

Community Air Initiatives

San Bernardino Muscoy Community Steering Committee Meeting #2

*Thursday, January 17, 2019
Muscoy, CA*



Meeting Roles and Expectations

CSC Purpose: To guide strategies for community air monitoring and emissions reduction plans for this AB 617 community, and track progress on community plans.

Meeting Participant Roles*

SCAQMD	Note taker	Co-host	Committee members
<ul style="list-style-type: none"> Organize meeting logistics Provide agenda and meeting materials Present key information Address committee concerns and answer questions 	<ul style="list-style-type: none"> Take notes Prepare a summary and post it online 	<ul style="list-style-type: none"> Help facilitate discussions Help SCAQMD staff review materials Help SCAQMD staff with meeting logistics 	<ul style="list-style-type: none"> Provide input on discussion items Provide prompt feedback and response (e.g. filling out surveys, replying to emails, etc) Engage with other committee members and members of the public Serve as a liaison to your networks within the community Provide suggestions on how to improve this process

* Based on feedback from the CSC members, we are working on getting a facilitator

Expectations:

- Presenters will be concise
- Everyone should help us stay on time by staying on topic
- **Aim to build consensus**

Where we are now

Where we are going



Identify Community Air Quality Concerns

- Committee Input
- Technical Data

Oct 2018-
Jan 2019



Prioritize Sources of Emissions and Areas with High Exposure Concerns

- Target areas/pollutants for air monitoring
- Target sources/places for emissions or exposure reduction

Jan 2019-
Mar 2019



Develop Strategies to Reduce Emissions and Exposures and Metrics for Tracking Progress

- Community Air Monitoring Plan
- Community Emissions Reduction Plan

Mar 2019-
Oct 2019

Today's Meeting Objectives

- Provide summary of air quality concerns and complete discussion on community boundaries
- Provide information on air monitoring, and ideas for air monitoring through AB 617
- Prepare for next steps (prioritize air quality issues and develop strategies to address them)
- Follow up on committee logistical items

**Air Quality Concerns
and Community
Boundaries**

Recap: How were Year 1 AB 617 communities identified?

We first **identified communities using a broadly inclusive approach.**

Preliminary list includes each of the following:

- (1) **Top 25%** of MATES IV air toxics cancer risk
- (2) **Top 25%** of CalEnviroScreen 3.0 score
- (3) Community nominations (148 nominations received through 5/17/2018)
- (4) Communities with the highest density of schools within 1,000 feet of industrial land use

CalEnviroScreen 3.0 (OEHHA)

Pollution Burden

Exposures



Ozone



PM2.5



Diesel PM



Pesticide Use



Traffic



Drinking Water Contaminants



Toxic Releases from Facilities

Environmental Effects



Solid Waste Sites and Facilities



Cleanup Sites



Groundwater Threats



Impaired Water Bodies



Hazardous Waste Generators and Facilities

Population Characteristics

Sensitive Populations



Asthma



Cardiovascular Disease



Low Birth-Weight Infants

Social and Economic Factors



Poverty



Unemployment



Educational Attainment



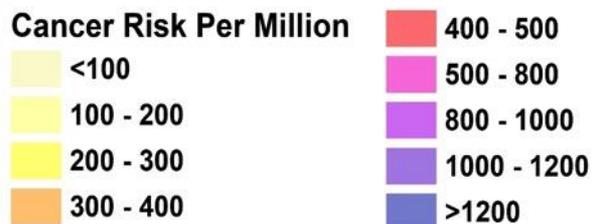
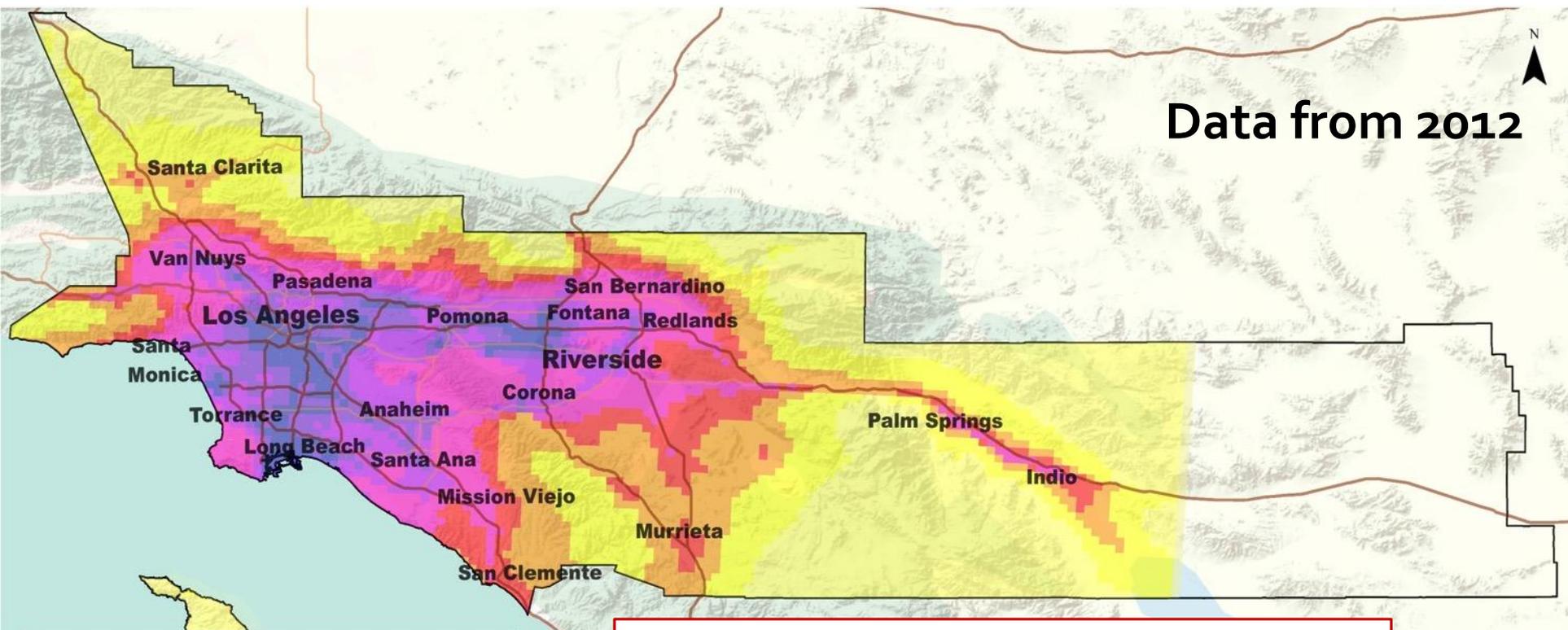
Linguistic Isolation



Housing Burdened Low Income Households

OEHHA:
Office of
Environmental
Health Hazard
Assessment
(State agency)

Multiple Air Toxics Exposure Study (MATES IV)

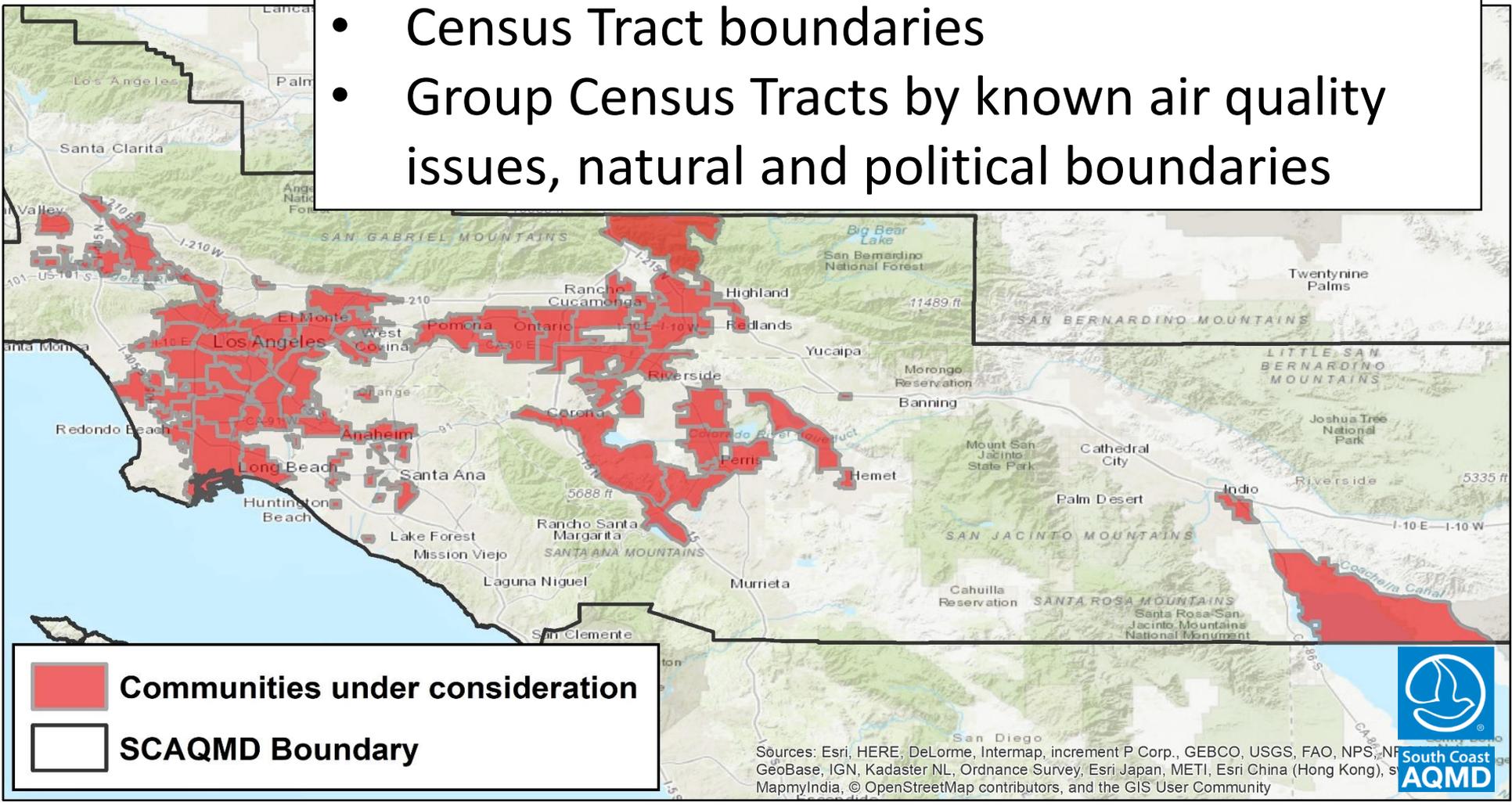


Main findings:

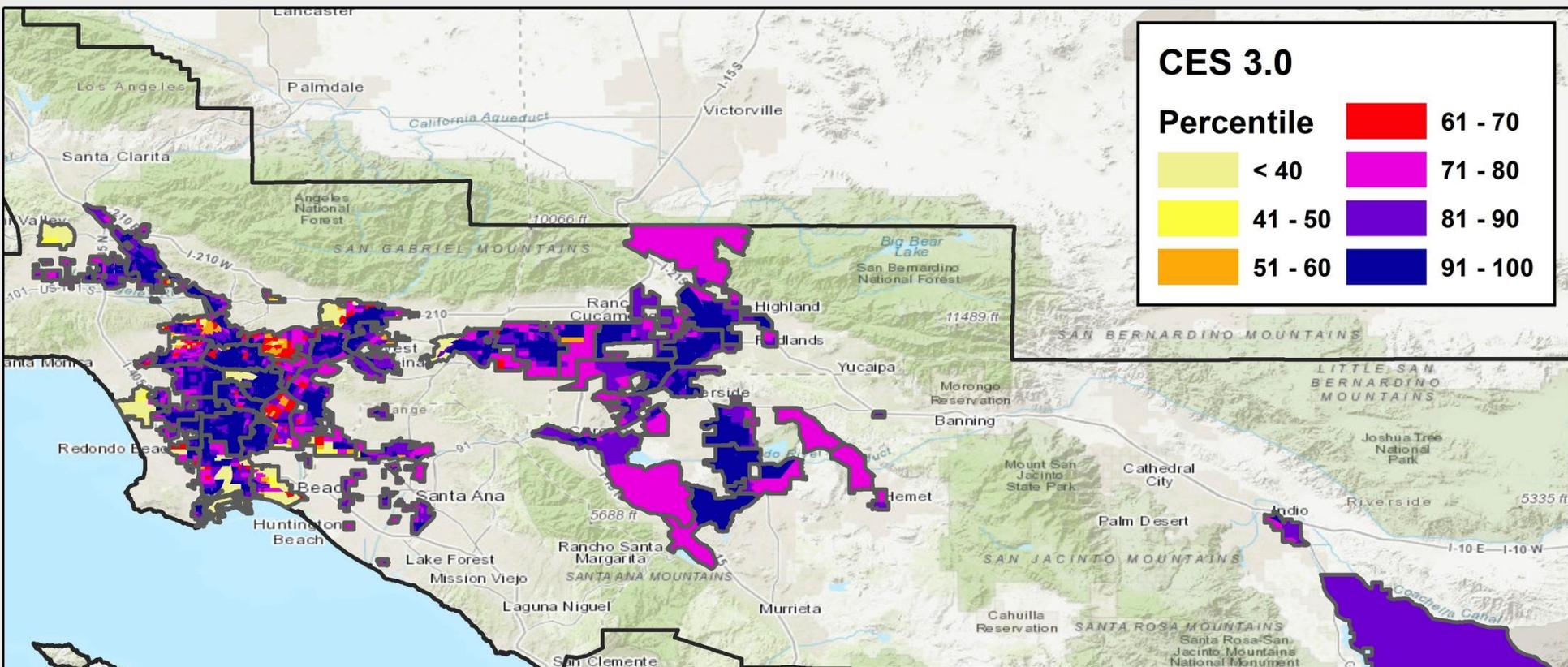
- Diesel Particulate Matter (PM) accounted for 2/3 of air toxics cancer risk
- Ports (ships), rail yards and goods movement corridors (trucks) are large sources of diesel PM

Map of communities under consideration for AB 617

- 55 communities identified in SCAQMD
- Census Tract boundaries
- Group Census Tracts by known air quality issues, natural and political boundaries



CalEnviroScreen 3.0 ranking in communities under consideration



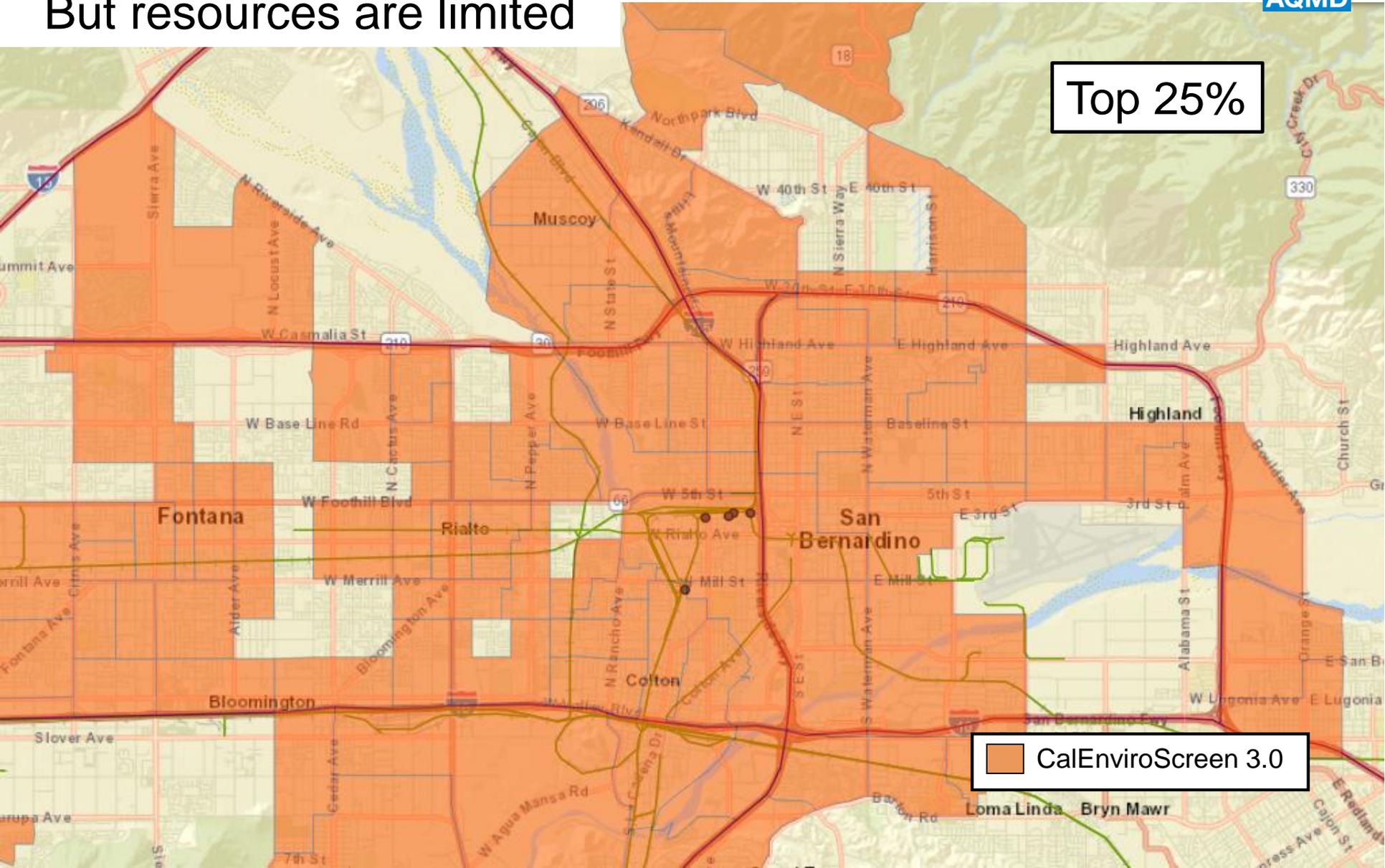
CES 3.0

Percentile		Color	Range
< 40		Light Yellow	< 40
41 - 50		Yellow	41 - 50
51 - 60		Orange	51 - 60
61 - 70		Red	61 - 70
71 - 80		Magenta	71 - 80
81 - 90		Purple	81 - 90
91 - 100		Dark Blue	91 - 100

CalEnviroScreen considers pollution burden, environmental effects, sensitive populations as well as social and economic factors

Many disadvantaged areas

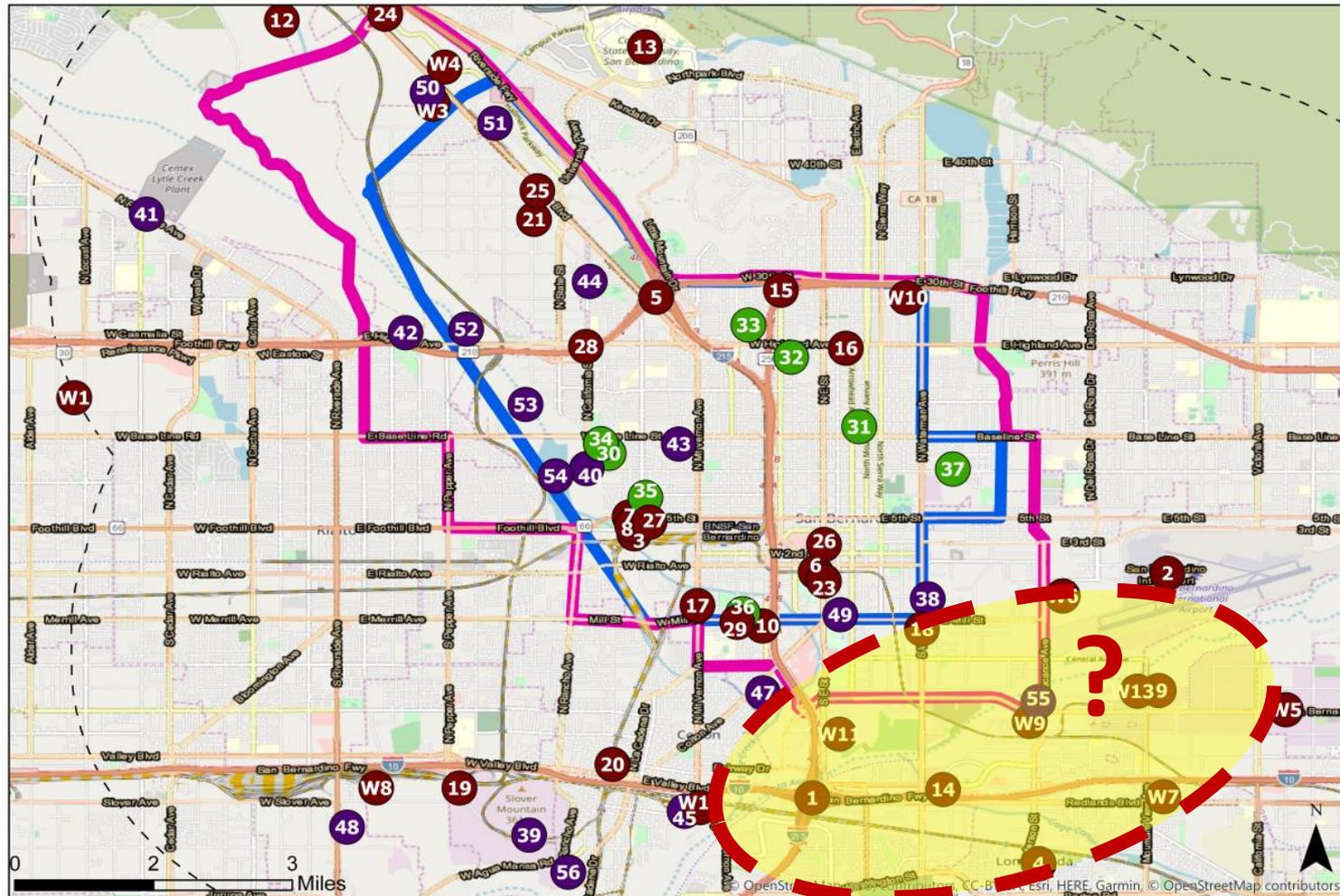
But resources are limited



Top 25%

CalEnviroScreen 3.0

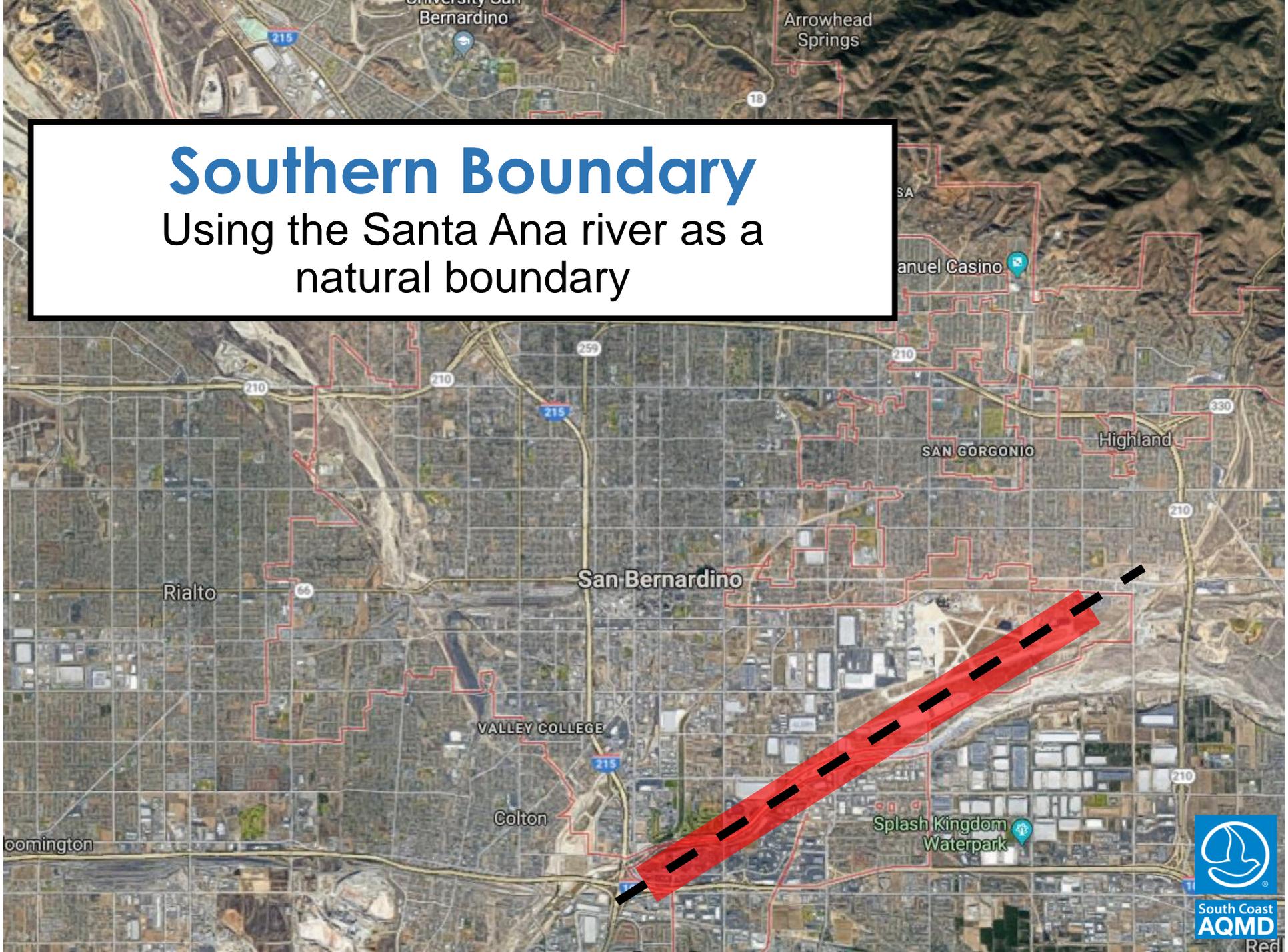
Community-Identified Air Quality Concerns - Map



- Community Impacted Area
- Emissions Study Area
- Mobile Source
- Stationary Source
- Sensitive Receptor

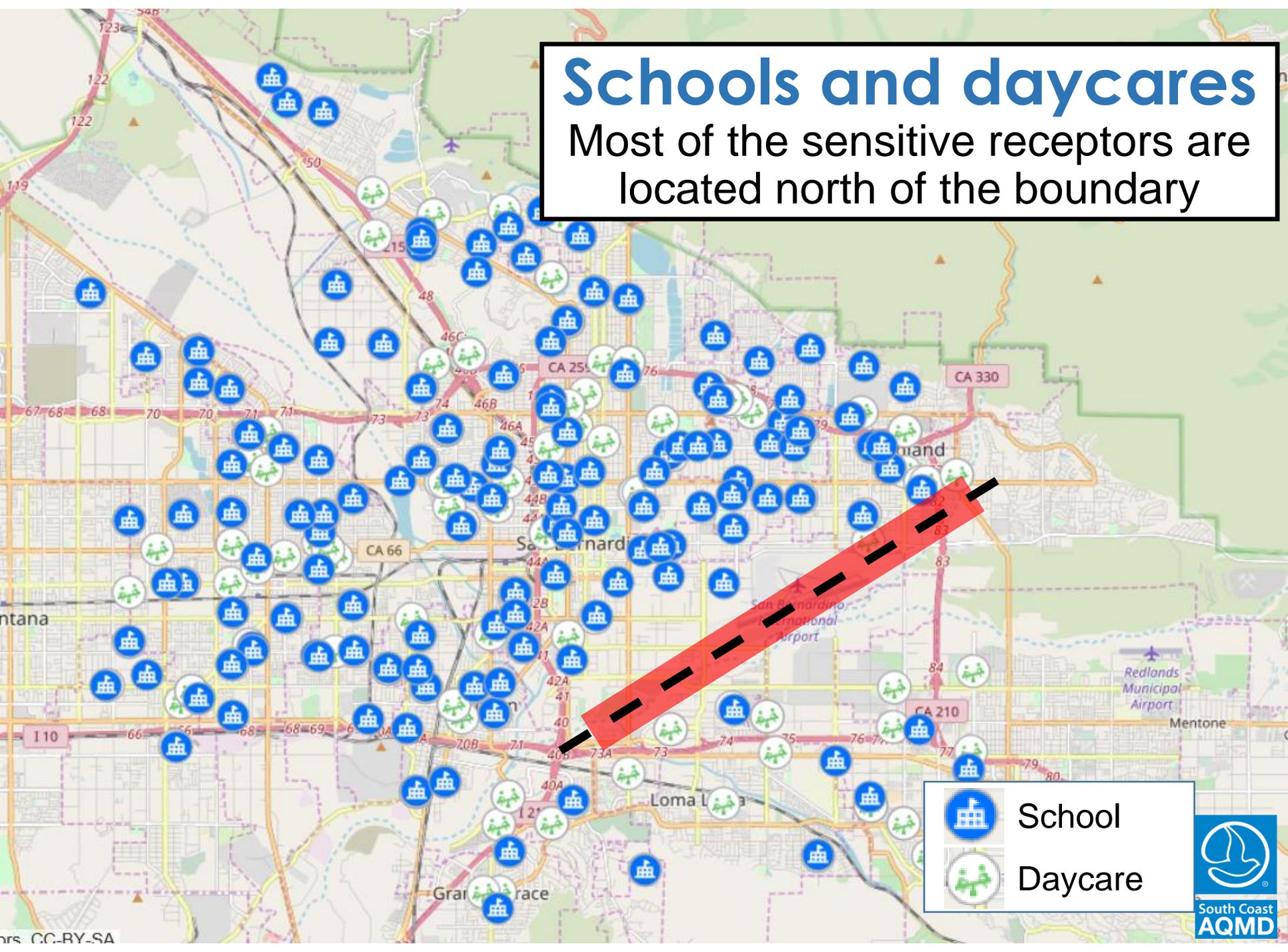
Southern Boundary

Using the Santa Ana river as a natural boundary



Schools and daycares

Most of the sensitive receptors are located north of the boundary

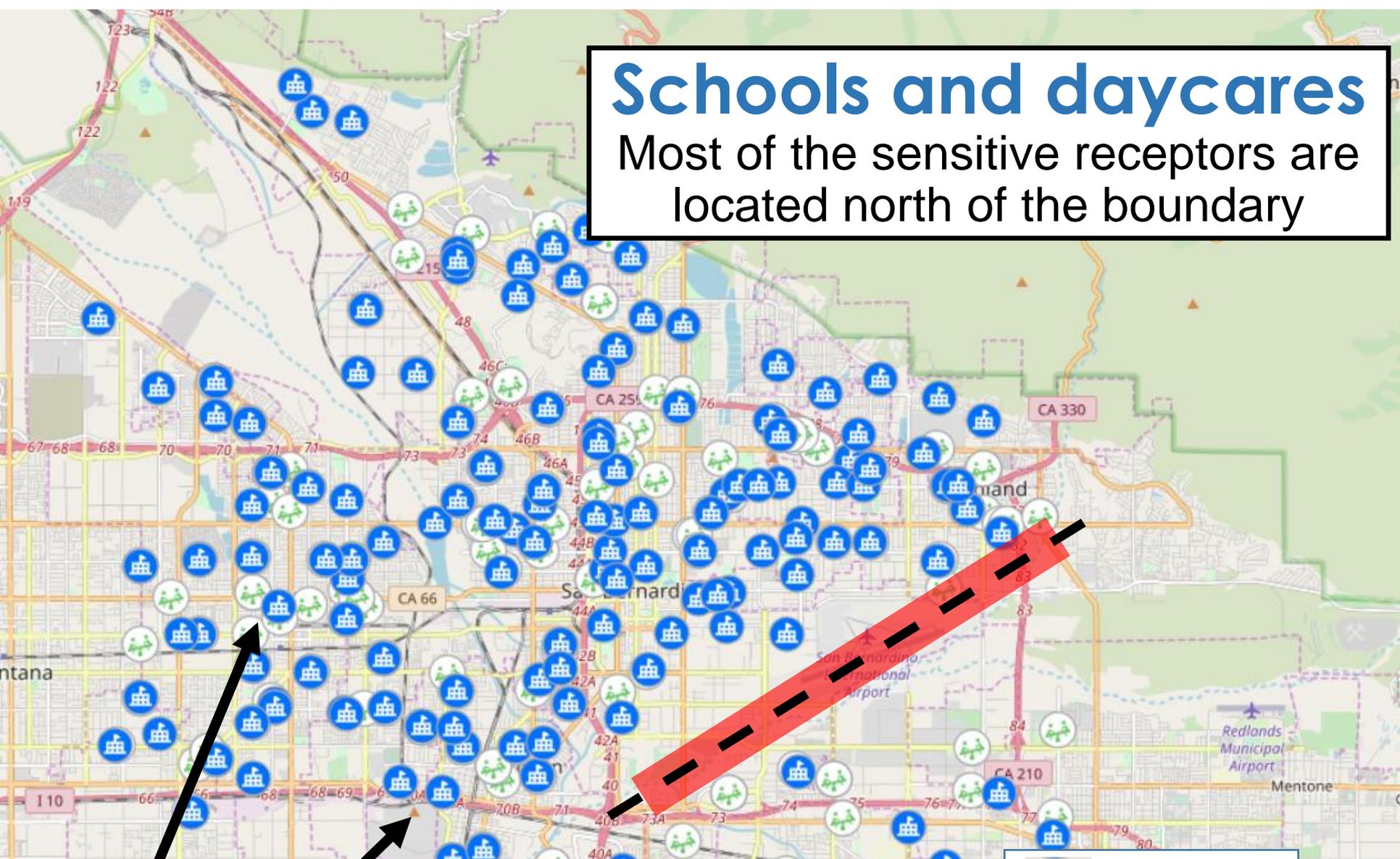


 School
 Daycare



Schools and daycares

Most of the sensitive receptors are located north of the boundary



Rialto, Colton & some portions of South San Bernardino will be considered in **year 2-5** of program implementation

	School
	Daycare



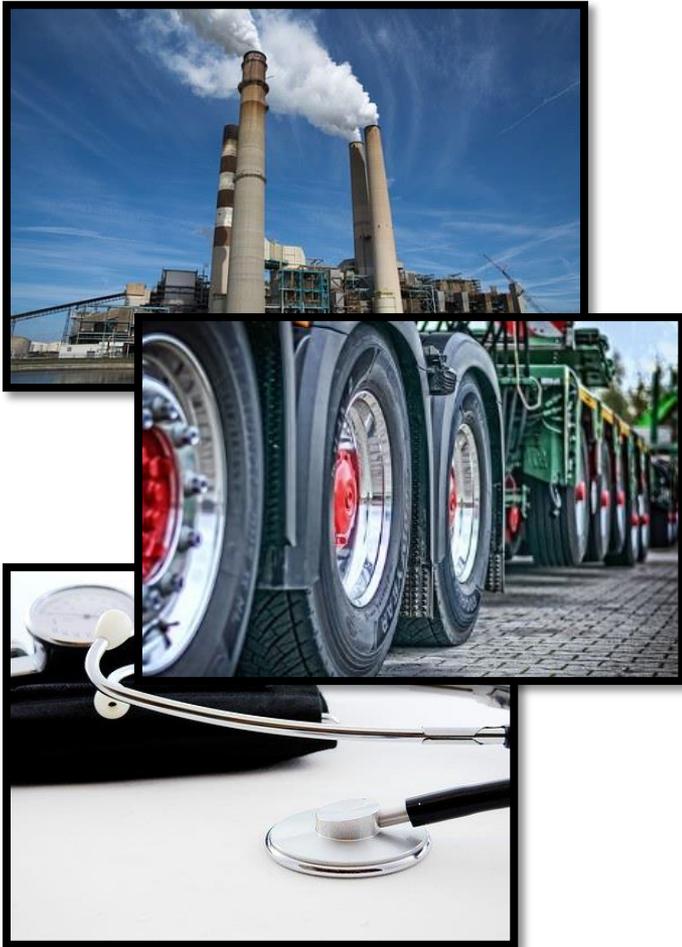
For more details...

- SCAQMD recommendations to CARB for Year 1 communities and implementation schedule: <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/submittal-to-carb.pdf>
- CARB staff report describing statewide strategy and Year 1 communities https://ww2.arb.ca.gov/sites/default/files/2018-09/2018_community_recommendations_staff_report_revised_september_11.pdf

And now, let's discuss this community (San Bernardino, Muscoy)...

Community-Identified Air Quality Concerns

Based on Air Quality Mapping Activity in Meeting #1



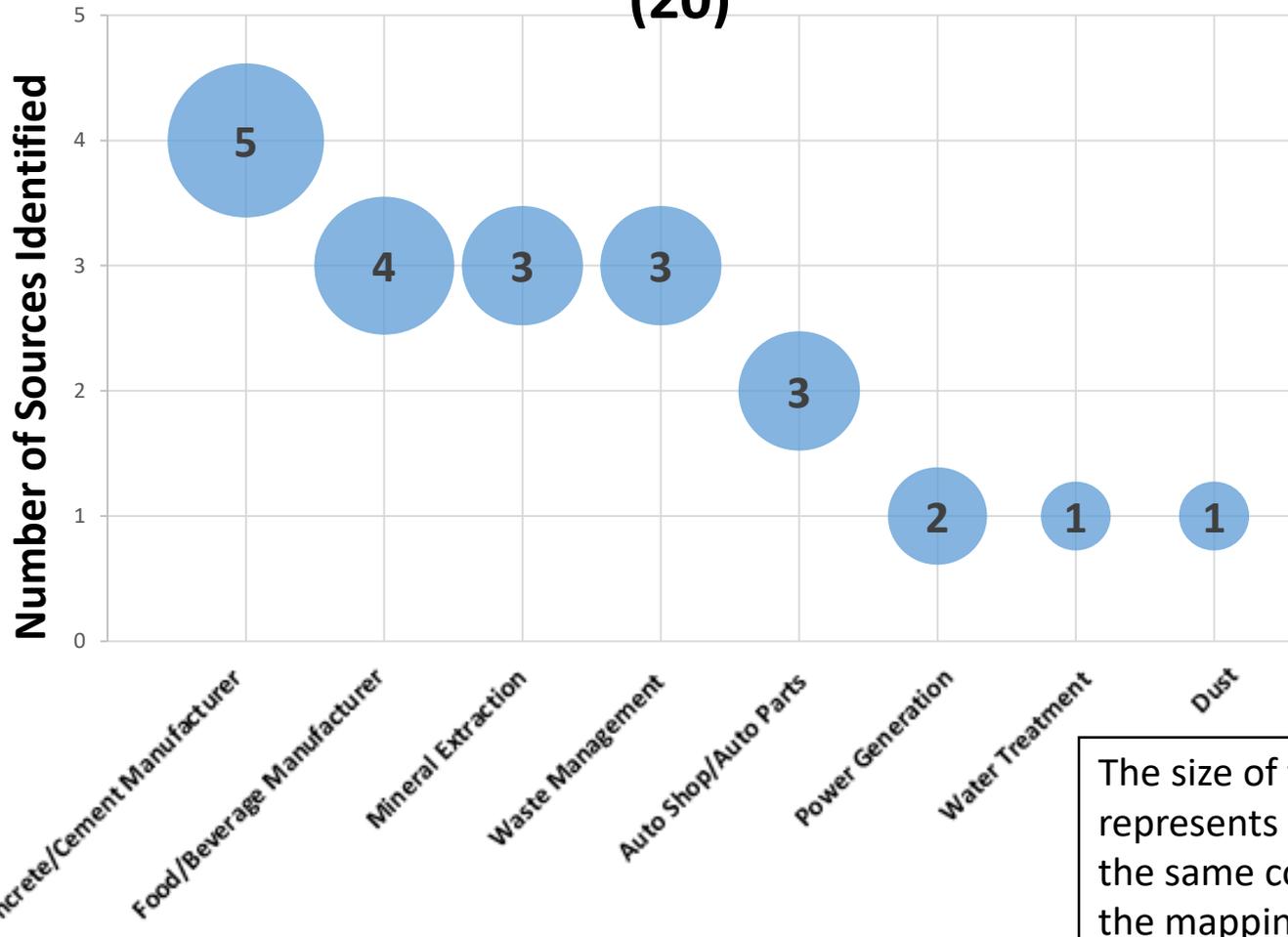
	Number
Stationary Sources	20
Mobile Sources	43
Sensitive Receptors	8
Total Unique Concerns	71

Stationary Source Concerns

(20 unique sources)

Stationary Source Air Quality Concerns

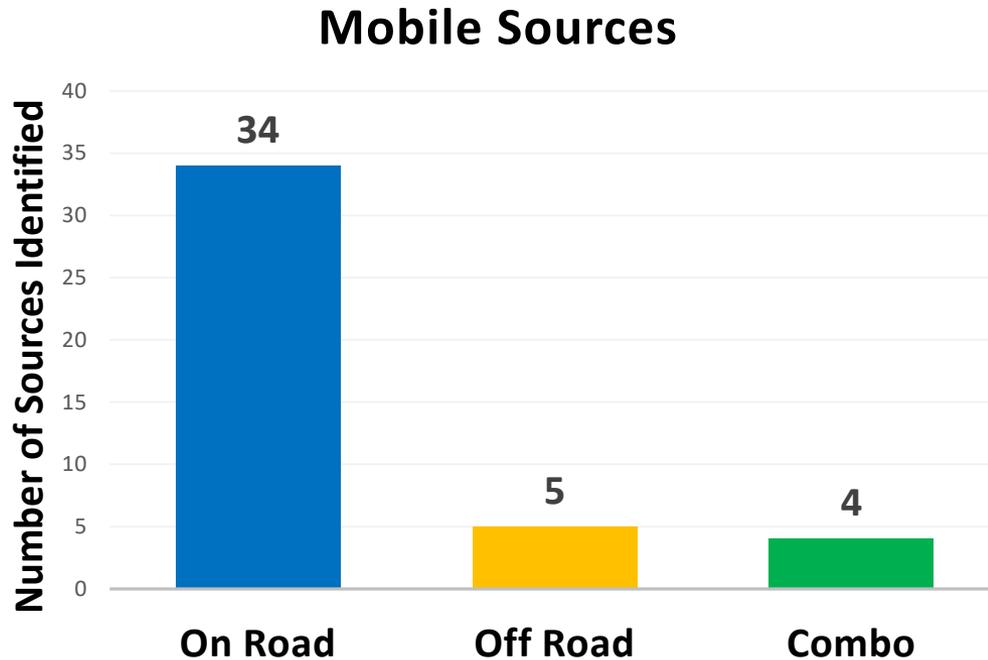
(20)



The size of the bubble represents how many times the same concern came up in the mapping activity.

Mobile Source Concerns

(43 unique sources)

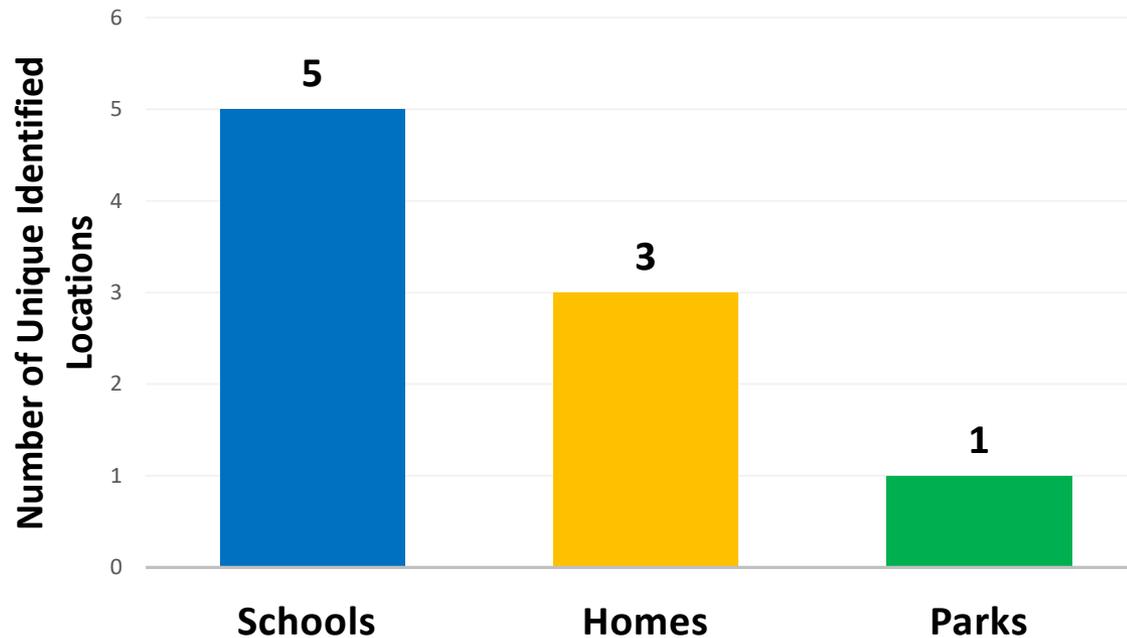


- **On Road:**
 - Mainly truck idling/parking
 - Warehousing truck traffic identified at unique locations multiple times
- **Off Road:**
 - 3 train stations
 - Airport
 - Recreational off-roading
- **Combo:**
 - Railyards were the main concern; mentioned multiple times

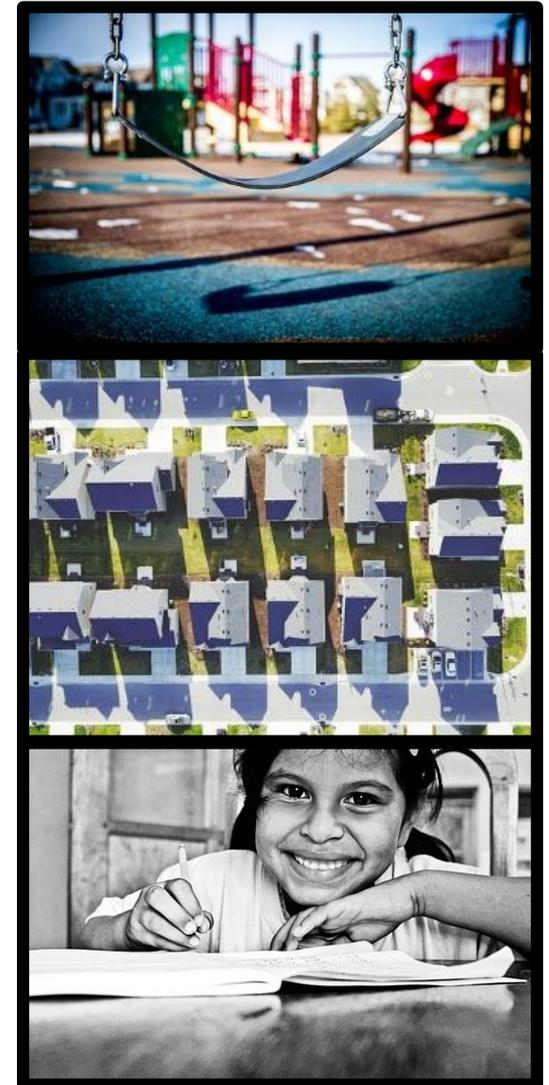
Where people spend time

(8 unique locations)

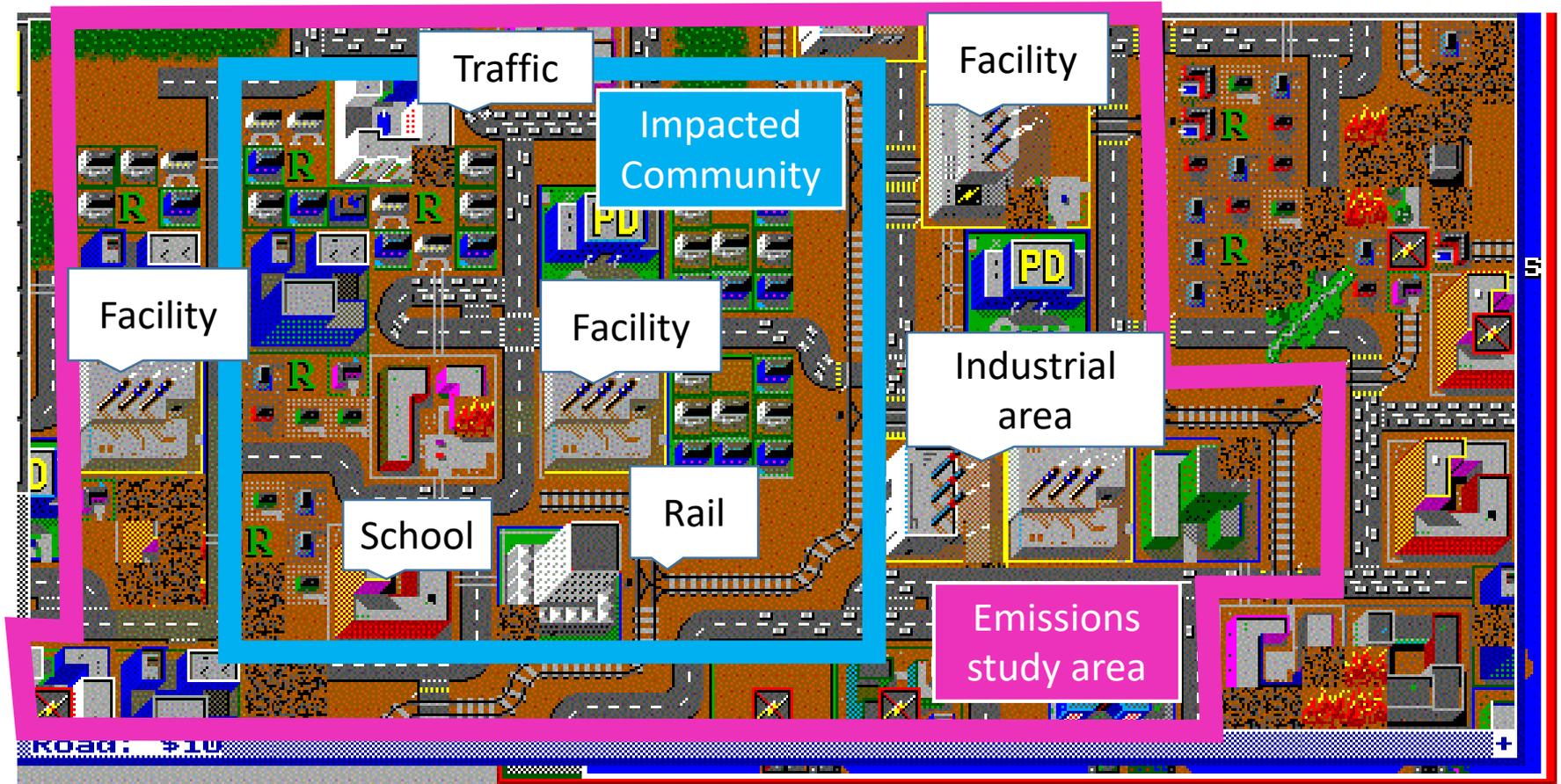
Sensitive Receptor



Many people were concerned about schools and homes near freeways and the rail yard.



Community Boundaries Example



Impacted Community: Area of the community where people live, work, go to school, and spend the majority of their time.

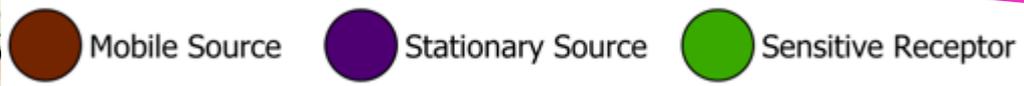
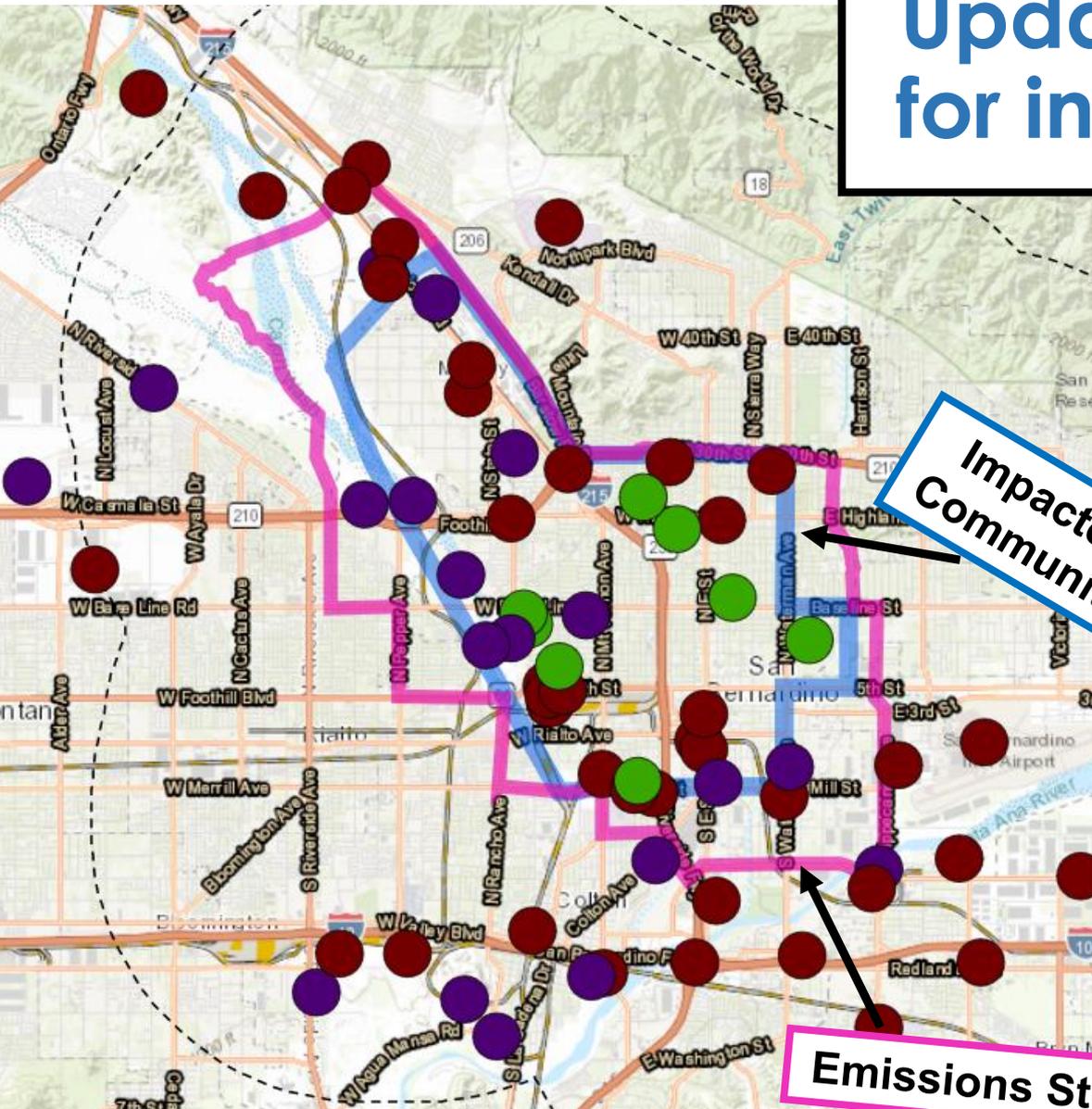
Emissions study area: Region that includes the sources that affect the Impacted Community.

Updated boundary for input/discussion

- Community concerns were taken into consideration
- Majority of community concerns fall within the **proposed impacted community boundary**
- Regions within and near the **emissions study area** will also benefit from the emissions reductions
- **Warehouse related mobile sources** will be addressed, even if the warehouses are located **outside the emissions study area**

Impacted Community

Emissions Study Area



[Click here to open interactive map](#)



Stretch break

**Come back in
5 minutes**



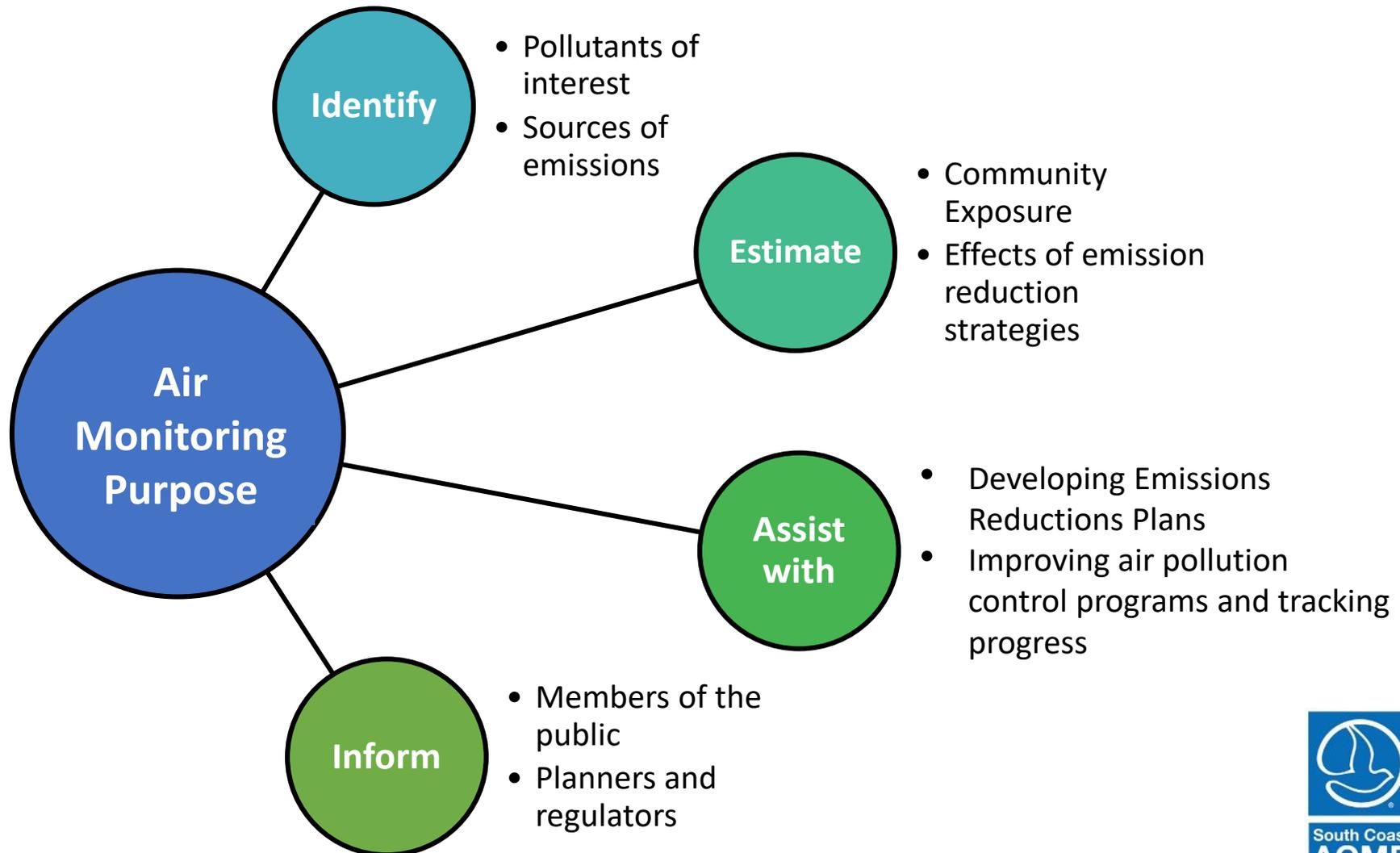
Developing Community Air Monitoring Objectives

*Thursday, January 17, 2019
Muscoy PAL Center*

*Dr. Andrea Polidori
Advanced Monitoring Technologies Manager
South Coast Air Quality Management District*



Why Do We Monitor Air Pollution?



What Are The Major Sources Of Air Pollution in this Community?

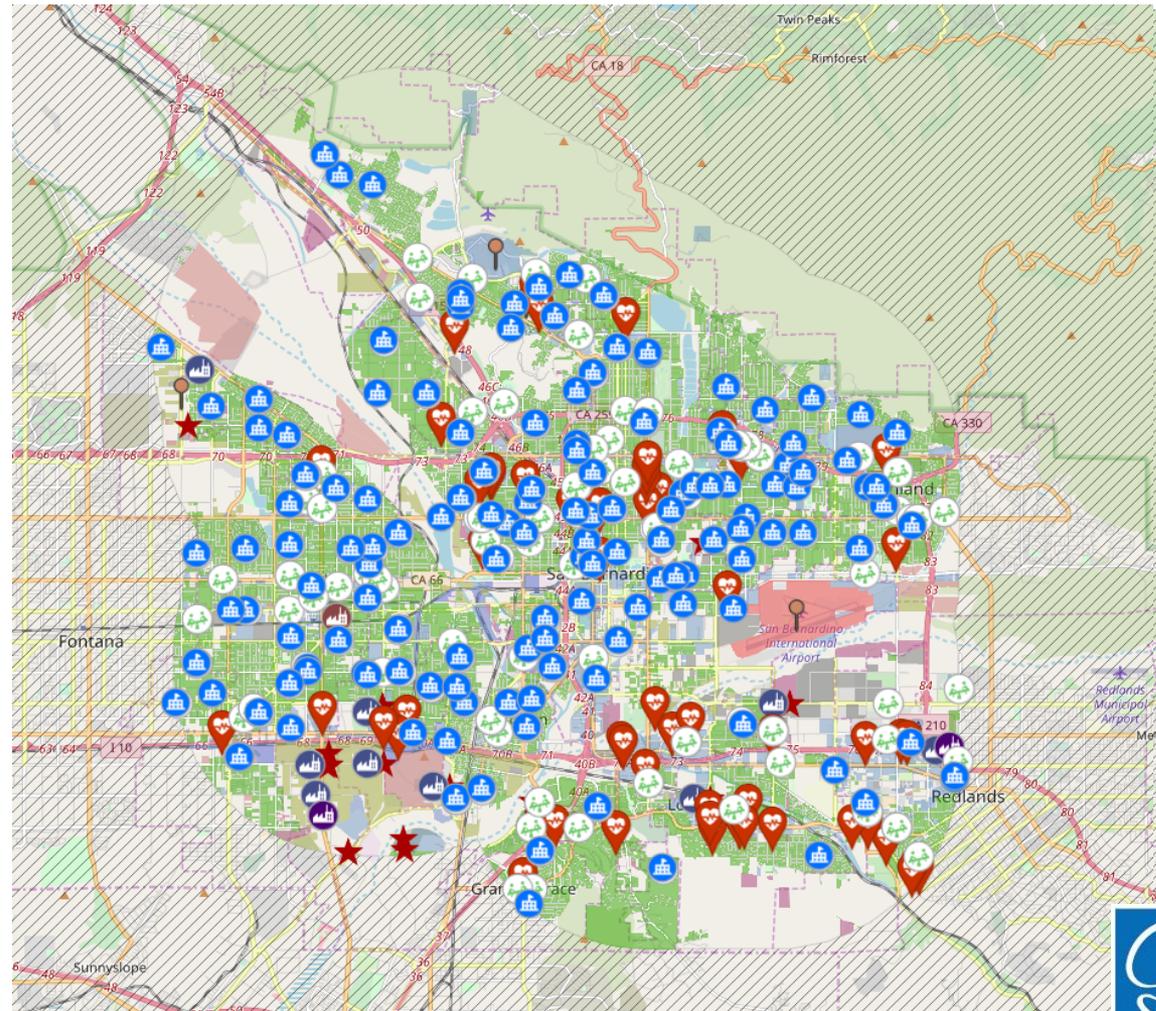


Sources of Air Pollution and Monitoring Challenges

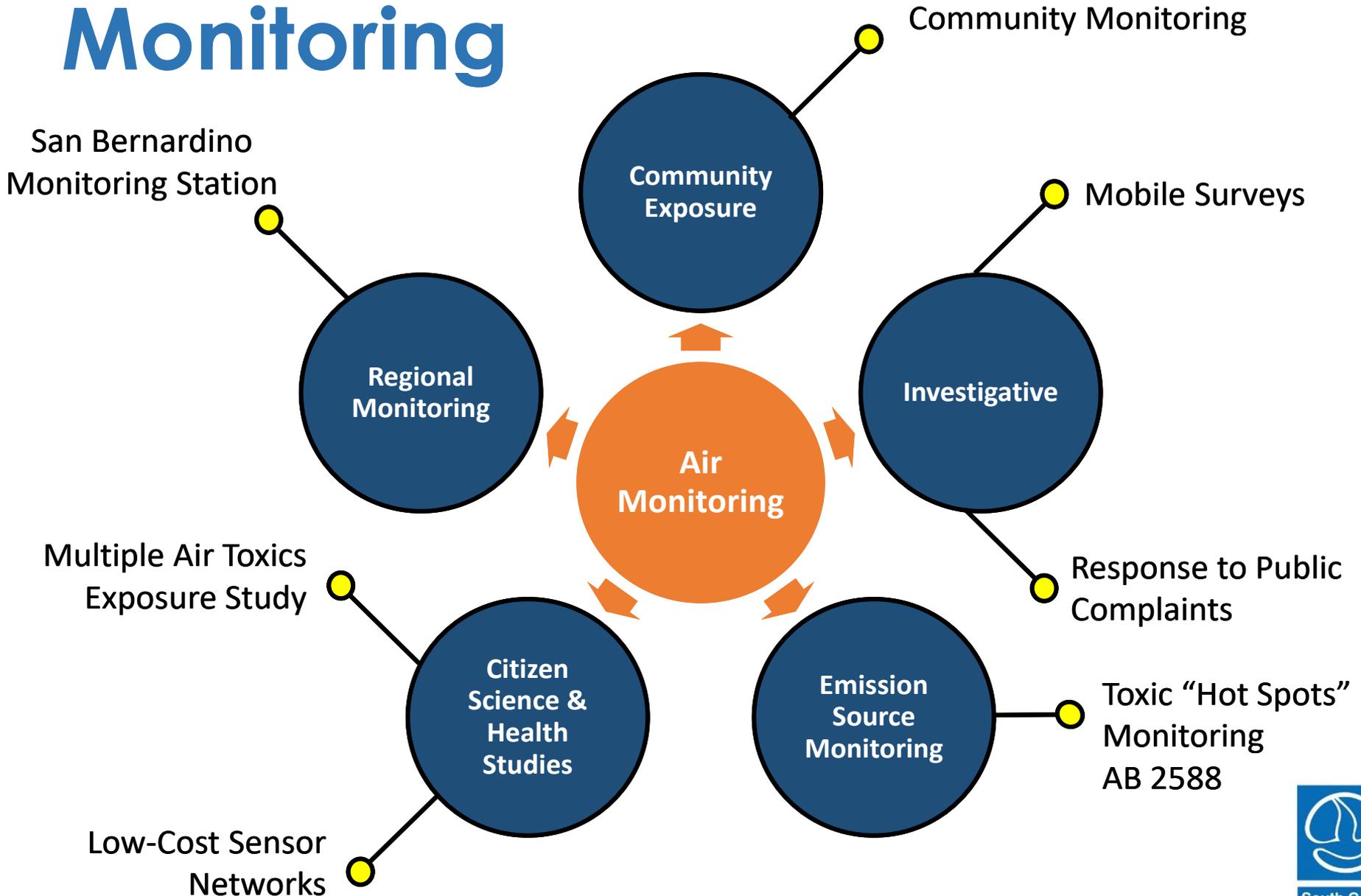
**Industrial Facilities,
Commercial Facilities,
and Residential Use**
Commercial and
Industrial Land Use

Monitoring Challenges

- Complex variety of emission sources
- Variety of air pollutants
- Large study area
- Monitor siting
- Complex meteorology



Different Types of Air Monitoring

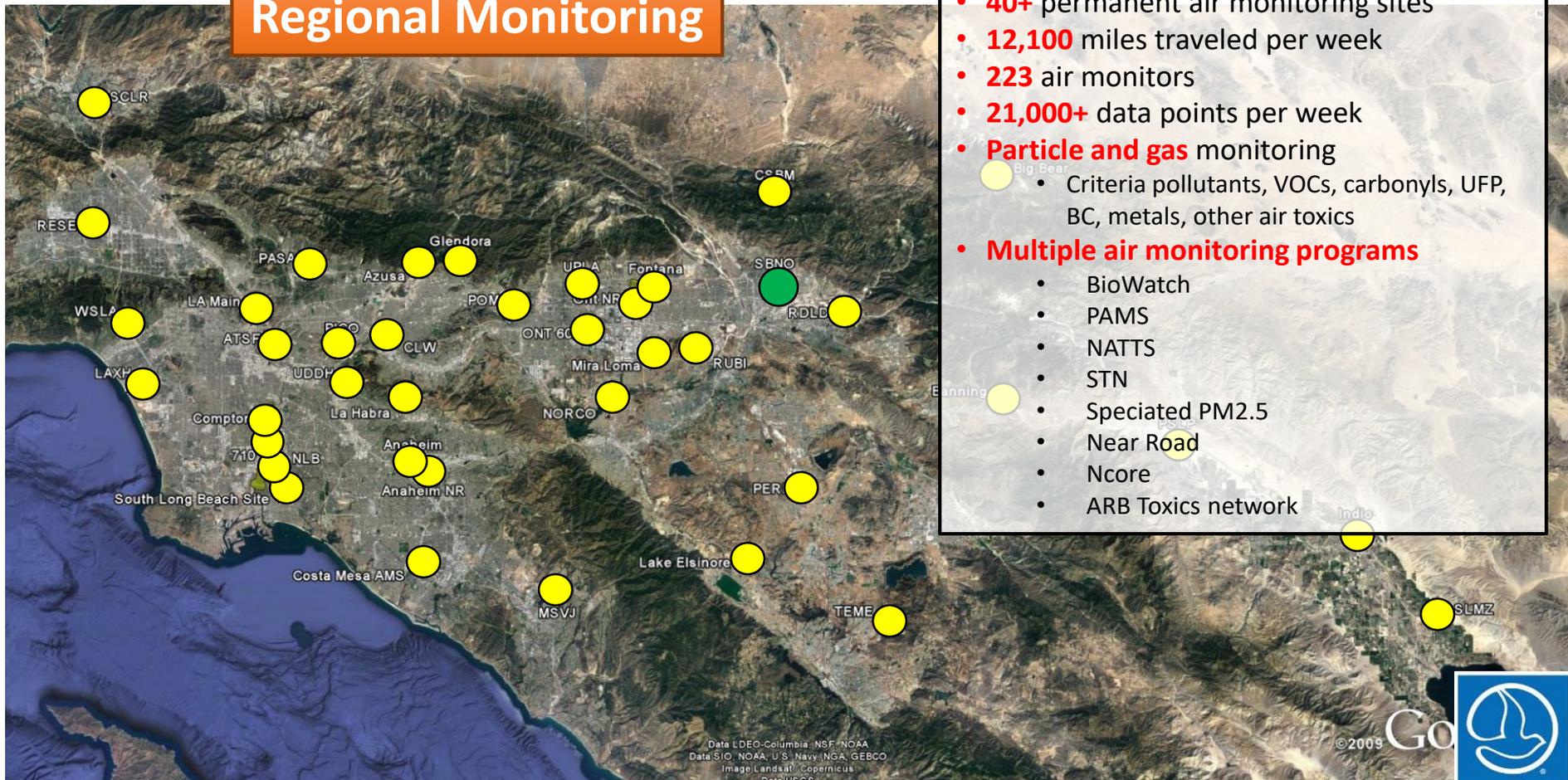


What types of monitoring are we doing in San Bernardino / Muscoy?

- SCAQMD has been conducting monitoring in this community ahead of AB 617 monitoring schedule
 - Permanent monitoring programs (Fixed Network, Regulatory)
 - Sensor deployment in communities (EPA STAR Grant)
 - [Visit monitoring posters to learn more](#)
 - Other monitoring studies (MATES, sensor networks, NASA ROSE, ENRRICH study)
 - [Visit monitoring posters to learn more](#)
 - Complaints (**1-800-CUT SMOG**[®])
- We will work with Community Steering Committees to ensure we are addressing the top priorities
- We use a combination of methods
 - **Traditional methods** – Criteria pollutants (FRM, FEM, EPA Guidance)
 - **Advanced methods** – Air toxics (sensors, remote sensing, mobile platforms)

Permanent Monitoring Programs (Fixed Network, Regulatory)

Regional Monitoring



- **40+** permanent air monitoring sites
- **12,100** miles traveled per week
- **223** air monitors
- **21,000+** data points per week
- **Particle and gas** monitoring
 - Criteria pollutants, VOCs, carbonyls, UFP, BC, metals, other air toxics
- **Multiple air monitoring programs**
 - BioWatch
 - PAMS
 - NATTS
 - STN
 - Speciated PM2.5
 - Near Road
 - Ncore
 - ARB Toxics network

Data: LDEQ-Columbia, NSF-NOAA
Data: SIO, NOAA, U.S. Navy, NGA, GEBCO
Image: Landsat, Copernicus
Data: USGS



South Coast
AQMD

Air Monitoring near BNSF Rail Yard (MATES IV)

Fenceline Emission Source Monitoring

Reasoning:

- Black carbon is a surrogate for diesel pollution in urban areas
- Ultrafine particles come from combustion (e.g. engines)

Findings:

- Black carbon and ultrafine particles concentrations were **higher** compared to typical levels in the region



Sensor Deployment in San Bernardino

Community Monitoring

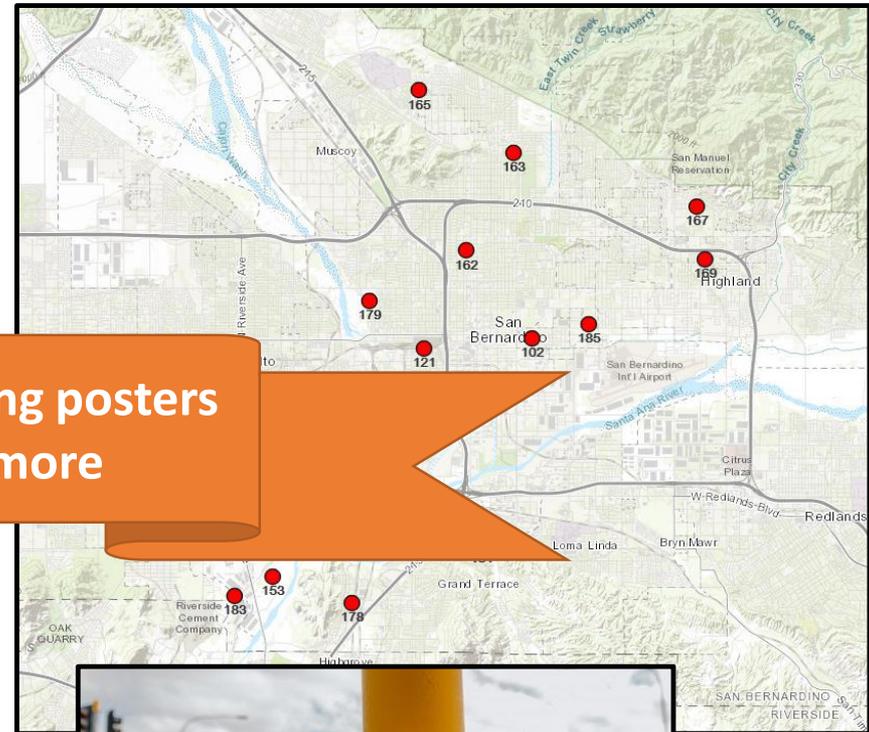
U.S. EPA STAR Grant

Purpose: to engage, educate and empower California communities on the applications of air

monitoring sensors, in:

- Communities in Environmental Justice areas
- Communities near specific sources of air pollution

Visit monitoring posters to learn more



AB 617 Community Monitoring Design

Transitioning into AB 617 Monitoring

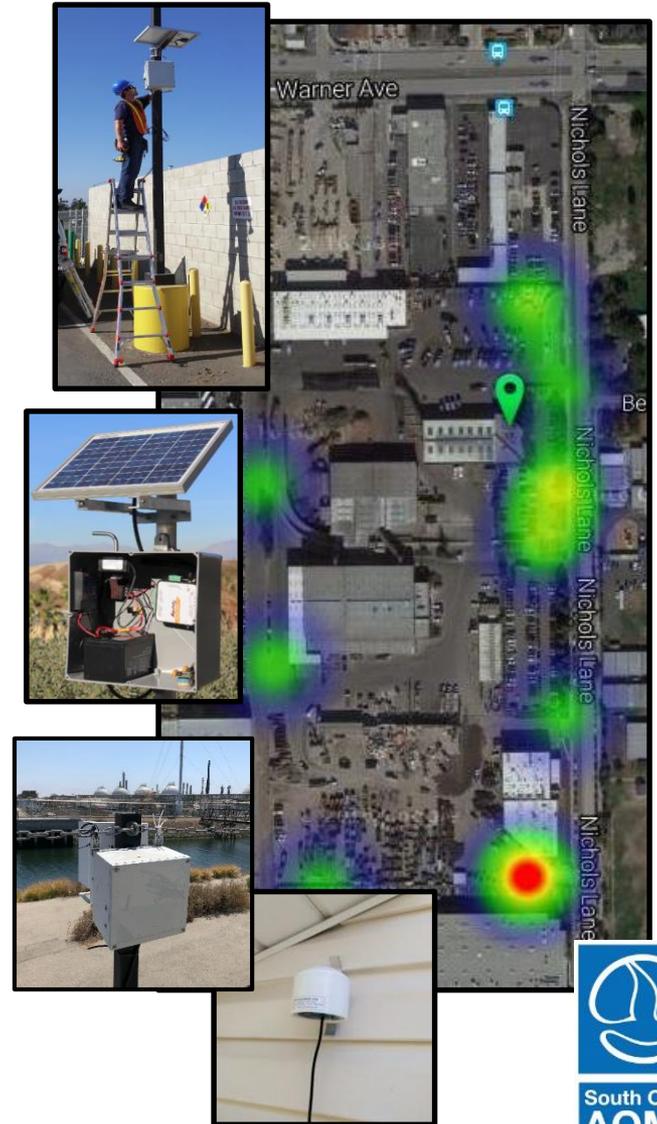


AB 617 Monitoring Efforts

Regulatory monitoring stations



Low-Cost Sensor Networks



Mobile Platforms



New Approaches in Air Pollution Monitoring

Mobile Platforms



Traditional Monitoring



Low-Cost Sensors



Visit monitoring posters to learn more

Limited to Governments, Industry and Researchers

and Researchers

Expanded Use by Communities and the Public

Covers a Large Area, Identifying Hot-Spots and Emissions Sources, High-Time Resolution
is data collected?

Compliance Monitoring, Enforcement, Trends, Research

Citizen Science, Educational Tool, High-Time Resolution Real-Time Data

Scientific Reports and Summaries
is data processed?

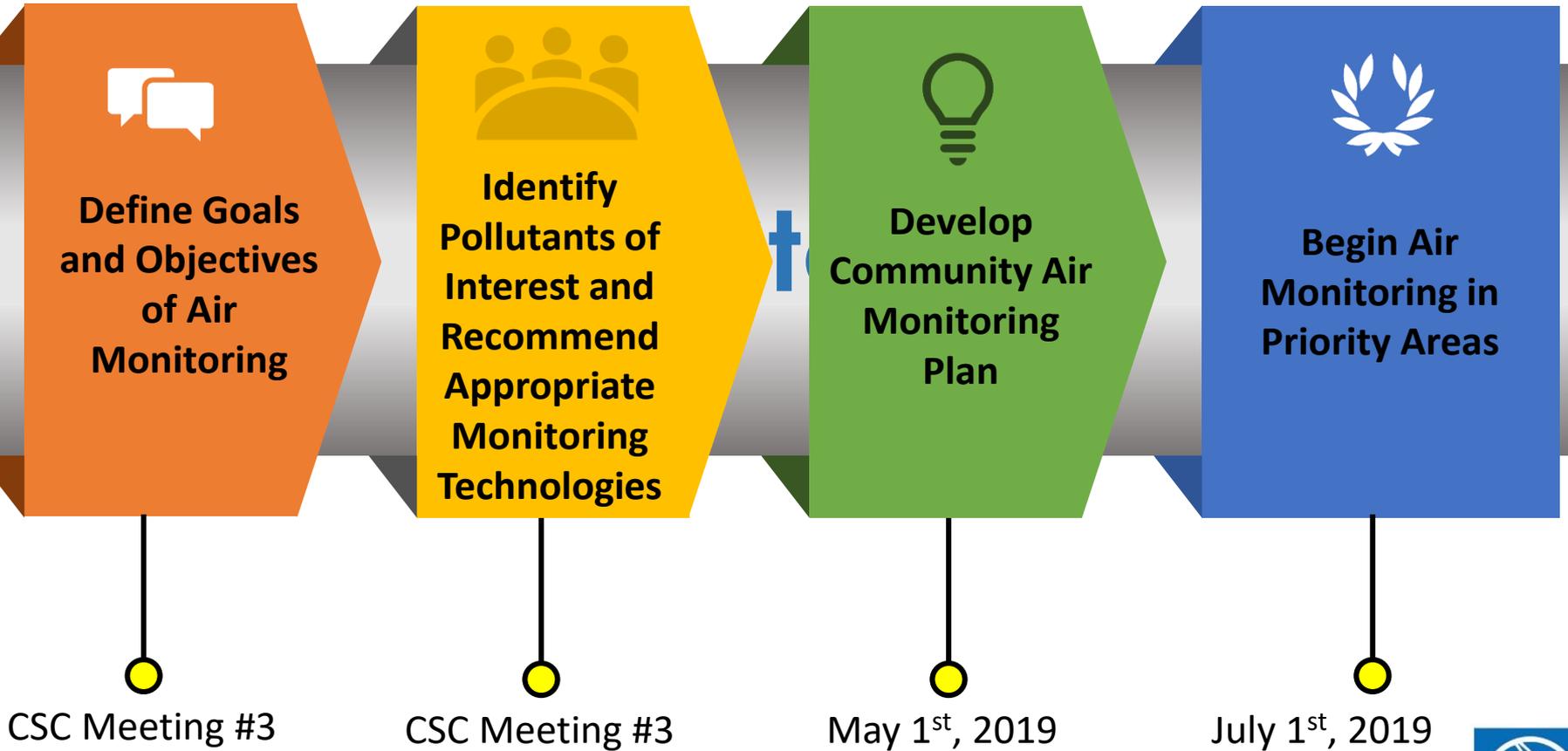
Government Websites, Permit Records, Research Databases

Community Engagement, Increased Data Availability

Air Monitoring Benefits and Limitations

		Reference Monitors	Low Cost Sensor Networks	Mobile Monitoring & Surveys
Applications	Track progress	✓	✓	
	Identify emission sources		✓	✓
	Identify “hot-spots”		✓	✓
Benefits	Compliance action	+		
	Good detection capability	+		+
	Continuous data		+	+
	Real time data		+	
Limitations	High Cost	✗		✗
	Number of pollutants detected		✗	
	Low accuracy/precision		✗	

Working with the CSC Group





Questions?



CSC charter and other important items

1. Updated CSC charter

- Very few comments received – only minor wording changes for clarity
- Please sign and return to SCAQMD staff **today, or by Jan 24, 2019**

2. Biographies

- Please email to ab617@aqmd.gov as soon as possible so we can post on the webpage

3. Community Tour, including Facility Tour(s)

- Purpose: Providing committee members with an opportunity to share and gain a further understanding of key concerns in the community, as well as operations and clean air technologies at facilities
- Any volunteers/suggestions?

Current progress

What we've done so far:

- Discussed background on:
 - AB 617 program
 - Air pollution basics
 - Air pollution data in this community
 - Air monitoring technologies
- Gathered input on community air quality issues
- Gathered input on community boundaries

Likely topics for Meeting #3:

- Prioritization of air quality issues
 - To address through air monitoring and/or emission reduction plans
- Potential strategies
- Enforcement overview
- Update on RECLAIM/BARCT rule development (possibly Meeting #4)

Technical Advisory Group (TAG)

Purpose: Provide technical input on data and methods for modeling, monitoring, inventory

Current volunteers from this CSC:

Name	Affiliation
Andrea Vidaurre	Center for Community Action and Environmental Justice (CCA EJ)
Andreas Beyersdorf	California State University San Bernardino
Tammy Yamasaki	So Cal Edison

**All meetings
are open to the
public**

First TAG meeting is being scheduled for **February 2019**

**Thank you
for the hard work!**

More information on AB 617:

www.aqmd.gov/AB617

Email: AB617@aqmd.gov

Follow us @SouthCoastAQMD



**South Coast
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