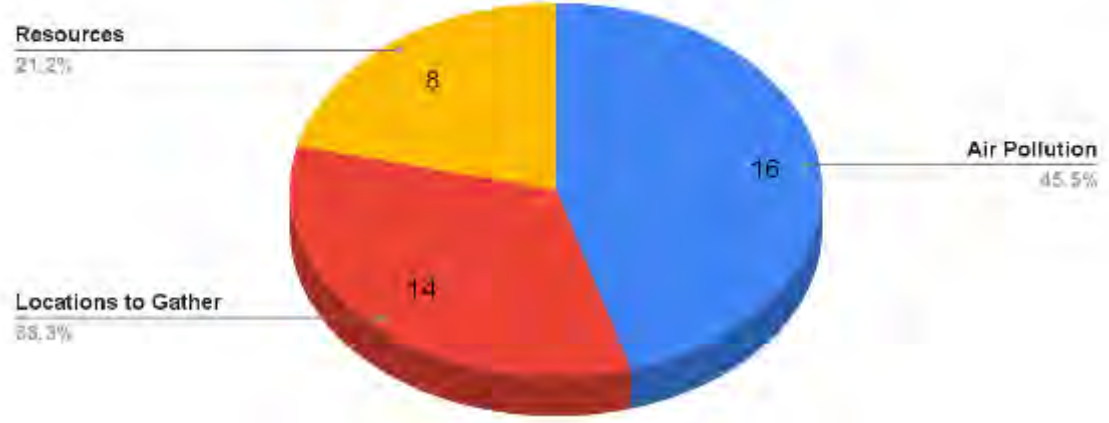


Results: #OurVoice



#OurVoice Surveys by Categories

Total Surveys: 38



Results: #NuestraVoz

#nuestravoz I feel like I can't take my kids out anymore because their asthma is gettin g worse and worse and chevron is constantly flaring chemicals in the air making it worse.

#Nuestravoz I work in Richmond High School and I know there is a lot of places where the students gather at the school but the football field specifically is the place where students gather the most. Something negative about it is that Richmond doesn't have clean air and the students are spending a lot of their time outside.

#NuestraVoz I don't like that the Chevron refinery is in Richmond and near to the place I live. There are a lot of people that live near here and can get sick because of the smoke the refinery let's out. It pollutes Richmond a lot and causes breathing problems for people there.

Results: #OurVoice

#ourvoice I feel like every time i'm in this area I see trash because I come here often to work out. I feel like the trash pollutes the air and creates a dirty environment.

The Ryse center is a nice spot that provides internships for low-income students. Provides youth a place to hang out and avoid getting in trouble. #ourvoice

The flarings come from chevron, every couple of years, there is a release in gases that can be smelled. My students who live closer to chevron have a high risk of getting lung diseases. This affects them badly. #ourvoice

Resources and Factoids Gathered

Factoids:

- Parents like to see children do something productive, like sports, clubs, but if it is outdoors, they are worried because of the bad quality air
- People are worried that the air in Richmond is toxic for their health
- The air is heavily polluted by Chevron refineries

Resources

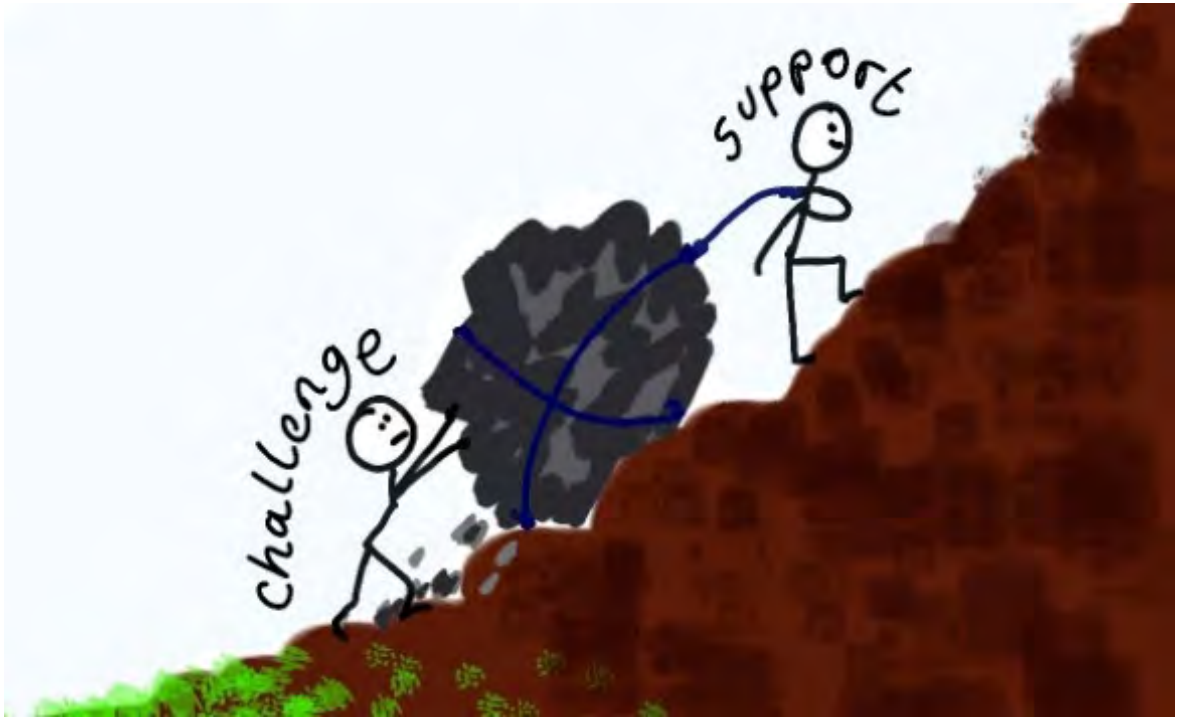
- RYSE Center
- Yes Nature to Neighborhoods
- Communities for Better Environment (CBE)
- Richmond Police Activities League (RPAL)
- The East Bay Center for the Performing Arts
- Veggie Giveaways at LifeLong WJHC
- Experience Berkeley

Our Limitations

1. Covid-19 pandemic restrictions
2. Limited clinic hours
3. Short grant activity window
4. Personal time management
    - School
    - Part-time employments
    - Family commitments

One of our Friday afternoon weekly meetings via Zoom

Our community and personal takeaways from this project



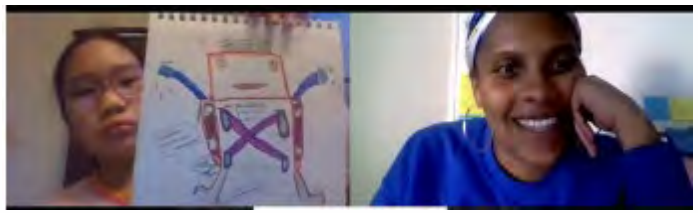
Thank you!
We are very grateful for your support

A special thank you to:
Our family for supporting us,
Dr. Omotoso for always advocating for us,
Kevin and Joan for making this project financially possible,
and our project supervisors Cindy, Marina, Carlos, Michelle, and Jackie for providing us with the tools and guidance to make this project a success

Rich-city Kids and Beautiful Gate, Inc.

The project at a glance...

- Developed an intergenerational outreach and education program by engaging youth ages 10-18 to conduct outreach and educational services for seniors.
    - Virtual training sessions
    - Youth-created art; poems; and songs to promote the project, educate the seniors on project goal and objectives; and inform them on how to respond to digital requests for information.



Geography Served: North Richmond, San Pablo, Tara Hills

Communities Prioritized: Seniors in the Heritage Homes and Tara Hills Care facilities.

The Air Quality & Arts Program

Training for stipended youth participants who were conducting outreach:

- WEEK 1: What is Air Pollution?
- WEEK 2: How is Air Quality Measured
- WEEK 3: What is Climate Change
- WEEK 4: Air Pollution & Health Effects
- WEEK 5: Our Part and What We Can Do… & Final Projects

Youth organized to conduct outreach in October and November in 3 different senior care facilities in Tara Hills and San Pablo.

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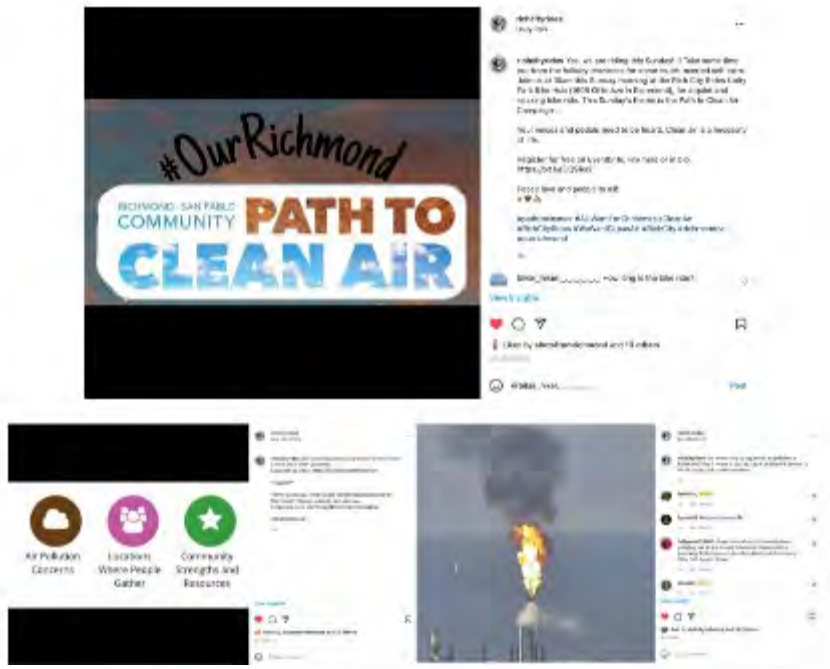
Rich City Rides

The project at a glance...

- Facilitate the collection of survey responses at their weekly Sunday rides, and other events (20 total events).
  - Stipends for youth who participate in and facilitate survey collection.
  - 11 weekend group bike rides centered around Clean Air as the specific theme to promote the mapping effort.
  - Curated multi-language multimedia content that is in multiple to raise awareness around advocacy and equity for environmental health initiatives.



Geography Served: North Richmond

Path to Clean Air Sunday Rides

Path to Clean Air Sunday Ride!

Come ride with us on Sunday as we ride around the beautiful paths our city of Richmond has to offer.

We are encouraging participants to share their story about Air Pollution in Richmond and San Pablo as part of the Path to Clean Air Campaign. We may have a surprise for those who join us ;)

Everybody rides, all riders, all ages, nobody left behind. Everyone is welcomed!

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Urban Tilth

The project at a glance...

- Engage residents and collect completed online surveys through social media campaigns, mailers with CR codes, in person survey collection at community events, farm stands, Community Sourced Agriculture (CSA) box deliveries, volunteer days, in person door to door canvassing and email invitations to CSA members in the project area.
    - Youth-led community service project - table and collect surveys from their peers during lunch and through visits to other classes.

Geography Served: Richmond and San Pablo

Communities Prioritized: Local residents, specifically living in neighborhoods surrounding their existing community gardens and farms.

Communities for a Better Environment (CBE)

The project at a glance...

- Conduct outreach and gather 500+ community stories for the Social Pinpoint platform.
- Door to door knocking, canvassing, phone banking, digital organizing, and direct mailers.

Geography Served: North Richmond-Richmond-San Pablo

Communities Prioritized: Black, Indigenous, People of Color frontline communities.

Public Comment

Steering Committee Questions and Discussions

How Measurements and Modeling Help Develop a CERP: Overview and Examples

Steve Reid, Senior Advanced Projects Advisor
sreid@baaqmd.gov
Daniel Alrick, Principal Air and Meteorological Monitoring Specialist
dalrick@baaqmd.gov

Topics for this Presentation

- Overview of technical assessment work
  - How technical analyses inform the CERP development process
- Example methods and insights
  - Chevron Richmond refinery
  - On-road mobile sources

Recap: Air Pollution

Emissions to Health Effects

What information do measurements or modeling provide about the steps in this air pollution pathway?

Linking Community Concerns to Strategies

Community-Identified Concerns

Linking Community Concerns to Strategies

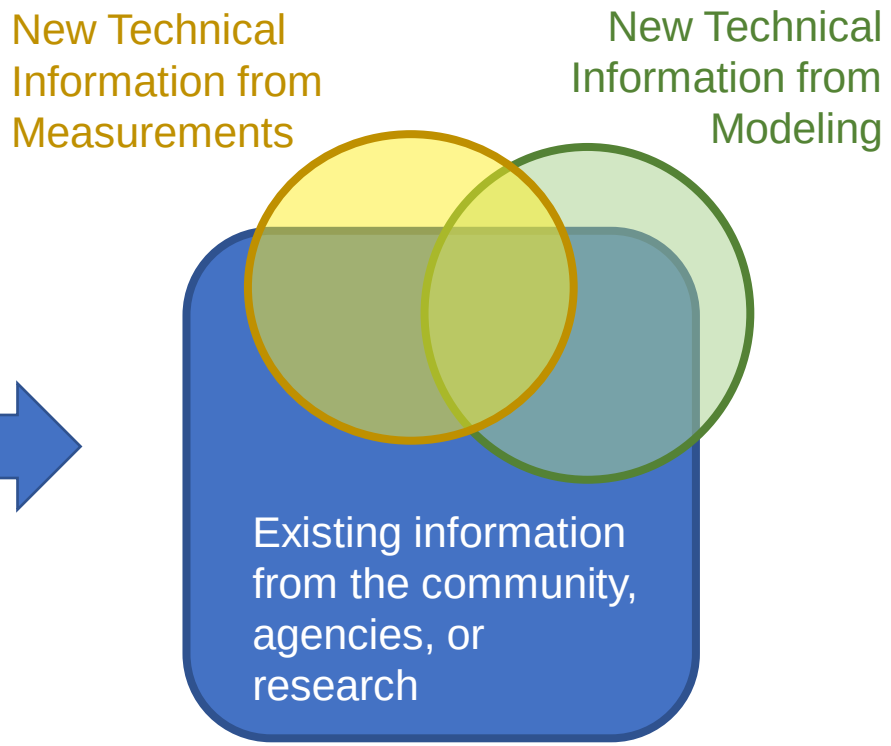
Community-Identified Concerns

Community Mapping Project

Monitoring Plan Development

Air Quality Complaints

Understanding Key Issues



Linking Community Concerns to Strategies

Community-Identified Concerns

Community Mapping Project

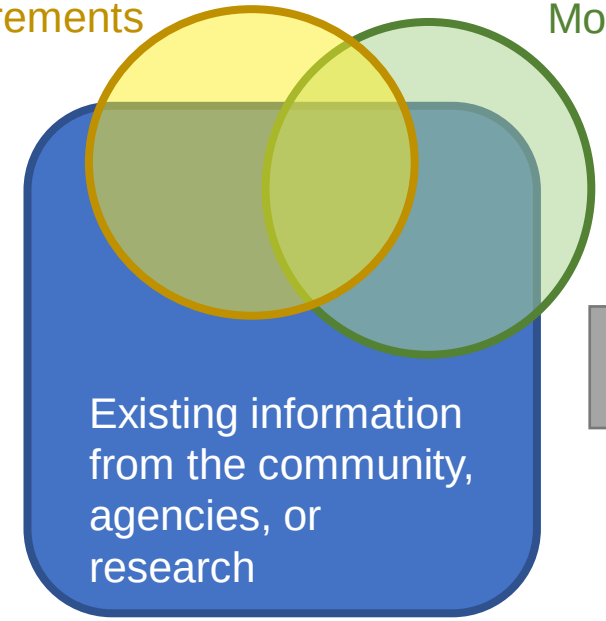
Monitoring Plan Development

Air Quality Complaints

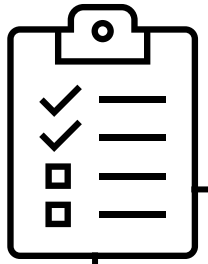
Understanding Key Issues

New Technical Information from Measurements

New Technical Information from Modeling



Insights Inform Key Issues

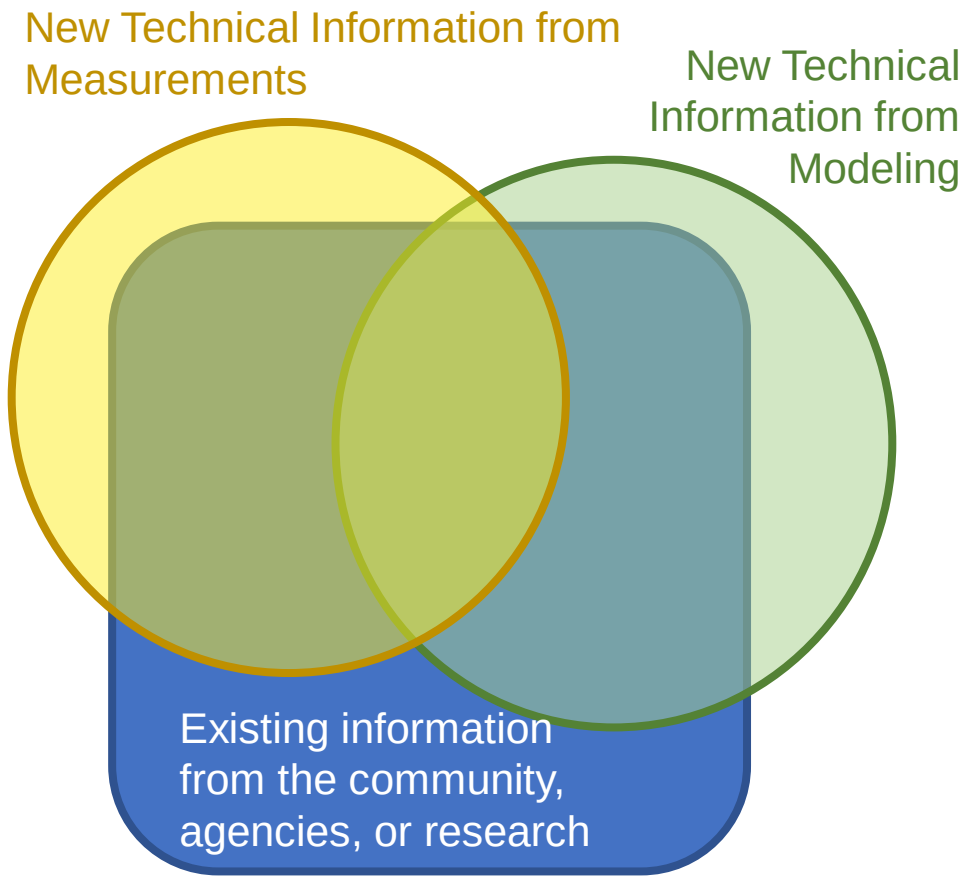


Strategies
to Reduce Pollution Emissions and Exposure

Setting **targets** and tracking **progress**

Linking Community Concerns to Strategies

- A given key issue may be better informed by modeling data, measurement data, by both, or by other kinds of information
- A technical assessment is a weight of evidence approach, combining relevant types of information to add to the description of key issues and support developing strategies
- Some issues and strategies might not need additional technical analyses



Example Key Issue: Chevron

Air Quality Monitoring

Emissions from Sources

Source Testing

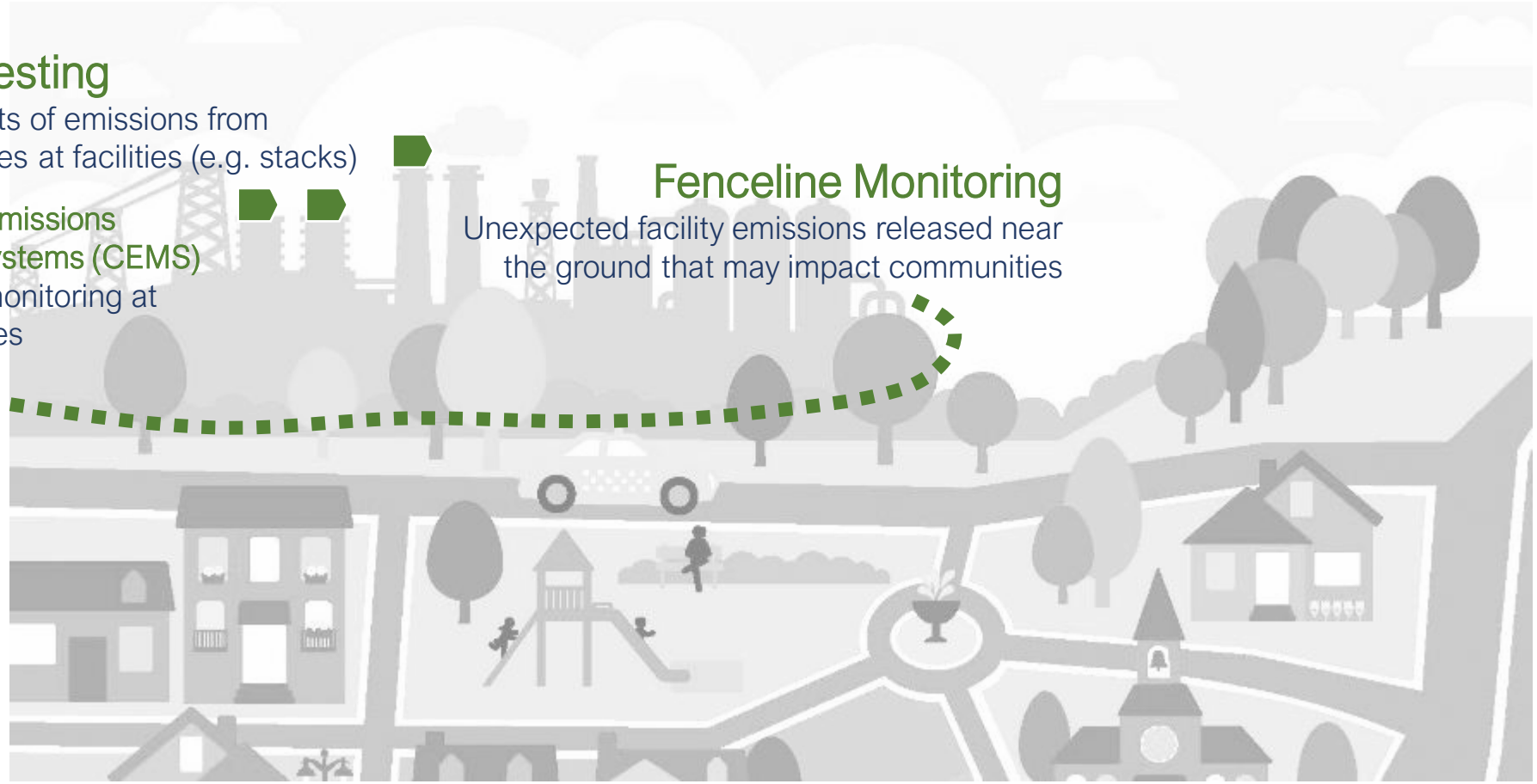
Measurements of emissions from certain sources at facilities (e.g. stacks)

Continuous Emissions Monitoring Systems (CEMS)

Continuous monitoring at certain sources

Fenceline Monitoring

Unexpected facility emissions released near the ground that may impact communities



Air Quality Monitoring

Emissions from Sources

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Measurements of emissions from certain sources at facilities (e.g. stacks)

Continuous Emissions Monitoring Systems (CEMS)
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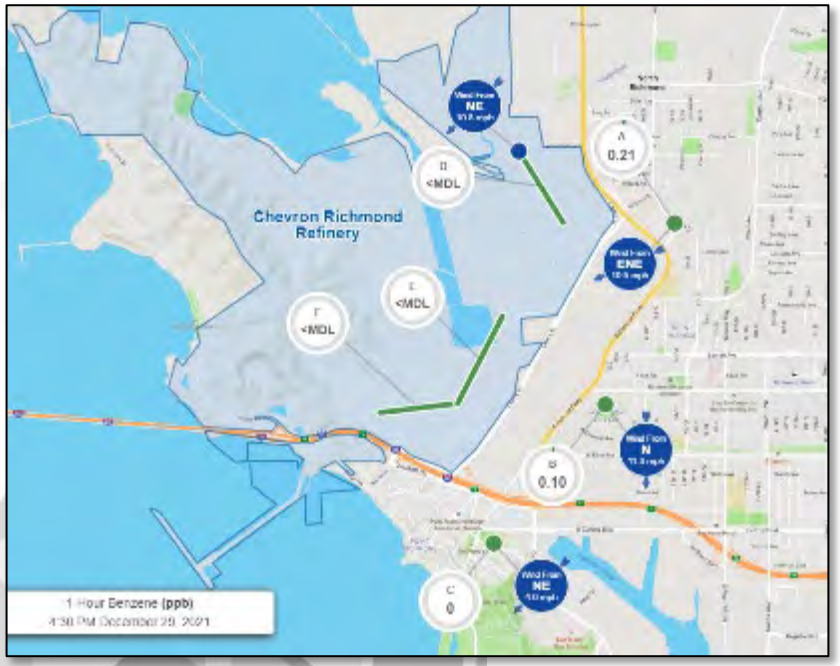
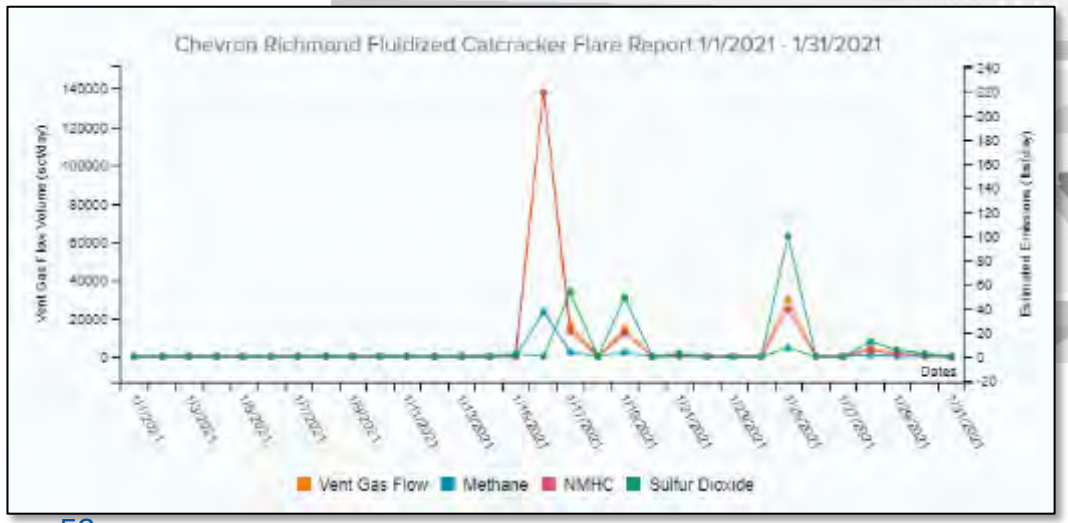
Data from Chevron fenceline monitoring
https://www.richmondairmonitoring.org/





Flare Emission Reports
https://www.baaqmd.gov/about-air-quality/research-and-data/flare-data

Air Quality Monitoring

Emissions from Sources

Ambient Air Quality

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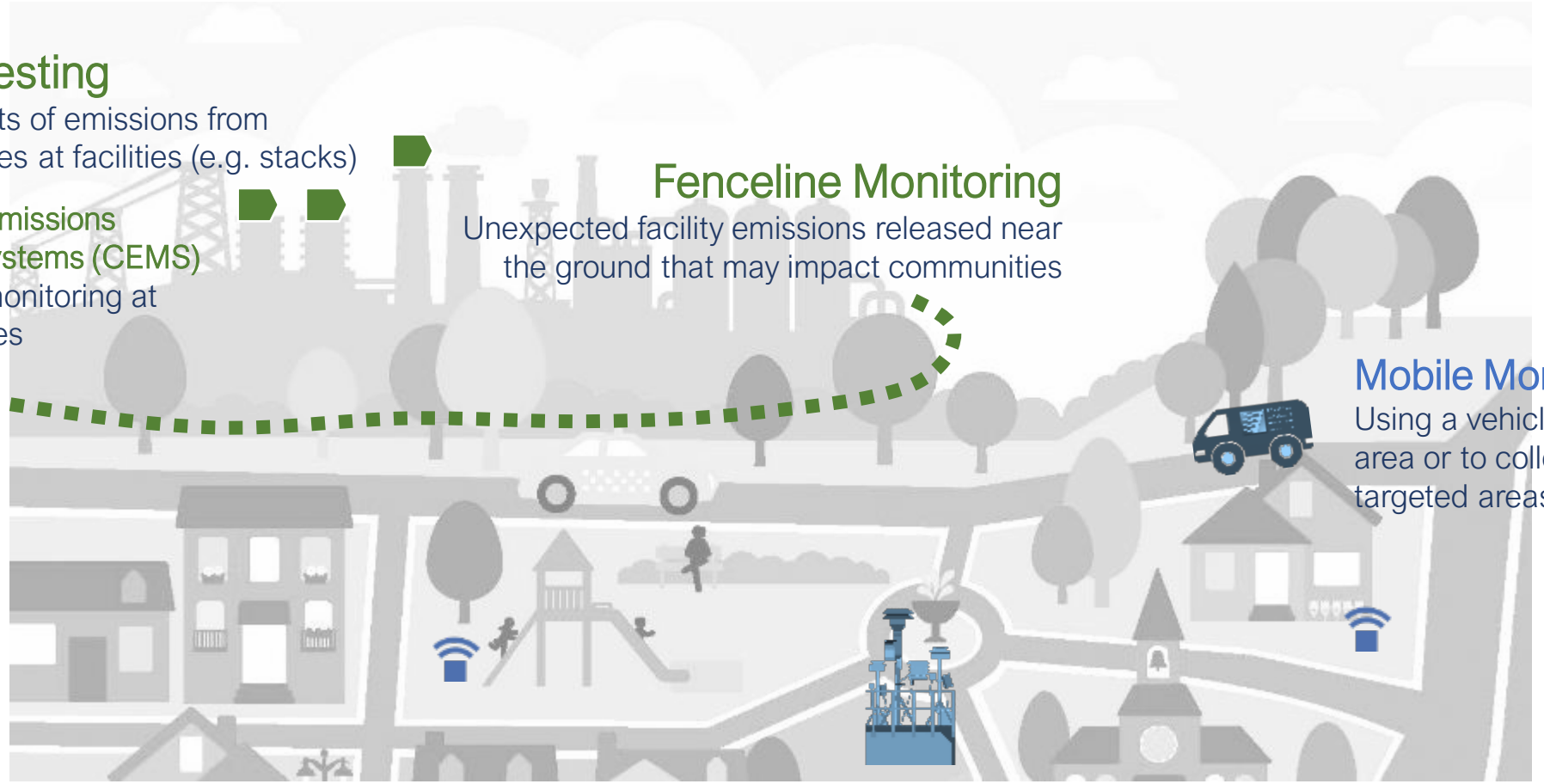


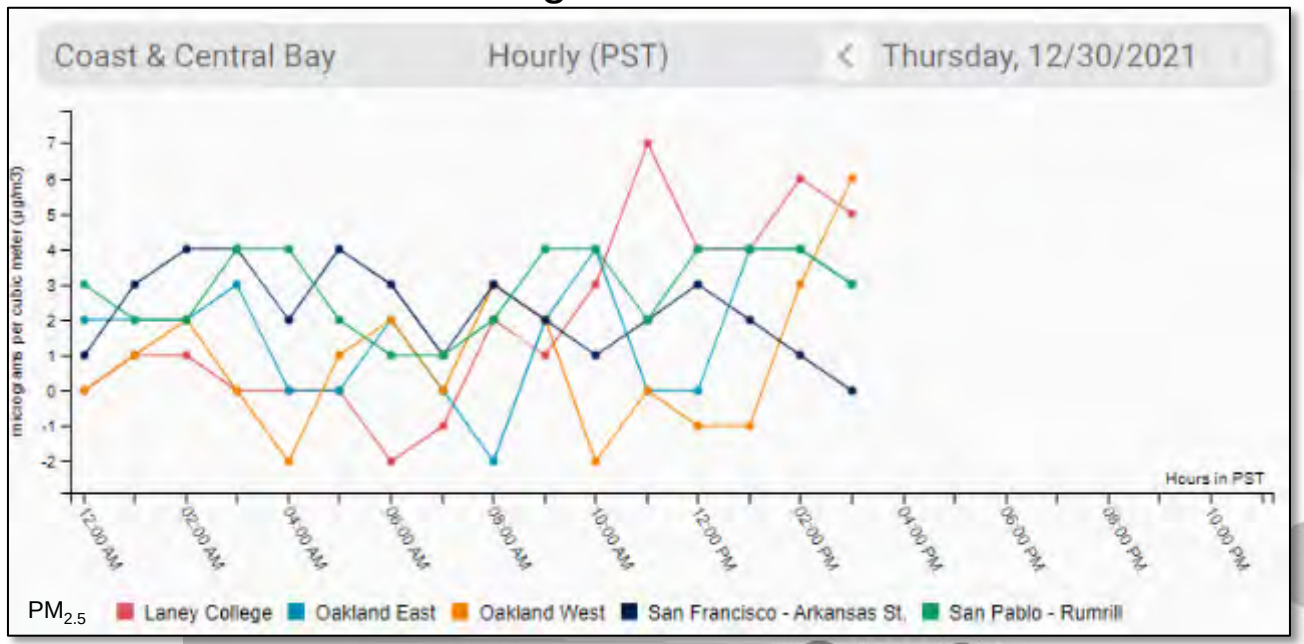
Mobile Monitoring
Using a vehicle to survey a larger area or to collect additional data in targeted areas

Long-Term Stations
Air District regulatory stations and facility-operated community stations provide real-time and long-term trend information for some locations

Sensor Networks
Lower-cost, real-time sensors for higher density data, community-led science

Air Quality Monitoring

Data from Air District long-term stations



Ambient Air Quality

Mobile Monitoring

Using a vehicle to survey a larger area or to collect additional data in targeted areas

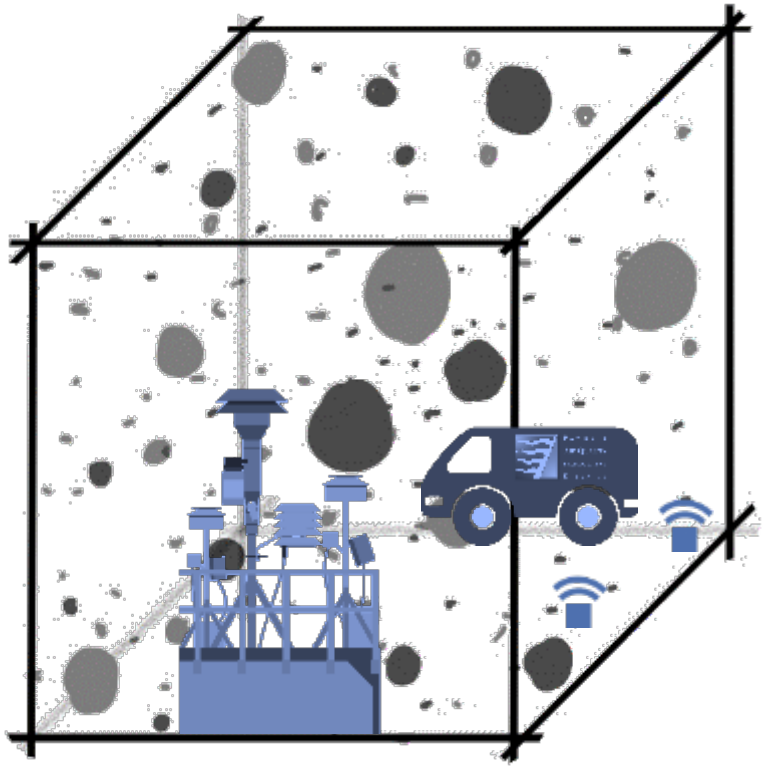
Long-Term Stations

Air District regulatory stations and facility-operated community stations provide real-time and long-term trend information for some locations

Sensor Networks

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

Ambient Air Quality Measurements



Measurements of concentrations of pollutants

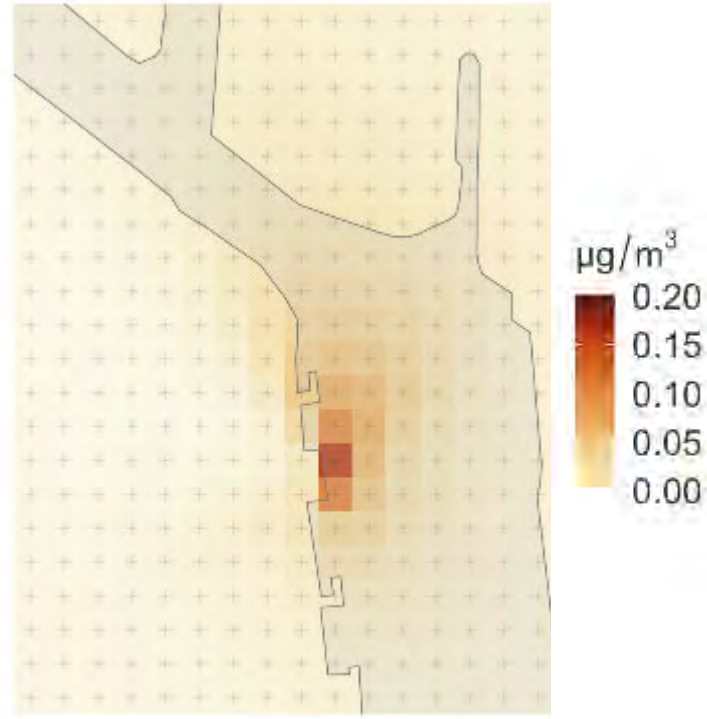
What makes up the concentrations we are measuring?

- Emissions from sources within the local area
- Emissions from sources throughout the Bay Area that get moved into and out of the local area
- Transport of pollution into and out of the area from beyond the Bay Area
- Chemical and physical changes to pollutants in the air

What can we learn from modeling?

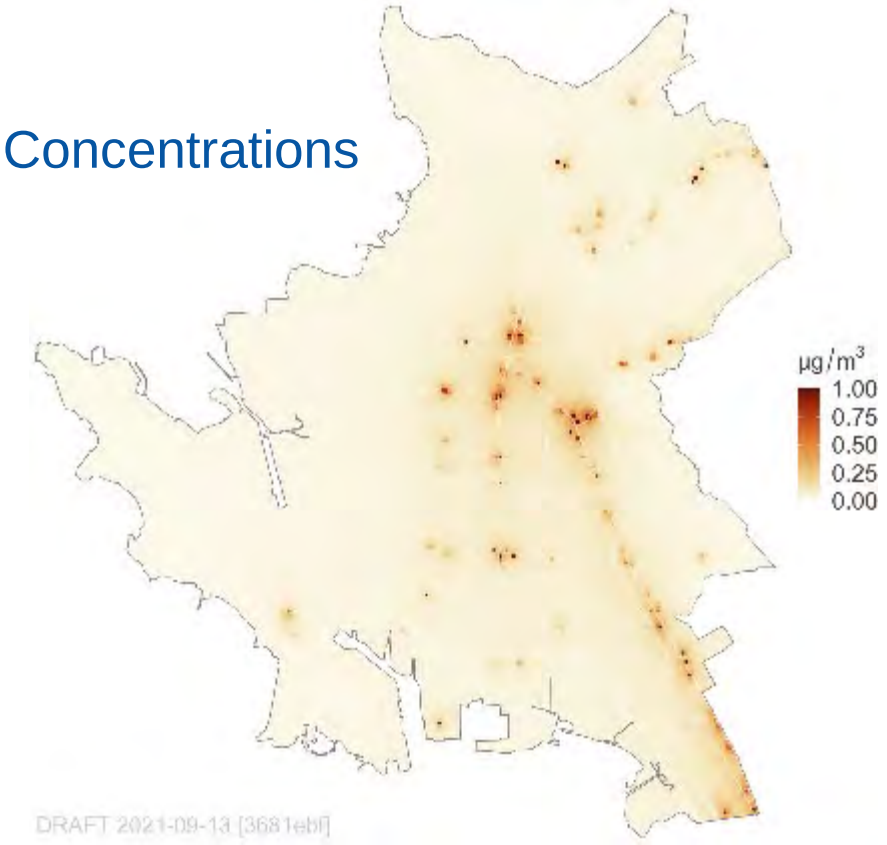
Modeling: emissions ➡ concentrations

- Air quality models combine emissions with meteorological data and other information
- Models provide an estimate of pollutant concentrations at specified receptor locations
- Modeling can be conducted to either quantify contributions from specific sources alone, or to estimate concentrations from a combination of sources
- Modeling can provide information on the impact of projected changes in emissions

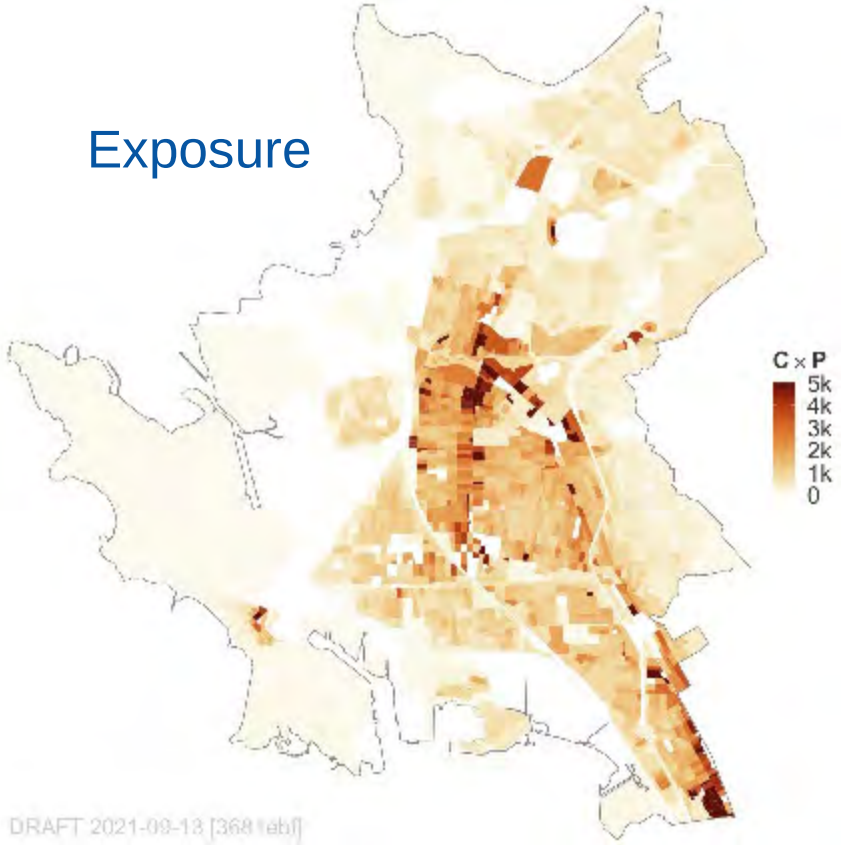


What can we learn from modeling? (cont.)

Concentrations



Exposure



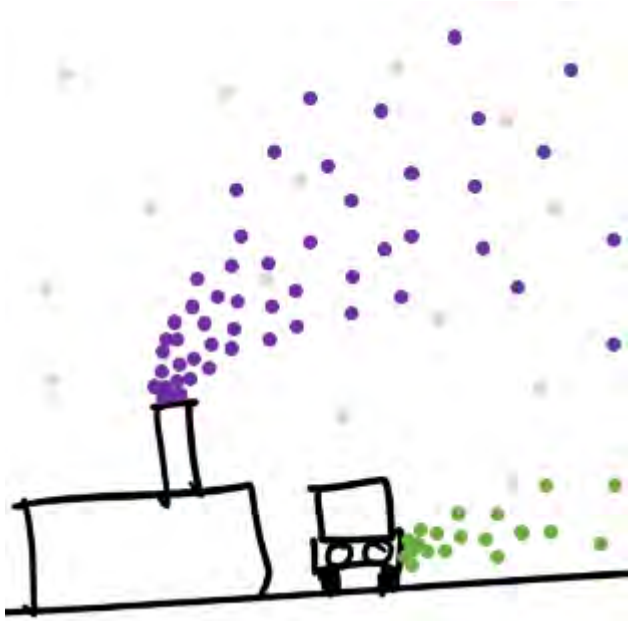
Modeled Impacts of $PM_{2.5}$ from Restaurants

Limitations of modeling and emissions data

- Emissions inventories do not cover all sources, and the quality of estimates vary by source type
- Emissions and modeling are usually focused on annual averages (may not capture episodic events)
- Modeling results are impacted by inaccuracies in underlying input data
- Models have simplifying assumptions built into them (e.g., ignoring chemical transformations)

Emissions data is a key input to modeling

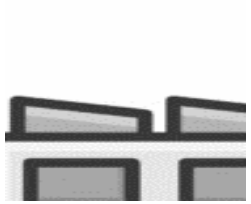
- Estimate of the mass of pollution emitted by various sources during a specified time interval (e.g., tons per year)
- The spatial resolution can vary from the global scale (GHGs) down to a single facility
- Inventories are generally pollutant specific based on average or typical conditions
- For air toxics, emissions can be risk-weighted



Emissions: How are they organized?

Source Sectors

Stationary Sources w/Permits



Refineries, power plants, gas stations, autobody shops

Area Sources

Fireplaces, water heaters, consumer products

On-Road Mobile

Cars, trucks, buses

Off-Road Mobile

Ships, aircraft, rail, construction equipment

Emission "Buckets"

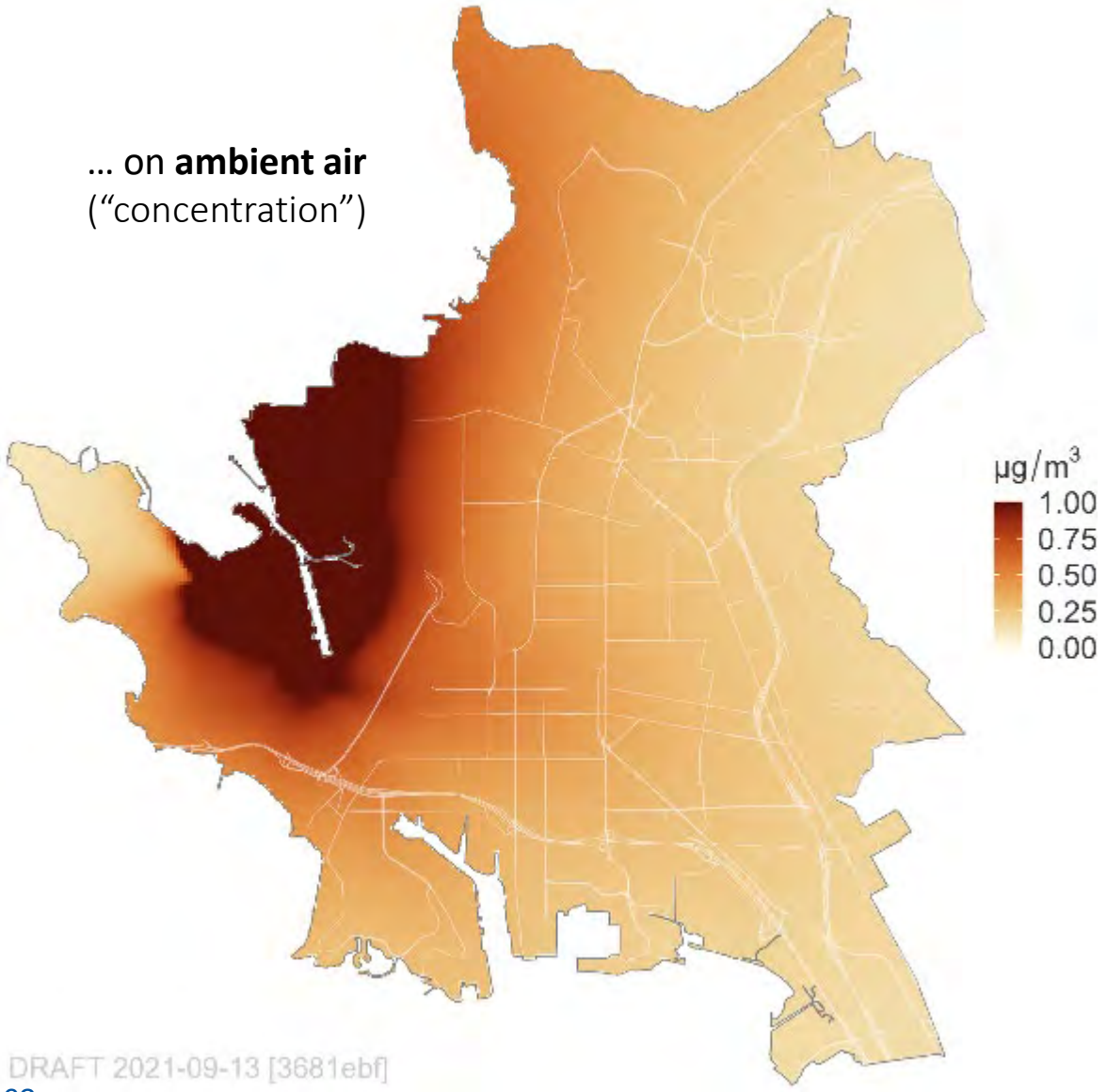
- Petroleum Refining
- On-road/Freeway
- Auto Body
- Port
- Rail
- Etc.

Emissions: How are they estimated?
Chevron

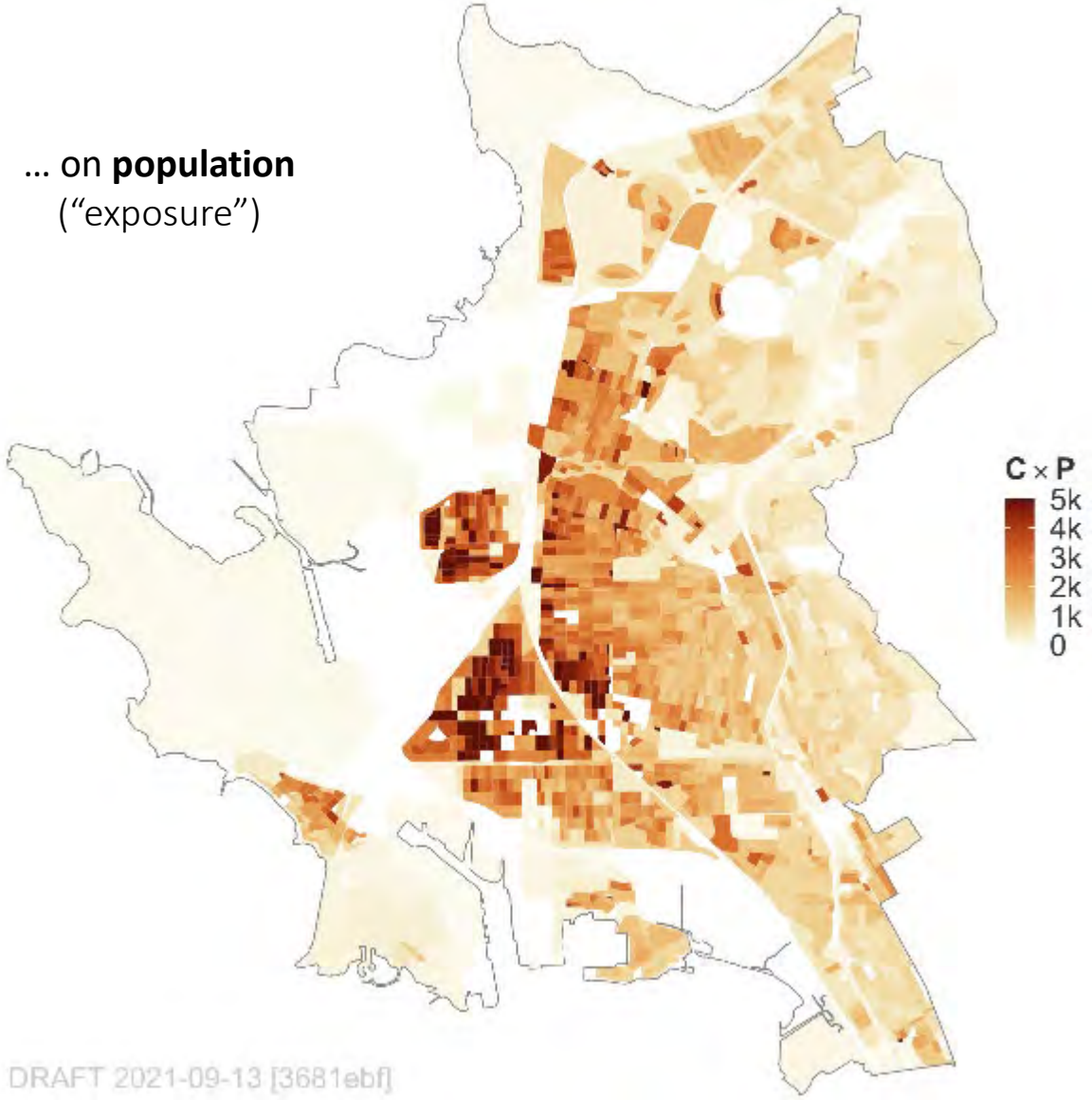
- For permitted sources at the facility, emissions are estimated annually and submitted to the District
- Emissions estimates are based on a variety of data, including source tests, emission factors, and activity data
- Emissions are reported by process/device, along with release parameters (e.g., location, stack height)
- The “Refining bucket” may include related industries (e.g., Chemtrade, Kinder Morgan) and mobile sources

Illustration: Modeled annual average contribution to $PM_{2.5}$ from sources at Chevron

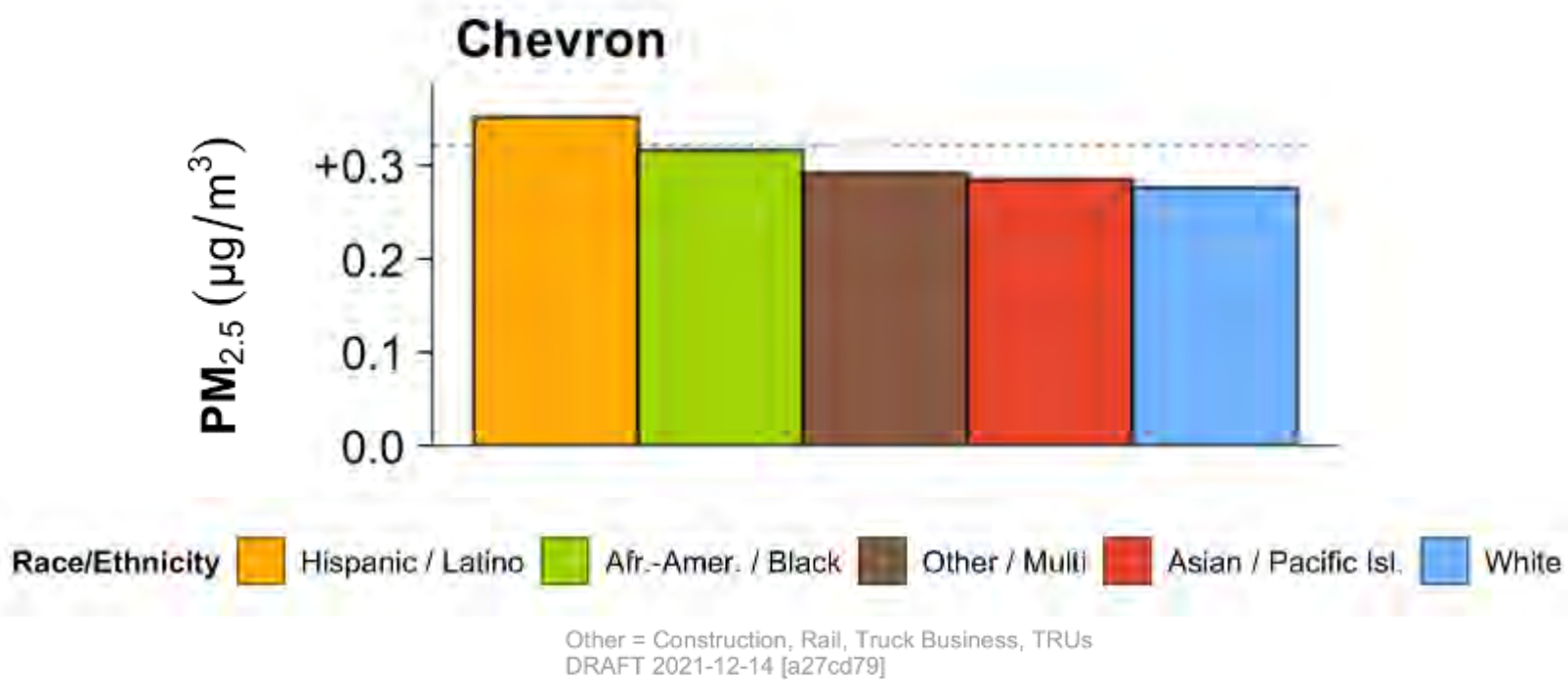
… on **ambient air**
("concentration")



… on **population**
("exposure")



Modeled Residential Impact

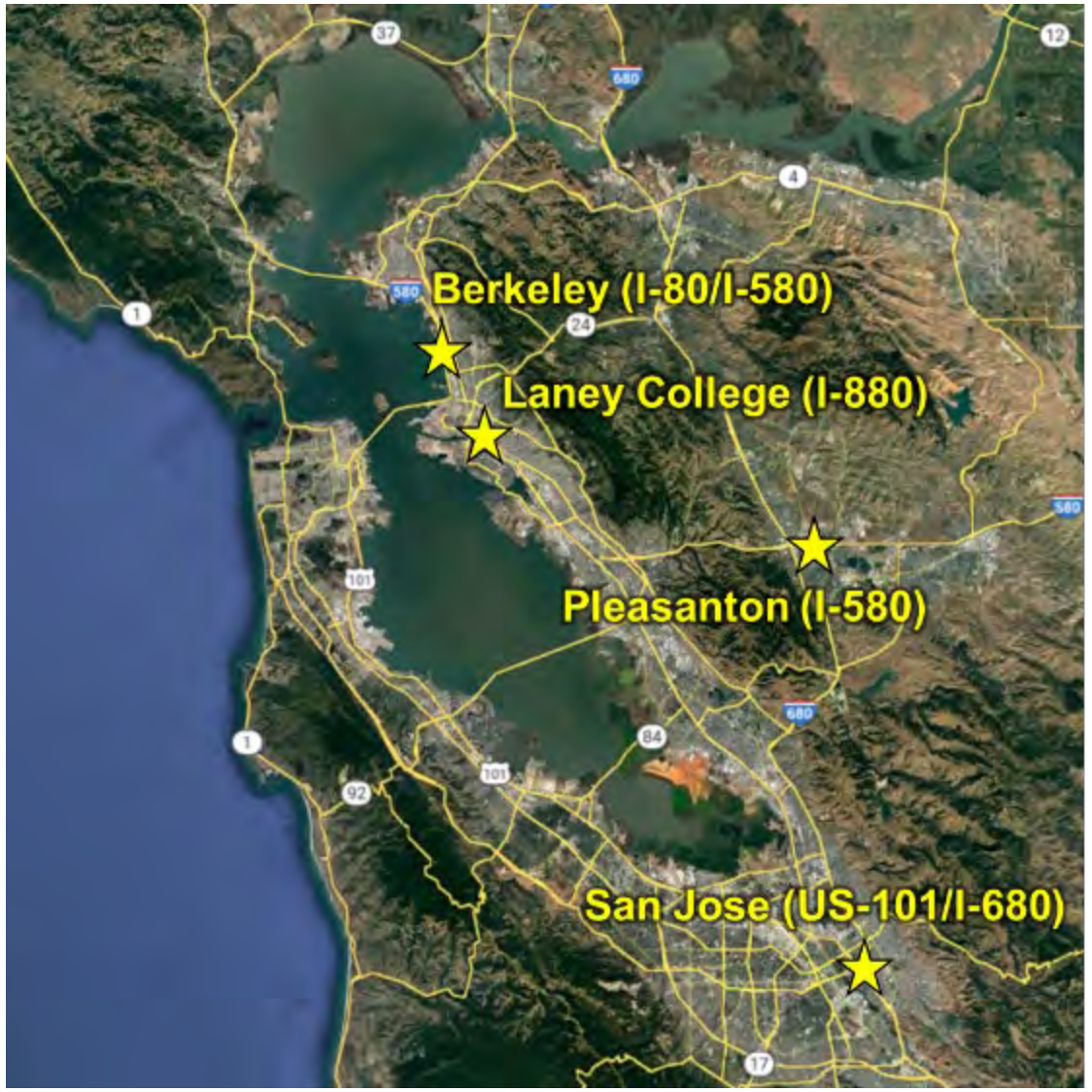


- Bar heights = modeled concentrations for an average R-NR-SP resident of a particular group
- Population data based on 2020 Census
- Dotted lines represent population-weighted averages

Example Key Issue:
On-Road Mobile Sources

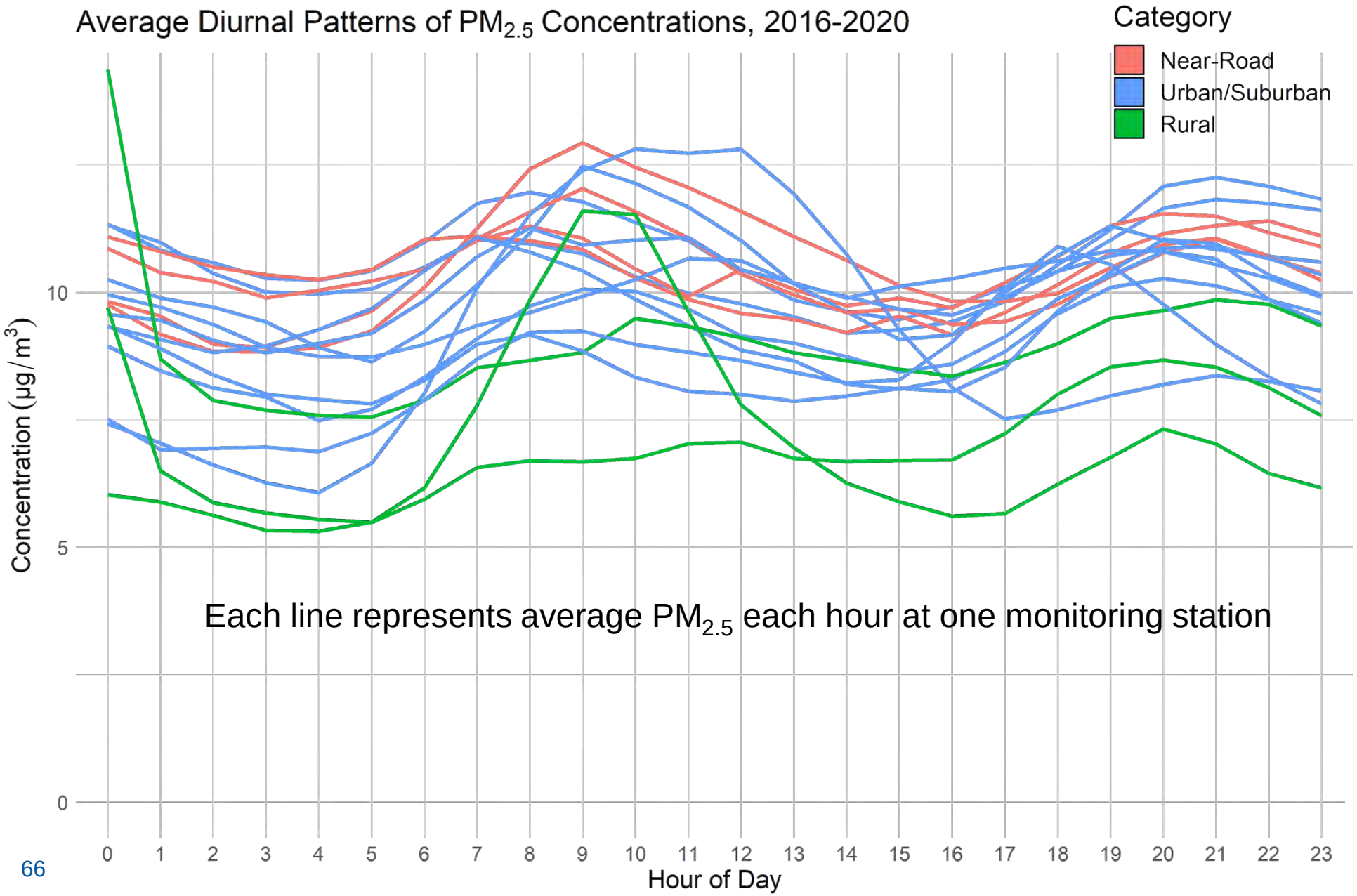
Near-Road Air Quality Monitoring

- Monitoring stations located where maximum impacts from on-road pollution sources are expected
- These monitors are part of a national network of near-road monitors required by U.S. EPA for NO_2, $PM_{2.5}$, and CO



Locations of Air District Near-Road Monitors

Near-Road vs. Other Monitors: $PM_{2.5}$

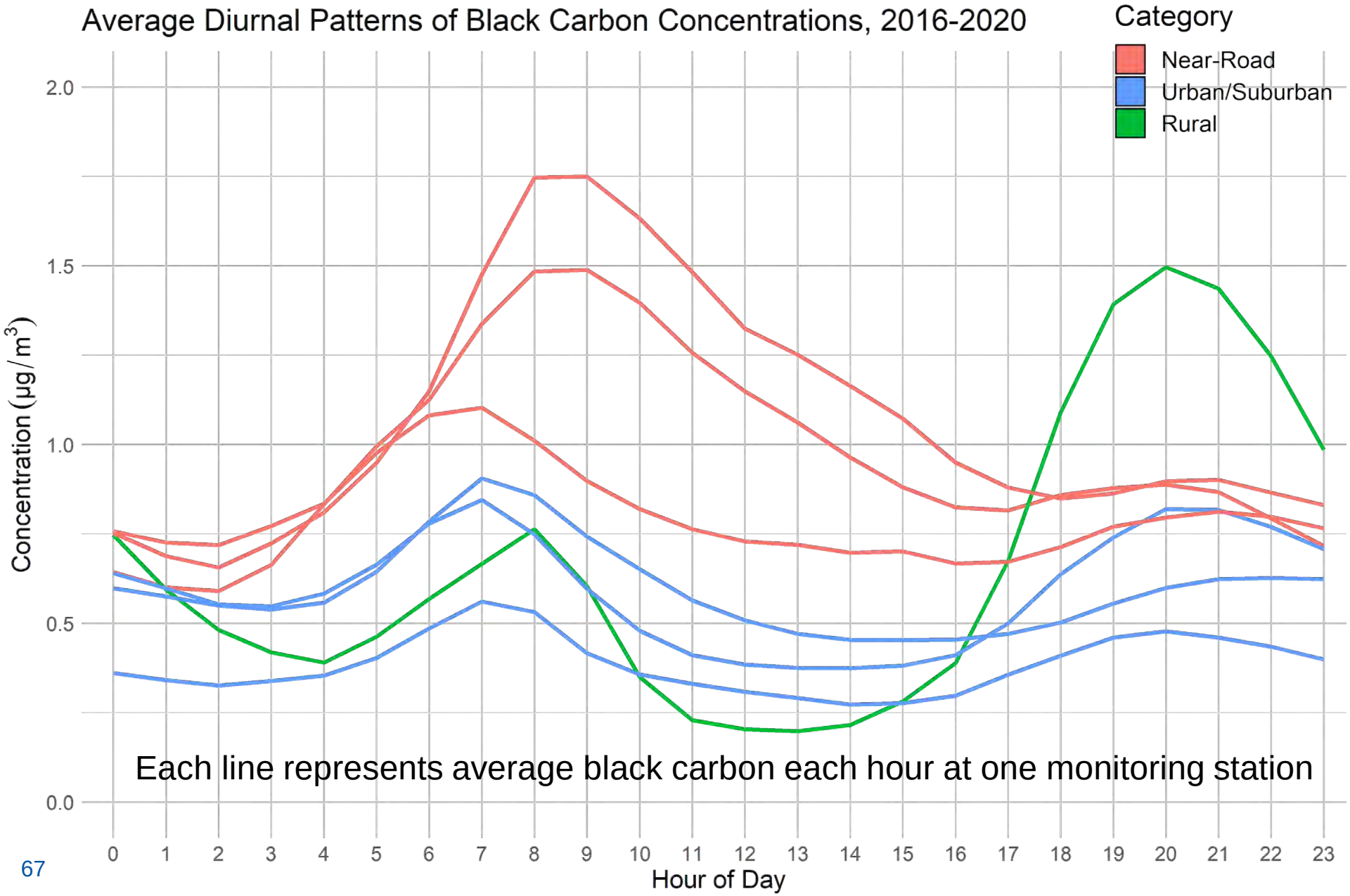


At most stations, $PM_{2.5}$ levels slightly higher in mid-morning and evening

Near-road monitors have similar $PM_{2.5}$ levels to some of the other urban non-near road monitors in the Bay Area

$PM_{2.5}$ also comes from numerous non-road sources, including non-combustion sources and from secondary formation

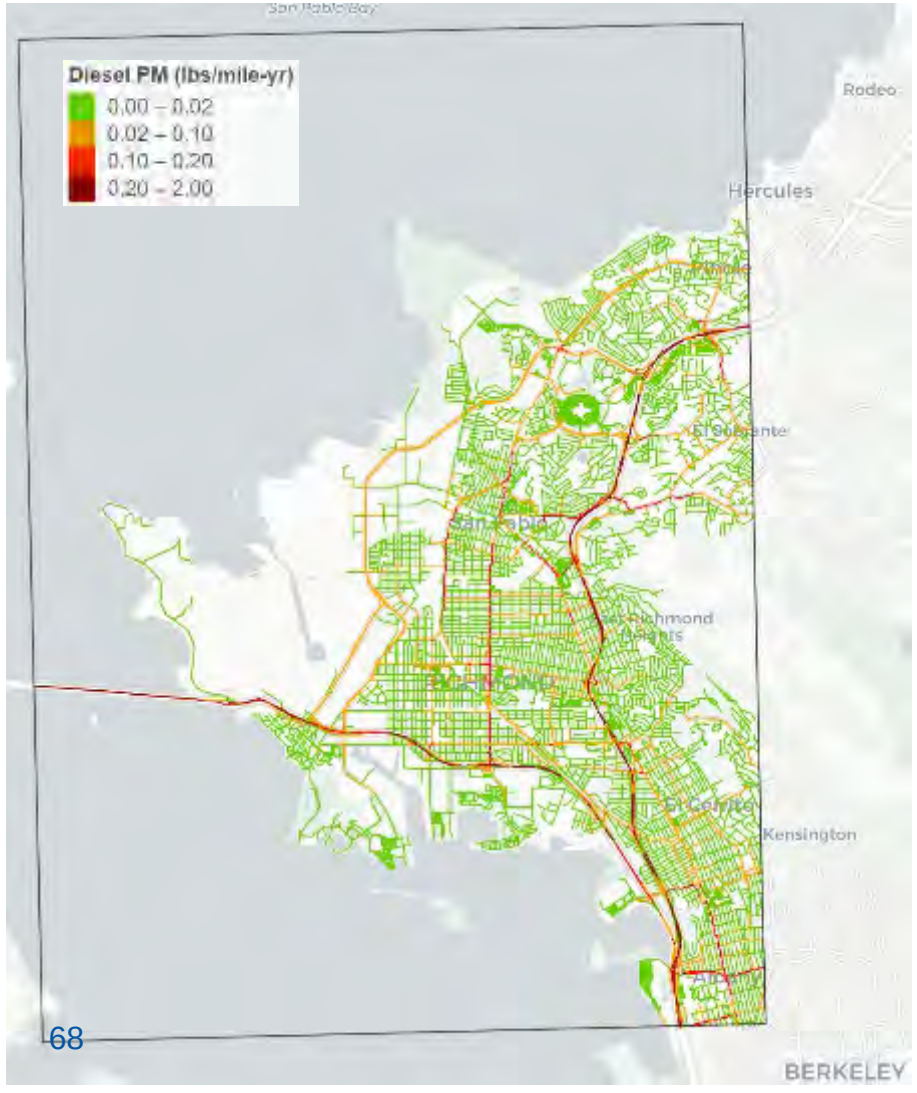
Near-Road vs. Other Monitors: Black Carbon



Black carbon levels generally higher at the near-road stations, with larger peak during morning commute

Some sources of black carbon include diesel and gas engines, wood smoke, wildfires

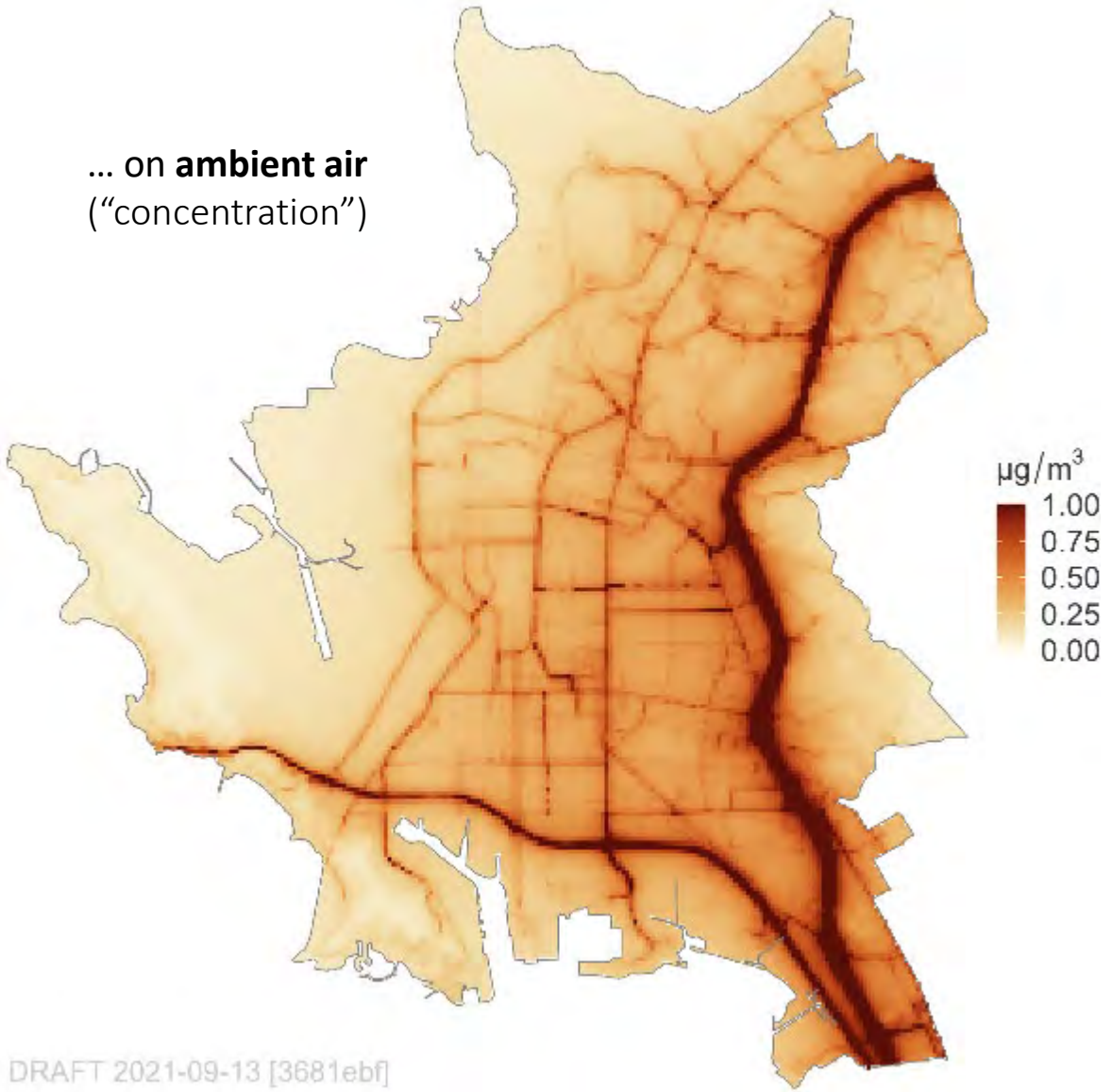
Emissions: How are they estimated?
On-Road Mobile Sources



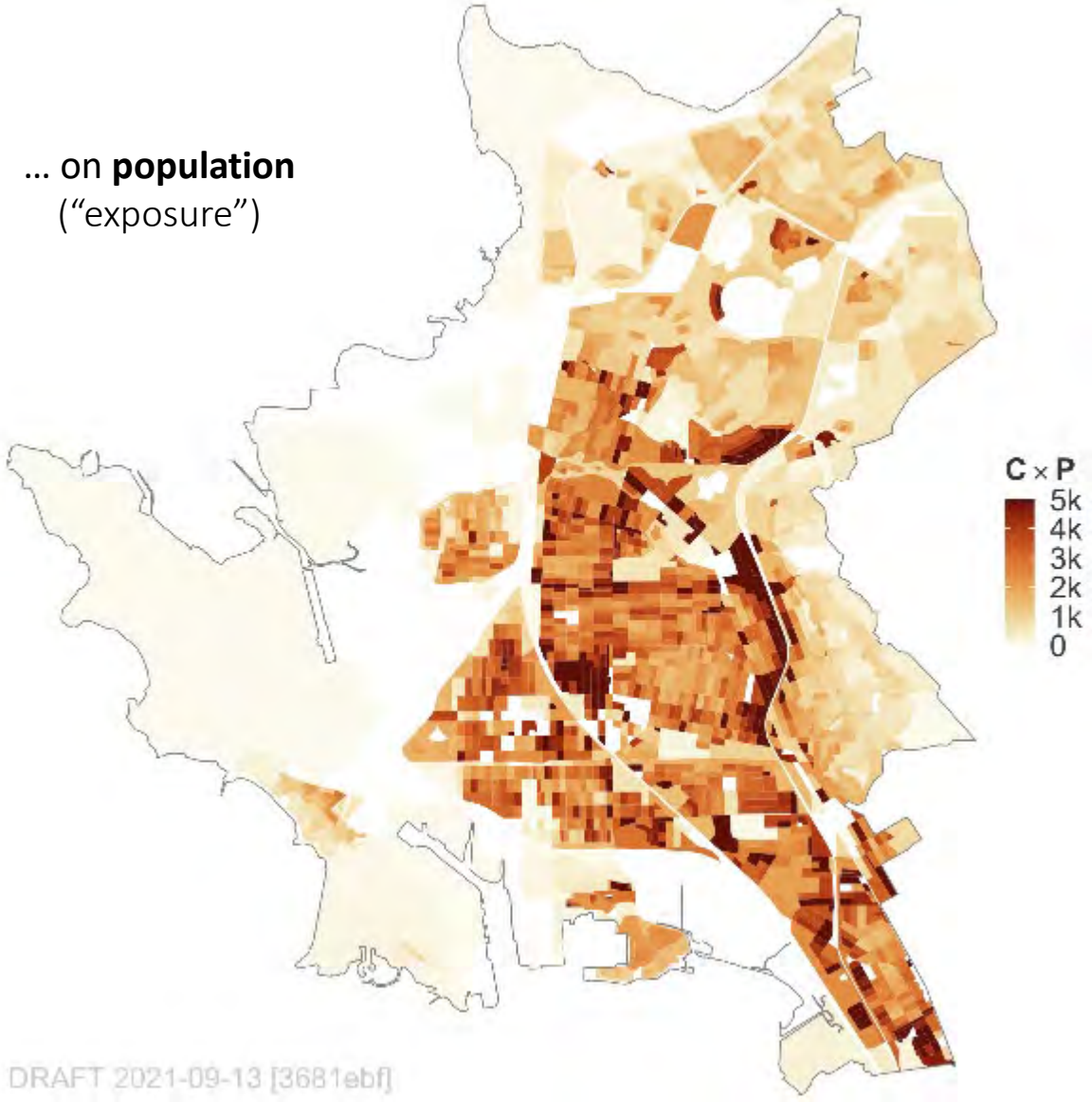
- Emissions calculations combine:
  - *Emissions per mile* from California's EMission FACtors (EMFAC) model
  - *Miles traveled* from Bentley Streetlytics traffic data
- Annualized emissions are estimated at the link (road segment) level
- Emissions can be categorized by mode (e.g., running exhaust, brake wear, road dust), vehicle type, and road type

Illustration: Modeled impacts of $PM_{2.5}$ from on-road sources

… on **ambient air**
(“concentration”)



… on **population**
(“exposure”)



Insights from these Examples

- For a given source, impacts may vary for different neighborhoods and population groups.
- The choice of metric matters. Emissions, concentrations, and exposures may tell different “stories” about relative impacts.
- Grouping and labeling matter. Modeled impacts from individual sources can be grouped based on key issues.
- Measurements can provide more information on how air quality changes over time, for different pollutants, and from sources not captured in modeling.

Next Steps for the Technical Assessment

- The TA Ad Hoc will work over the coming months to
  - Help inform a list of key issues to bring back to the Steering Committee
  - Refine technical analyses and communication regarding community concerns to inform actions to reduce pollution emissions and exposure
  - Provide monthly report-outs on progress
- In March and April, we will bring more detailed insights from technical analyses

Public Comment

Steering Committee Questions and Discussions

Next Meeting

- Our next meeting will be on Monday, February 28, 2022, from 5:30 p.m. to 8:00 p.m.
- Our agenda will include:
  - An initial list of community concerns with key issues framing
  - A presentation on the types of actions that can be used to reduce emissions and exposure, focused on BAAQMD's Planning, Rules, Engineering, Strategic Incentives Division, Technology Implementation Office, and Compliance and Enforcement work

Public Comment on Non-Agenda Matters