Bay Area Air Quality Management District
Steering Committee Meeting#2

April 11, 2019

Bay Area Air Quality Management District

Today's Agenda

I. Welcome, Introductions and Role Call

II. Agenda Review

III. Discussion of Community Co-Leads

IV. Brief Introduction to Measuring Air Quality

V. Capacity-Building on Monitoring Plan Elements

VI. Discussion of Plan Area Boundaries Next Steps

VII. Public Comments

Discussion of Community Co-Leads

Characteristics of the Co-Lead(s)

- Good **listener**
- Keeps people focused
- Speaks **truth**
- **Well-organized** and can keep the group on schedule
- Develops agendas and **documents** key discussion points
- Takes the lead on managing/ compiling the information needed for the Steering Committee to **make decisions**
- Coordinates with influential people in community
- Works **side by side** with the Air District and the third-party facilitator

Roles of the Co-Lead Team

- Provide infrastructure support
- Provide background materials for Steering Committee members
- Develop meeting agendas
- Collaborate with meeting facilitator
- Provide technical support to the Steering Committee
- Participate in weekly planning meetings

Co-Lead Structure Proposed by Community Summit Design Team

- 3 co-leads governed by a partnership agreement
- Co-lead(s) must have a fiscal sponsor for the invoicing process
- Selected process:
  - 1 co-lead already selected; the Steering Committee will select 2 co-leads

DELIBERATION & CONSENSUS

- Quorum:
  - Majority (51%) of **active voting members** are present; and
  - At least a majority (51%) of those present **represent people who live** in the Richmond-San Pablo area.

- Full consensus may not always be possible

- In the event of an impasse, the co-leads and the Air District will be **final decision-makers**

Co-Lead Membership

- How many community members would you like to have on the co-lead team?
  - 3 total
  - 5 total
  - Abstain/ No preference

Co-Lead Nominations

- Randy Joseph
- Nain Lopez
- Naama Raz Yaseef
- Julia Walsh
- Linda Whitmore
- Cesar Zepeda

Voting for Co-Lead Team

- Of the nominated individuals, please select your top choice to serve as co-lead.
  - Randy Joseph
  - Nain Lopez
  - Naama Raz Yaseef
  - Julia Walsh
  - Linda Whitmore
  - Cesar Zepeda

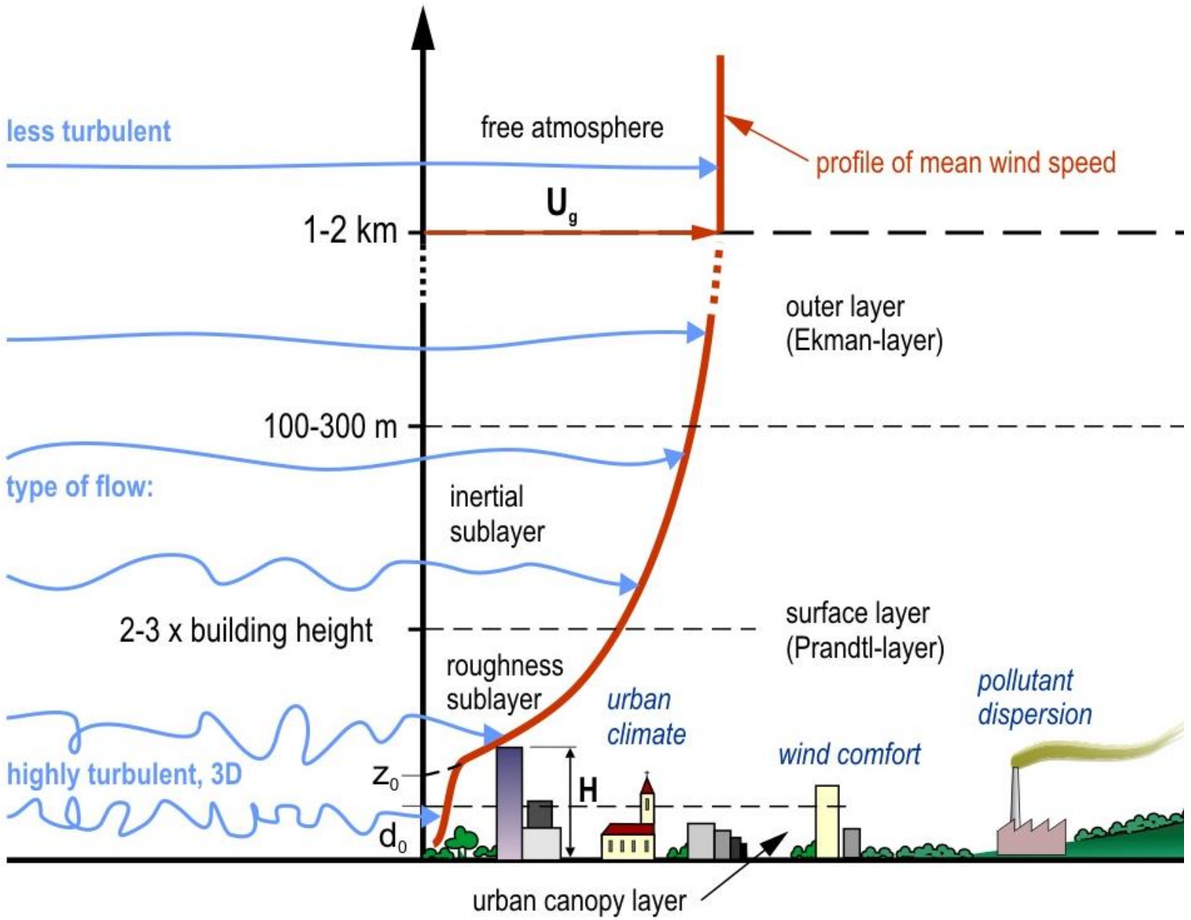
Voting for Co-Lead Team

- Of the remaining individuals, please select your next top choice to serve as co-lead.
  - Randy Joseph
  - Nain Lopez
  - Naama Raz Yaseef
  - Julia Walsh
  - Linda Whitmore
  - Cesar Zepeda

Brief Introduction to Measuring Air Quality

Air Quality

- Measure of how clean and clear of pollutants the air is
- Air quality affects human health, plants, animals, and other resources
- Some pollutants are more hazardous to health than others

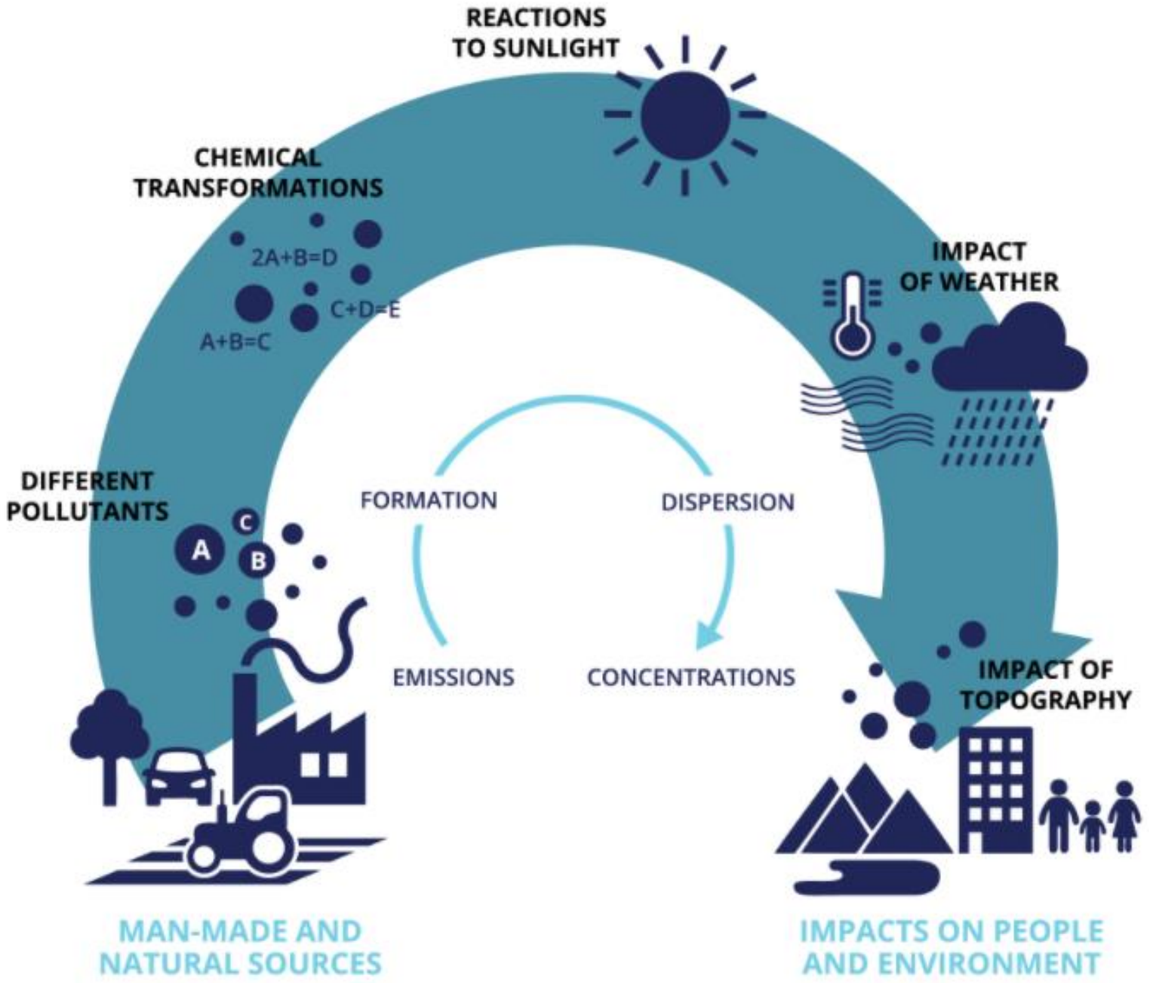


Cropped image from: https://bmeafl.files.wordpress.com/2016/09/jav_hatarreteg_en.jpg

Air Quality

Concentrations of gases and particles in the air vary in time and space due to many factors:

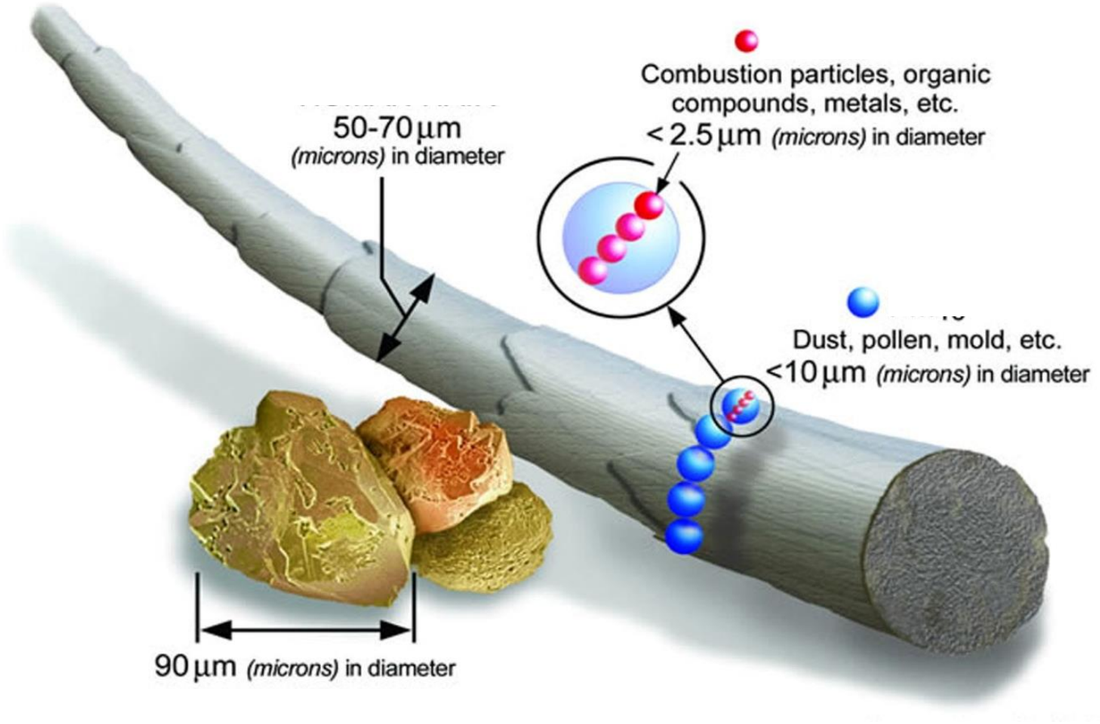
- Emissions from many sources add pollutants to the air
- Chemical reactions can reduce or increase pollution
- Meteorology: Temperature, rainfall, winds, inversions, time of day all affect levels



Source: EEA, 2015, Air Quality in Europe, 2015 Report

Example Air Pollutants

- Criteria air pollutants
  - Gases like Ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2)
  - Particulate Matter, including PM_{10}, $PM_{2.5}$, black carbon, ultra-fine particles, lead
- Toxics
  - Organic gases or particles (e.g., benzene, benzo-a-pyrene, etc.)
  - Metals (e.g., lead, cadmium, etc.)
- Greenhouse gases
  - Carbon dioxide (CO_2), methane (CH_4), etc.

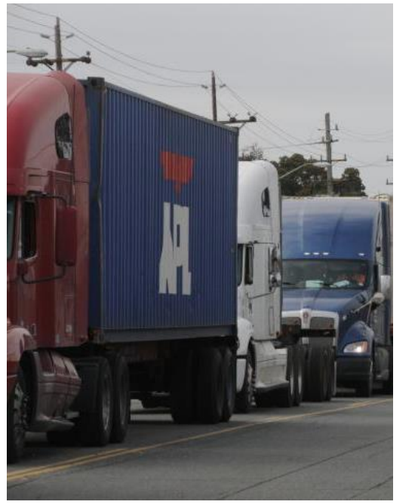


Anthropogenic Sources of Air Pollution

Photo: D.H. Parks

Connecting Pollutant Emissions to Health

Emissions



Ambient Concentrations

Exposure and Dose

Health Effects

So how do we measure air pollution?

Traditional Air Monitoring Sites

Designed to estimate regional population exposure to compare to health-based standards (NAAQS)

- Usually highly accurate measurements
- Long periods of time to incorporate variations in weather, season, and changes in emissions over time
- Well documented methods to anchor other monitoring approaches and track regional air quality
- Cost prohibitive to have a very dense network (spatial gaps)

Screening

Designed to cover large areas to identify “hot spots” for further investigation

- Usually short duration (not for intermittent issues or long-term trends)
- Mobile monitoring, dense sensor networks, remote sensing, etc.
- Available sensors may be limited to certain pollutants

Special Air Monitoring Studies

<u>Designed to investigate areas with suspected issues to understand contribution of various sources</u>

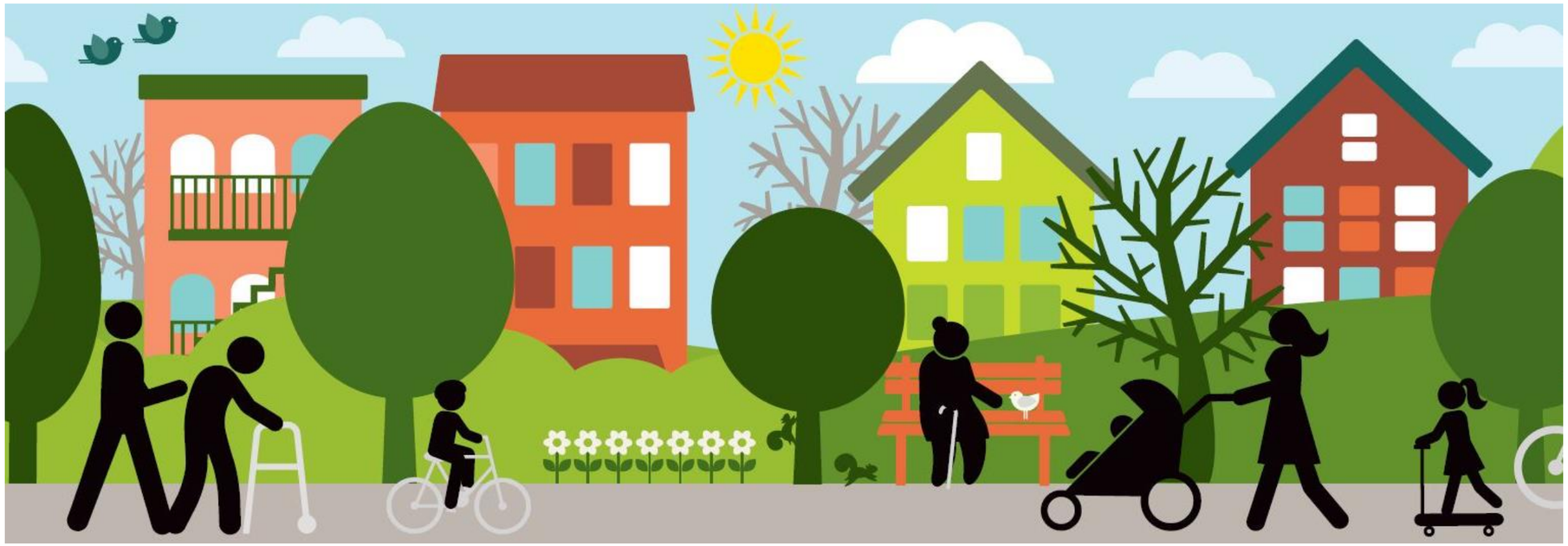
- Usually medium-term duration, using portable/relocatable monitoring systems
- More complex instrumentation can differentiate between different pollutants better, helping tease apart the impacts of several sources on one place

Examples of Factors that Affect Measurements

- Location and obstructions
- Source contributions and distance from those sources
- Meteorological conditions over time and wind flow Topography
- Interferences (e.g., other gases, water vapor)
- Ability to remain in the monitoring location for long periods of time (years to decades)
- Logistics such as power, security, and access

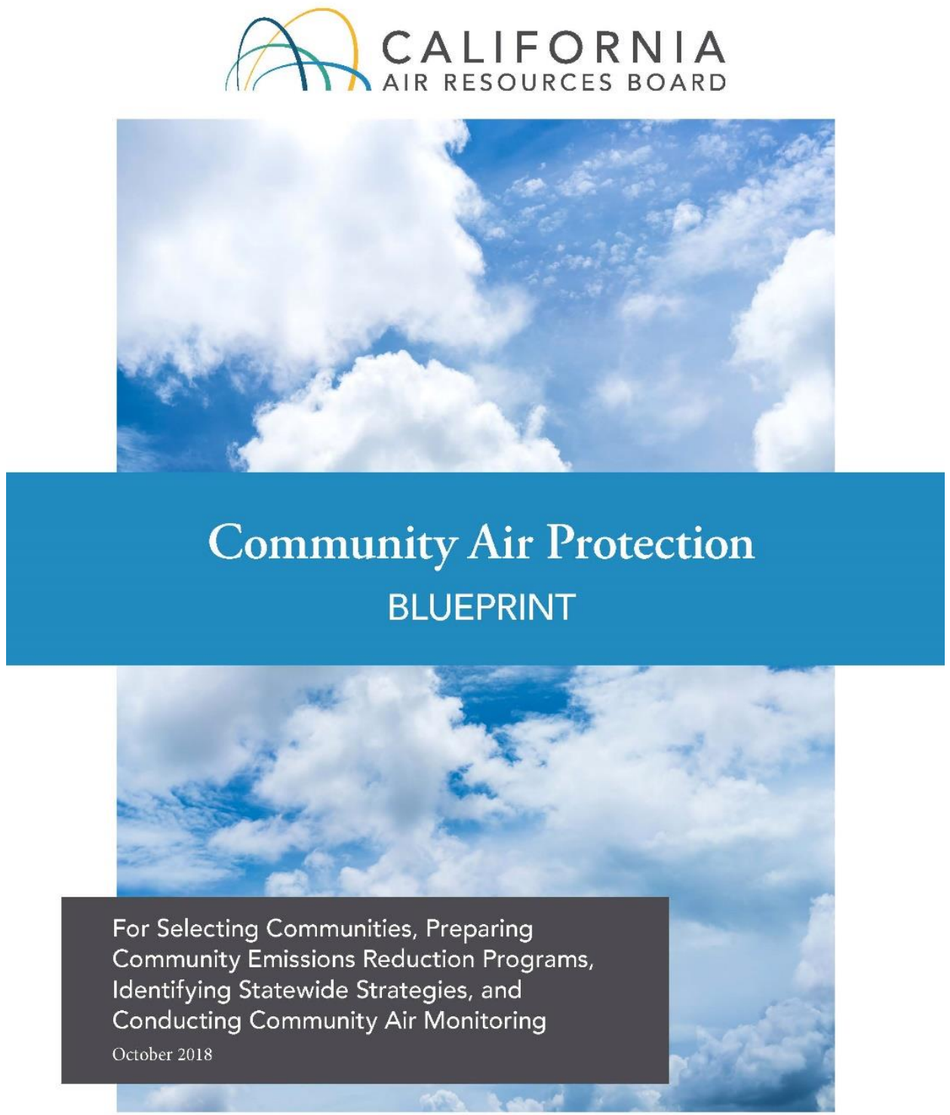
Goal for our Air Monitoring Plan Process

To **match a monitoring approach** (or a combination of approaches) **to the community-specific concern** in a way that maximizes the likelihood that resulting data supports **actions** that decrease air pollution emissions and exposure in your community.



Capacity-Building on Monitoring Plan Elements

Monique Davis, P.E. and Katie George
California Air Resources Board
April 11, 2019

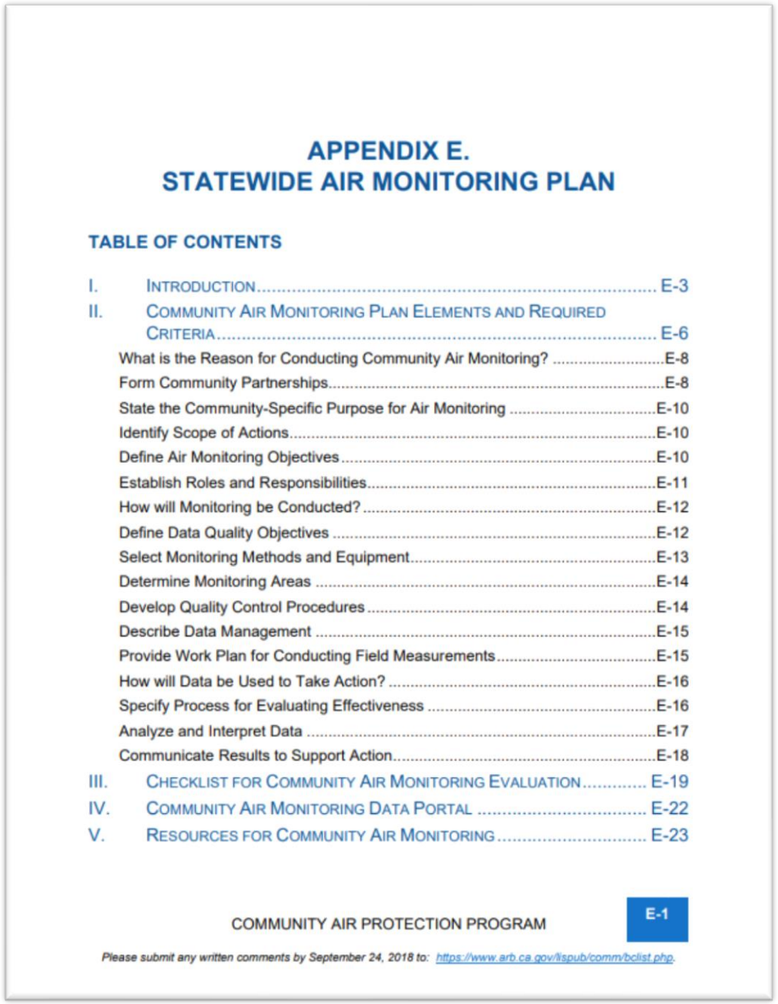


Defines statewide strategies and sets requirements for:

- Public engagement and community partnerships
- Selecting communities
- Conducting community air monitoring
- Developing community emissions reduction programs

https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-protection-blueprint

Appendix E: Statewide Air Monitoring Plan



APPENDIX E.
STATEWIDE AIR MONITORING PLAN

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Please submit any written comments by September 24, 2018 to: https://www.arb.ca.gov/lispub/comm/bclist.php.

- 14 elements
- Guides process of planning action-focused air monitoring
- Provides air monitoring criteria applicable to a wide variety of objectives and approaches
- Table E-2 includes checklists that specify criteria for each element

Community Air Monitoring Plan Elements

What is the reason for conducting air monitoring?	➢ Form community partnerships ➢ State the community-specific purpose ➢ Identify scope of actions ➢ Define air monitoring objectives ➢ Establish roles and responsibilities
How will monitoring be conducted?	➢ Define data quality objectives ➢ Select monitoring methods and equipment ➢ Determine monitoring areas ➢ Develop quality control procedures ➢ Describe data management ➢ Provide work plan for conducting field measurements
How will data be used to take action?	➢ Specify process for evaluating effectiveness ➢ Analyze and interpret data ➢ Communicate results to support action

Element 1: Community Partnerships

- Documents community steering committee involvement
- Fundamental role in designing community air monitoring

MONITORING PLAN ELEMENT 1: FORM COMMUNITY PARTNERSHIPS	
CRITERIA	✓
Identifies community steering committee members and their affiliation.	☐
Documents community steering committee meeting information: • Date of first meeting. • Date, time, number of attendees for all meetings that have been held. • Frequency of future meetings and expected attendees.	☐
Details level of community involvement in planning and resources made available to accommodate community's desired level of involvement throughout implementation.	☐
Provides link to air district webpage dedicated to community air monitoring and documents what will be posted on this webpage.	☐
Identifies dedicated contact person to address questions on the community-specific air monitoring plan.	☐

Element 2: Purpose for Air Monitoring

- Characterize the need for air monitoring
  - *What is/are the air pollution concern(s) in the community?*
- Include background information and introduce pollutants/sources
  - *What information helped identify these concerns?*

MONITORING PLAN ELEMENT 2: STATE THE COMMUNITY-SPECIFIC PURPOSE FOR AIR MONITORING	
CRITERIA	✓
Identifies the community-specific air monitoring need(s).	☐
Provides background information on how the need was discovered.	☐
Documents relevant information from previous, ongoing, and proposed air monitoring and identifies gaps that this community air monitoring will address.	☐
Explores alternative approaches to investigating and addressing the air quality monitoring need(s).	☐

Element 3: Scope of Actions

Defines action(s) that air monitoring aims to support

Inform personal choices (e.g. activity), increase air quality awareness

Evaluate source impacts and identify monitoring gaps

Track progress of community emissions reduction programs

Support enforcement activities, rules and regulations

Element 4: Air Monitoring Objectives

- General objectives:
  - Providing air quality information to inform community members of current conditions.
    - *"What is the real-time concentration of pollutant 'Y' across the community?"*
  - Identifying emissions sources and assessing their impact on air quality.
    - *"What are the ambient air emissions of pollutant 'Y' from industrial source 'Z'?"*
- Answers relevant questions:
  - ❑ What data is needed?
  - ❑ How much data is needed?
  - ❑ Besides pollutant measurements, what other measurements are needed?
  - ❑ What time periods are of interest?
  - ❑ How long should monitoring continue?
  - ❑ Do we have the funds to do this?

MONITORING PLAN ELEMENT 4: DEFINE AIR MONITORING OBJECTIVES	
CRITERIA	**✓**
States the air monitoring objective(s) that will address the stated community-specific purpose for air monitoring.	☐
Specifies the community air monitoring design: • Type(s) of data needed. • Measurements to be made. • Duration of monitoring.	☐
Defines other information necessary to address objective(s), such as: • Supporting measurements (e.g., meteorology). • Action limits, threshold levels, regulatory information. • Data sources to be accessed and used.	☐
Includes reference information and materials (e.g., maps, diagrams, previous studies).	☐

Element 5: Roles & Responsibilities

- Identify all major parties involved with air monitoring
- Contact information for key members
- Can provide organizational chart

MONITORING PLAN ELEMENT 5: ESTABLISH ROLES AND RESPONSIBILITIES	
CRITERIA	✓
Identifies all parties responsible for major aspects or phases of air monitoring (includes contractors).	☐
Clarifies group roles and interactions; specifies training requirements for individuals conducting air monitoring.	☐

Discussion of Plan Area Boundaries

Map Activity Discussion Questions

Are the draft boundaries sufficient or do they need to be revised?

Are there needed revisions to the information displayed?

For example: facilities in the incorrect location, missing sources of air pollution

Are there specific datasets, such as health information, air quality, or demographics, that we should discuss at the next meeting to help develop a list of community specific purposes, a scope of action and monitoring objectives?

Ideas for community specific purposes for air monitoring.

Where do you want to learn more about your air quality and why?

Public Comments

Next Steps

Next Steps

- Next Steering Committee meeting:
  - **May 15, 2019, 6-8 pm**
  - Richmond Memorial Auditorium, Bermuda Room

- **RSVP** for the May 15th meeting by **May 8th**
  - https://forms.gle/aWV3ou4JufEbeMPFA

Steering Committee Meeting Schedule

- May 15, 6:00 – 8:00 pm
- June 19, 6:00 – 8:00 pm

- July 10, 6:00 – 8:00 pm
- August 14, 6:00 – 8:00 pm
- September 11, 6:00 – 8:00 pm

- October 9, 6:00 – 8:00 pm
- November 13, 6:00 – 8:00 pm
- December 11, 6:00 – 8:00 pm

To view Steering Committee agendas, minutes and PowerPoint presentations online, visit:

http://bit.ly/Richmond-SanPablo-CommunityHealth

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April 11, 2019

Bay Area Air Quality Management District

Extra Deck

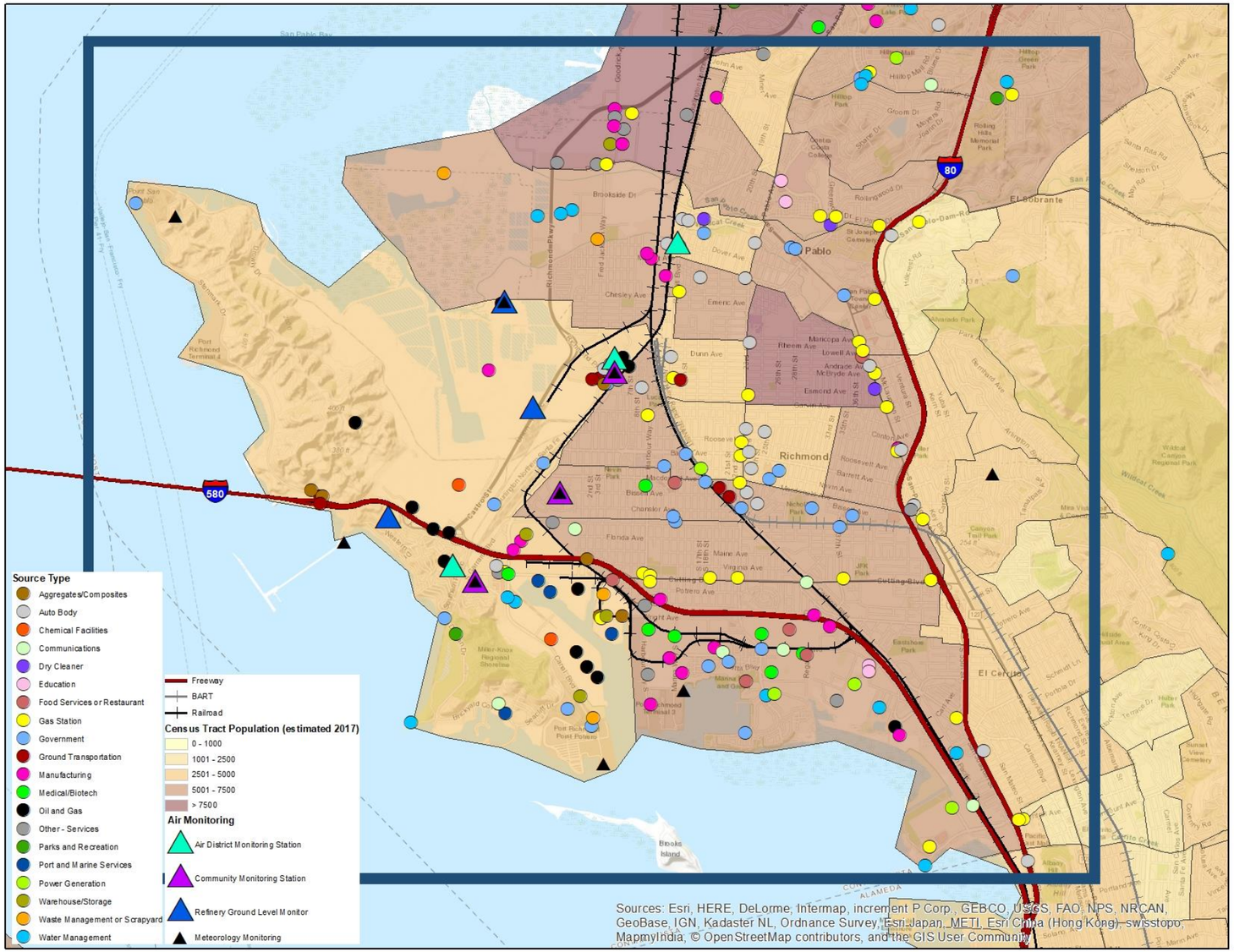
Deliberation and Consensus

The Six Levels of Agreement include:

1. I can say an **unqualified "yes"** to the recommendation.
2. I find the recommendation **acceptable**. It appears to be the best of the real options available to us at this time.
3. I can **live with the recommendation**, although I am not especially enthusiastic about it.
4. I do not agree with the recommendation, but I am **willing to live with it** so the process can move forward.
5. I do not agree with the recommendation and I would like the Steering Committee to do more to see if we can **reach a higher level of agreement**.
6. I do not agree with the recommendation and I will **work actively to oppose** it.

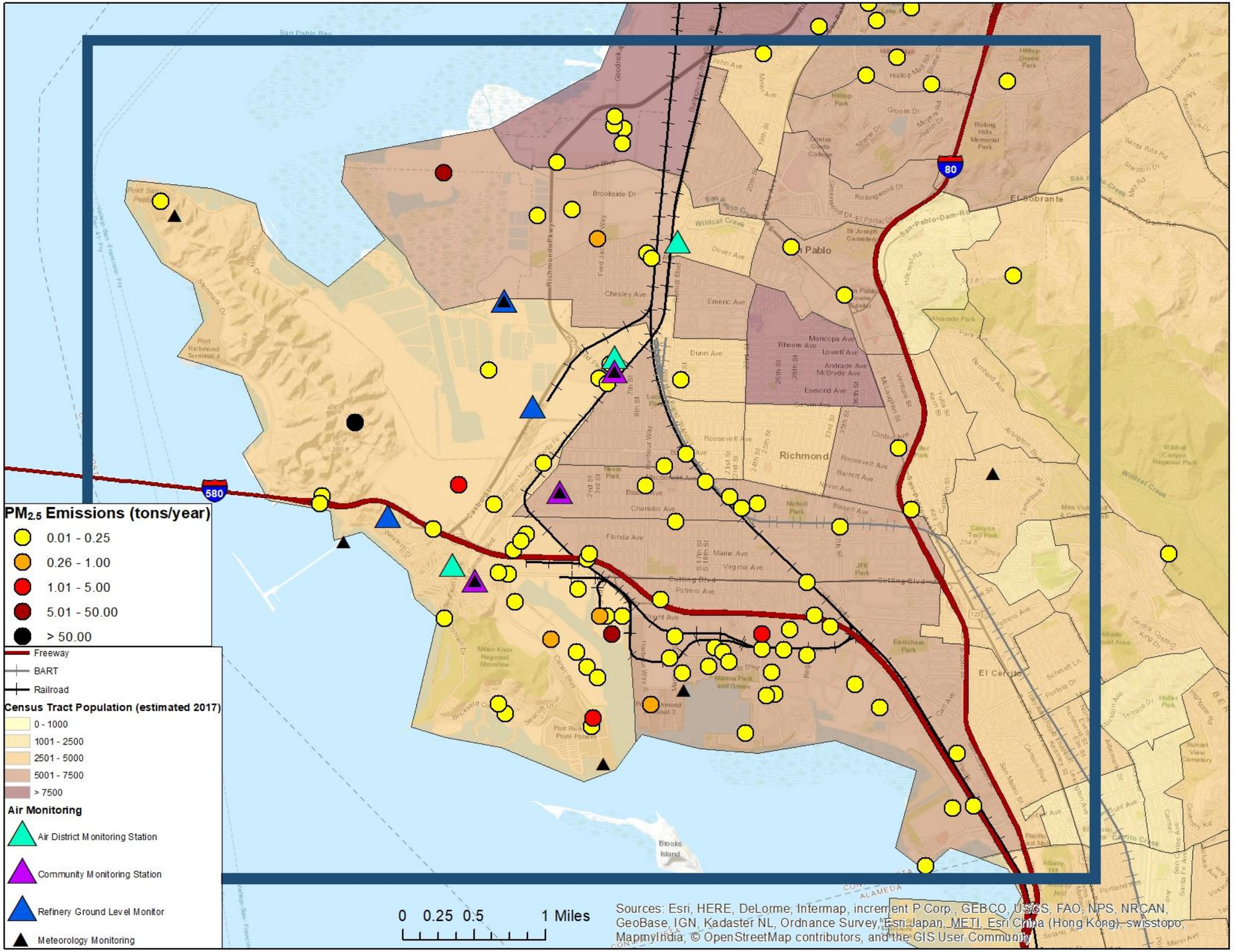
What data is shown on the large maps

- Base layers
  - Proposed boundary
  - Population by census tract
  - Operational monitoring sites
- Permitted sources, colored by source type



Emissions of particulate matter less than 2.5 microns ($PM_{2.5}$)

This map shows the level of direct $PM_{2.5}$ emissions from each source.



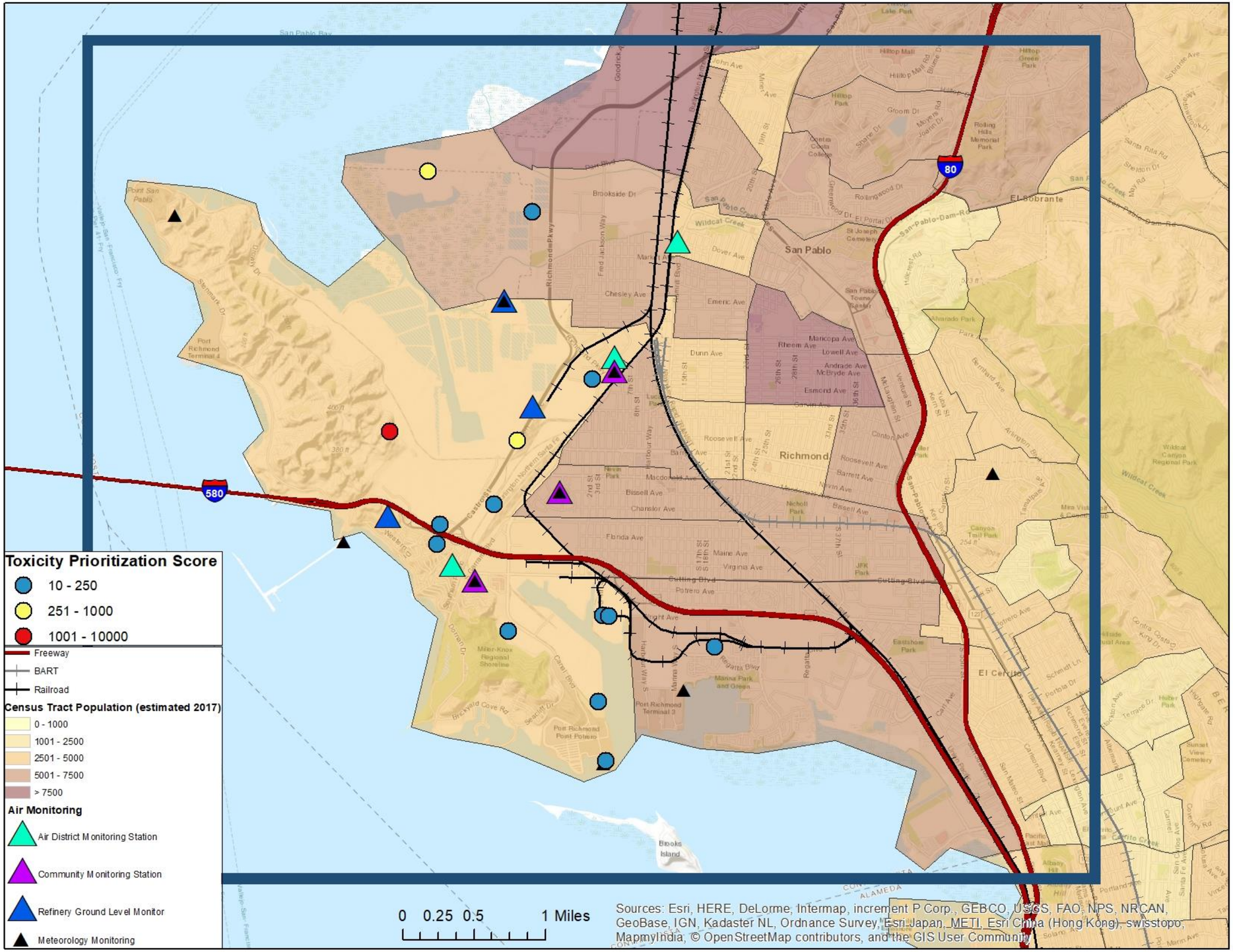
Toxic Air Contaminant (TAC) Emissions

This map shows a subset of sources with the highest **toxicity prioritizations scores**

Sources with prioritization scores <10 not shown

This score combines the amount and toxicity of each TAC emitted by a source into one score. More information about this is in our Rule 11-18:

http://www.baaqmd.gov/rules-and-compliance/current-rules/regulation-11-rule-18

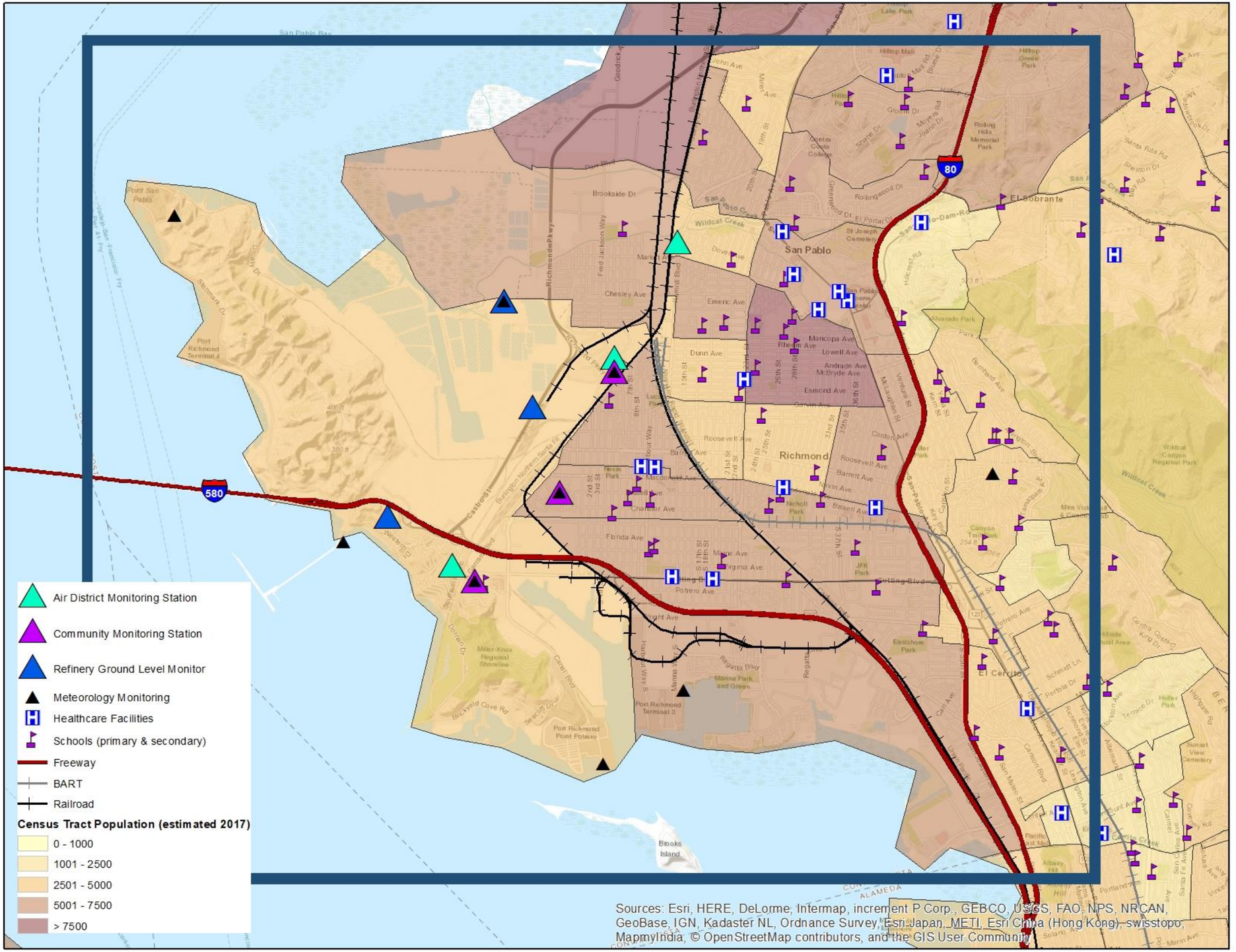


Source proximity to sensitive receptors

One example of sensitive receptor data: schools and hospitals.

Can also get race, age, and other information about demographics in addition to population number.

Other data sets are also possible, including health burden, that increases susceptibility to the effects of air pollution.



Other information we can review

- **More data on mobile sources (cars, trucks, rail, ships)**
- **Sensitive receptors (where people are that are particularly vulnerable to the health affects of air pollution)**
- **Health data**
- **Air quality data from BAAQMD or Chevron sites**
- Air quality data from currently operated sensor networks (BEACON, PurpleAir)
- Air quality data from previous research studies
- Information about specific types of sources
- Compliance and Enforcement information on complaints or violations

General topics we can bring information on to the Steering Committee

- More information about different types of PM or toxic air contaminants, and where they come from
- Health effects of different pollutants
- **Types of specific air monitoring instrumentation**
- Information about specific types of sources
- Source testing and how we monitor facility/source emissions
- Compliance and Enforcement

Discussion Questions

- **Are the draft boundaries sufficient or do they need to be revised?**
- **Are there needed revisions to the information displayed?**
  - **For example: facilities in the incorrect location, missing sources of air pollution**
- **Ideas for additional datasets to visualize for future discussions?**
  - **For example: health burden, population density or sensitive receptors, enforcement information**
- **Ideas for community specific purposes for air monitoring. (Where do you want to learn more about your air quality and why?)**

Additional information

Will send out after meeting:

- Links to information about stationary source emissions
- Links to information about monitoring sites and data

Air Monitoring in Richmond / San Pablo

Organization	Station	Parameters Measured
Air District	Richmond – 7th Street	SO_2, H_2S, Air Toxics
	Point Richmond	H_2S
	San Pablo	O_3, CO, NO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, Air Toxics
	Point San Pablo	Meteorology
Refinery Ground Level Monitoring	Chevron Castro	SO_2 and H_2S
	Chevron Golden Gate	SO_2 and H_2S
	Chevron Gertrude	SO_2, H_2S, and Meteorology
Richmond Fenceline Monitoring	Along Chevron Fenceline	Benzene, Carbon Disulfide, H_2S, Ozone, SO_2, Toluene, Xylene, Meteorology
Richmond Community Monitoring	Atchison Village	Ammonia, Benzene, Ethylbenzene, Heptane, Hexane, Octane, Trimethylbenzene, Trimethylpentane, Methylpentane, H_2S, $PM_{2.5}$, Meteorology
	North Richmond	
	Point Richmond	
$BEACO_2N$ (UC Berkeley)	Several stations in/near Richmond	CO_2, CO, NO_2, O_3, Particle Number (≥0.5 µg)
	Richmond Field Station	CO_2, CO, NO_2, O_3, Particle Number (≥0.5 µg), Methane, Upper-Air Meteorology