

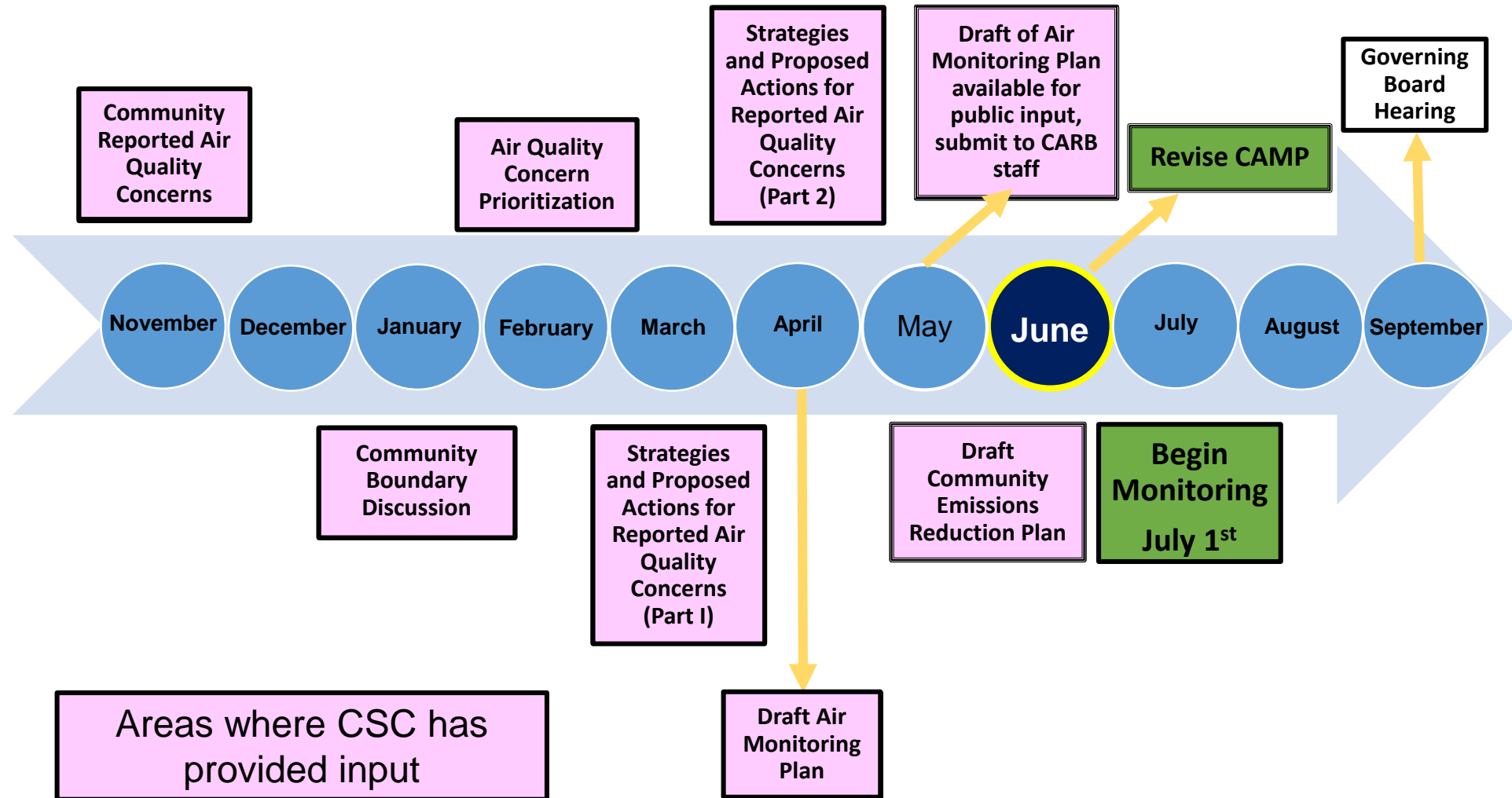


Community Air Monitoring Plan Update and Discussion

*Wednesday, May 29, 2019
Technical Advisory Group Meeting
South Coast Air Quality Management District
Headquarters, Diamond Bar, California*

Payam Pakbin, PhD
Program Supervisor

CAMP Progress

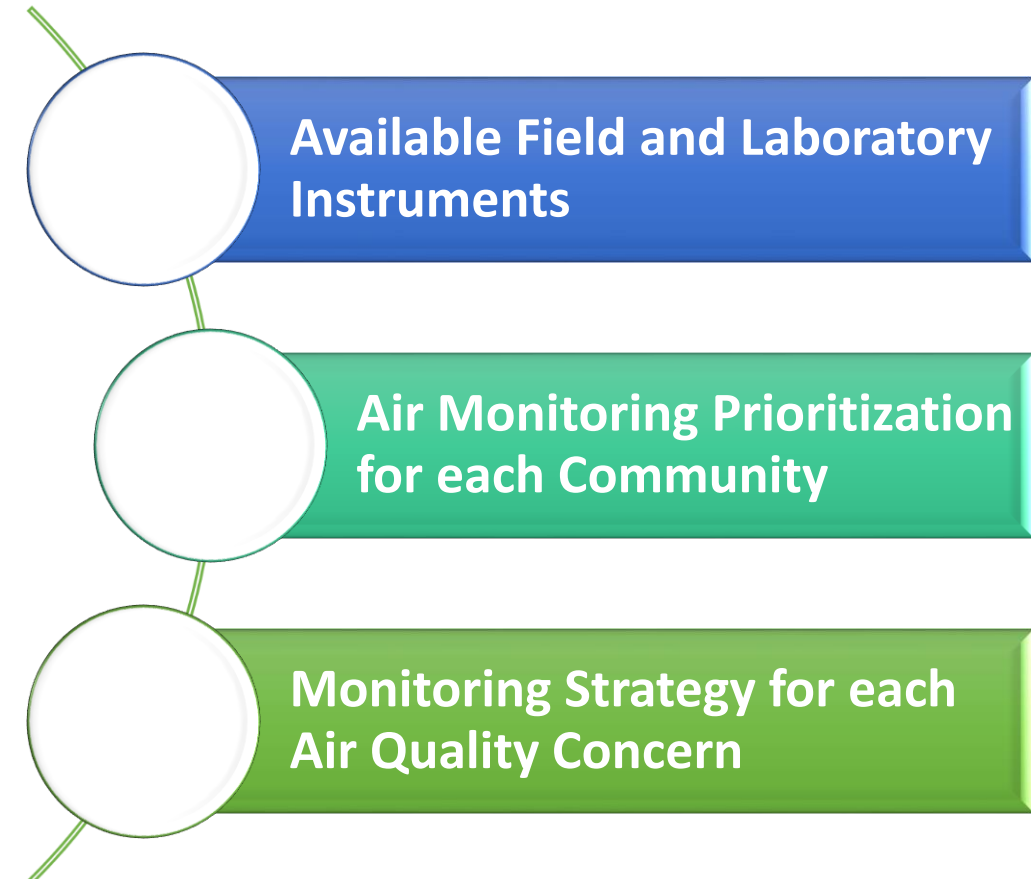


The Major Elements in the CAMP and Appendix Documents

Community Air Monitoring Plans

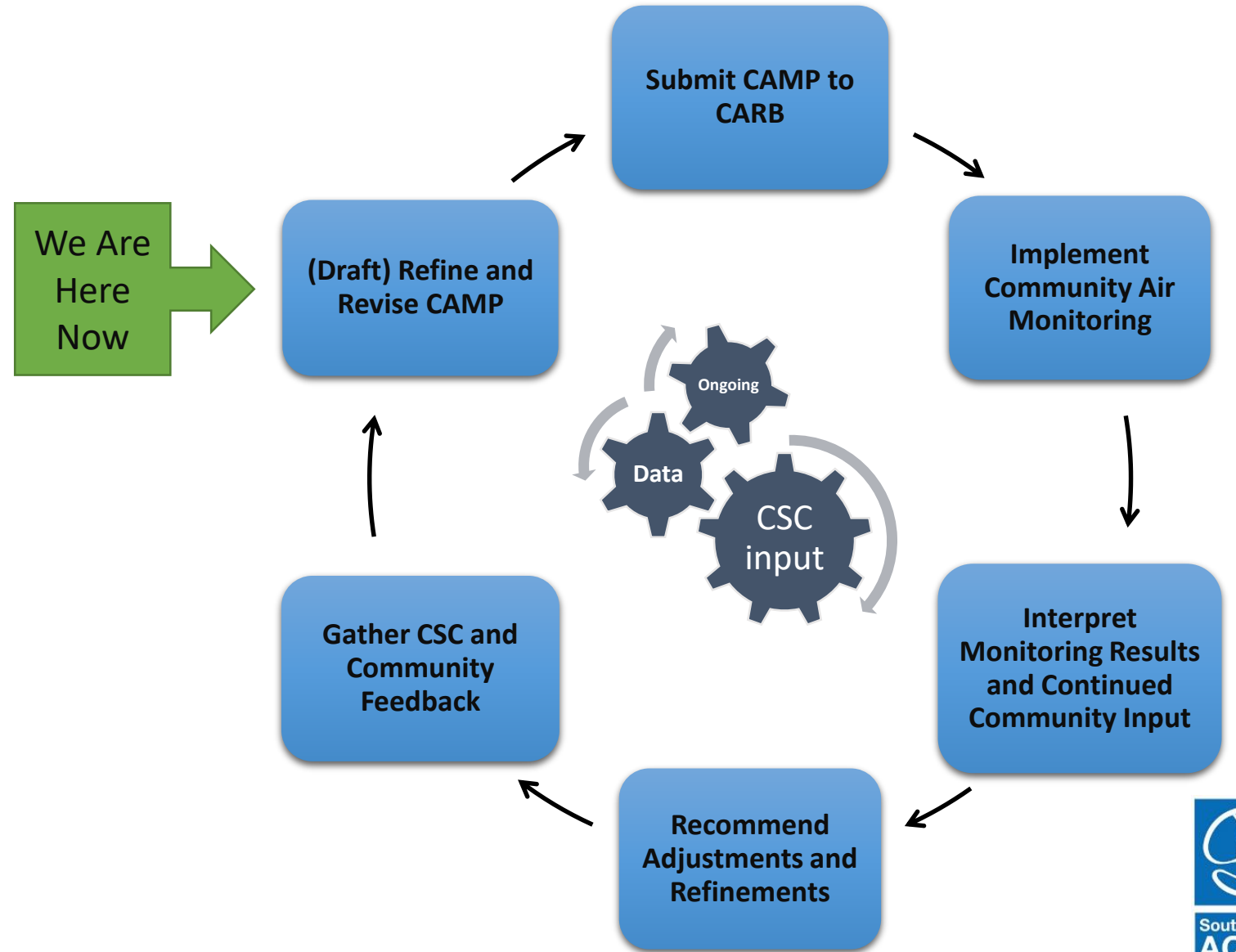


Appendix Document



Ongoing CAMP Review and Revision Process

- CAMP and monitoring strategies and targets will constantly be evaluated and adjusted, based on:
 - Input from CSC and members of the public
 - Findings of community air monitoring
 - In support of CERP and enforcement actions



Proposed General Monitoring Approach

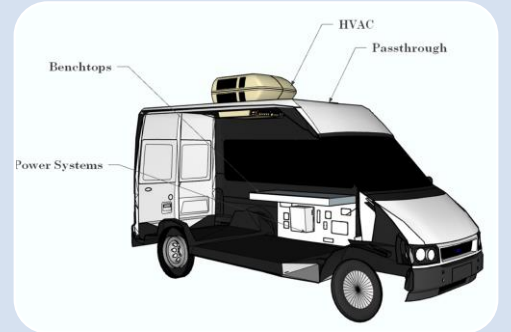
**Mobile
Monitoring**

**Fixed
Monitoring**

**Sensor
Networks**

<p>Pros</p>	<ul style="list-style-type: none"> • Survey large areas in relatively short period of time • Source emission identification and characterization • Community exposure assessment • Identification of “hotspots” and unknown sources of emissions 	<ul style="list-style-type: none"> • More comprehensive source emission characterization • Community exposure assessment • Can support real-time data reporting • Support for more comprehensive list of air pollutants • Data quality 	<ul style="list-style-type: none"> • Community education and engagement • Long-term measurements • Higher spatial coverage • Community exposure assessment • Relatively low-cost • Real-time data reporting
<p>Cons</p>	<ul style="list-style-type: none"> • Captures a “snapshot” • Mostly during the daytime • Data reporting is not in real-time 	<ul style="list-style-type: none"> • Siting • Air quality information at a specific location • Costs 	<ul style="list-style-type: none"> • Data quality • Limited number of air pollutants

New Monitoring Technologies to be Used for AB 617 Community Air Monitoring



Platform

FluxSense Van

Optical Remote Sensing (ORS) technology

Alkanes, HCHO, NO₂, SO₂, methane, ammonia, BTEX, styrene, etc.

Technology

South Coast AQMD Mobile Platform

Fast response regulatory grade, research grade, and consumer-grade

PM mass and number, CO, NO₂, O₃, black carbon

South Coast AQMD Trailer

Regulatory grade, research grade, and consumer-grade monitors

Most comprehensive list of pollutants

South Coast AQMD VOC Mobile Platform

Highly sensitive research grade monitors (PTR-MS)

Hundreds of VOCs, including air toxics and odorous compounds

Pollutants

New Monitoring Methods to be Used for AB 617 Community Air Monitoring by 3rd Party Contractors



Aerospace Research

ORS technologies

Gaseous air pollutants and air toxics

Aclima Mobile Platform

Fast response regulatory grade and low-cost sensors

PM mass and number, CO, black carbon, VOCs

Aerodyne Research Mobile Platforms

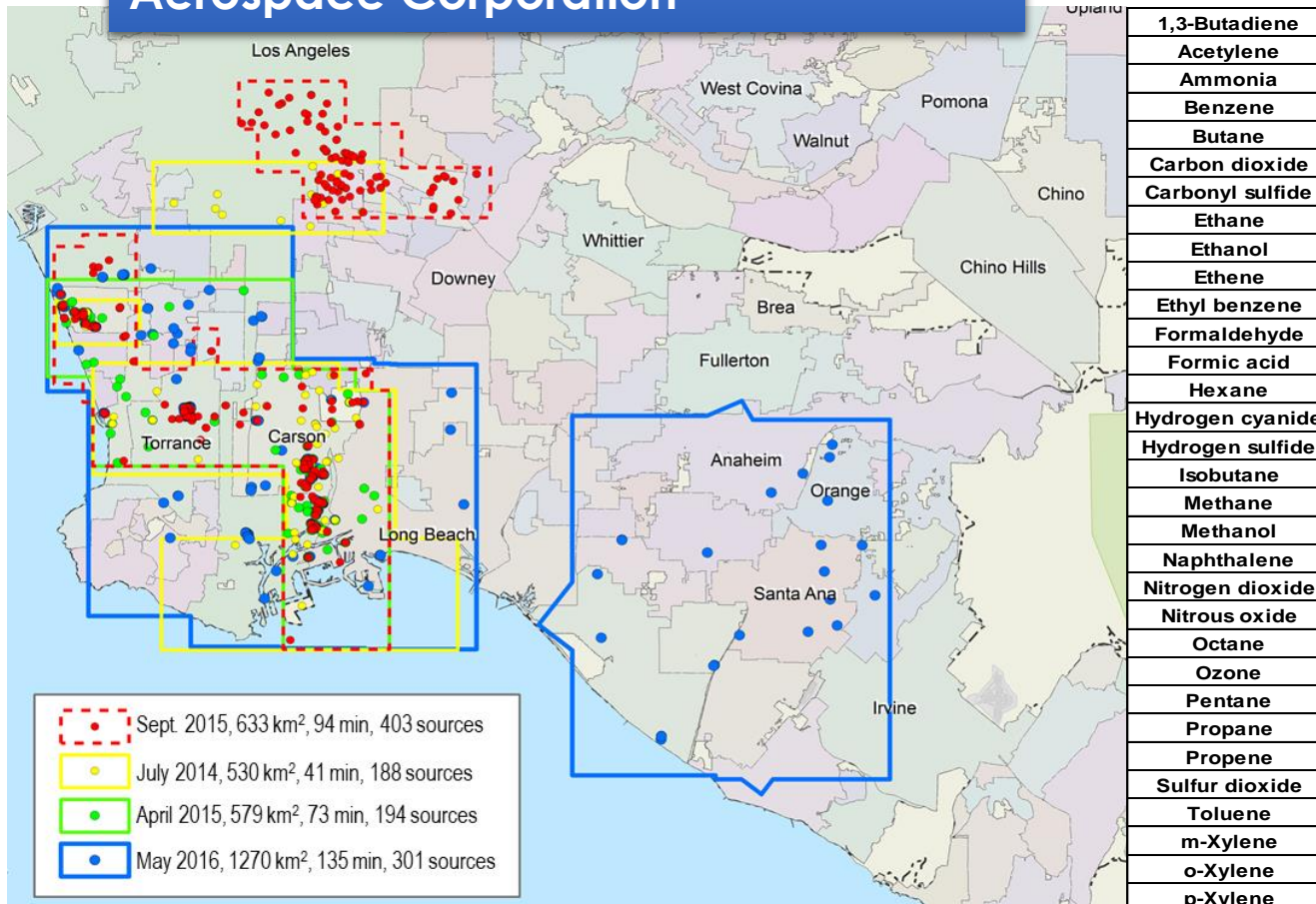
Highly sensitive research grade monitors (PTR-MS)

Hundreds of VOCs, including air toxics and odorous compounds

Community Air Monitoring Examples

All Communities

Flight-Based Air Toxics Measurements Aerospace Corporation



- July 10th and 11th
- Survey large areas
 - All three communities
- Historical data
- Detect plumes and emissions
- Identify hotspots and unknown sources
- Focus ground-based efforts

Community Air Monitoring Examples

All Communities

Mobile Measurements for Diesel PM Precursors South Coast AQMD & Aclima

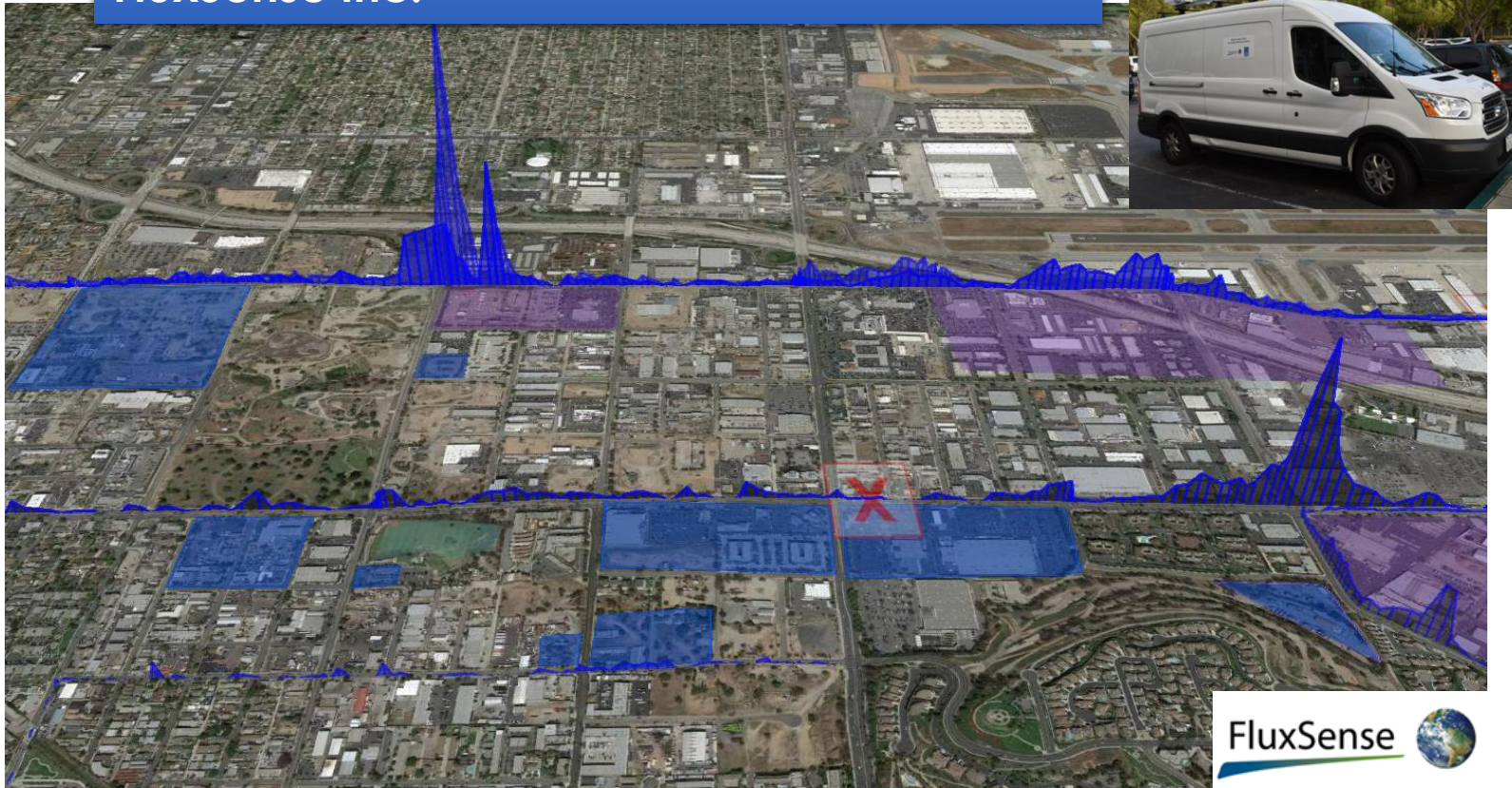


- Diesel emissions are one of the major concerns at all AB 617 communities and in the South Coast Basin
- Mobile monitoring will include measurement of criteria pollutants and air toxics, with a focus on diesel PM and its precursors
- Monitoring purpose:
 - Identify “hotspots”
 - Assess the impact of idling truck emissions on community exposure
 - Near-road measurements (e.g. freeways and busy roadways, transportation corridors)
 - To support development of emission and exposure reduction strategies
- South Coast AQMD to provide support to CARB for their Automated License Plate Reader and PEAQS programs

Community Air Monitoring Examples

WCWLB Community

Concentration Mapping in Communities FluxSense Inc.



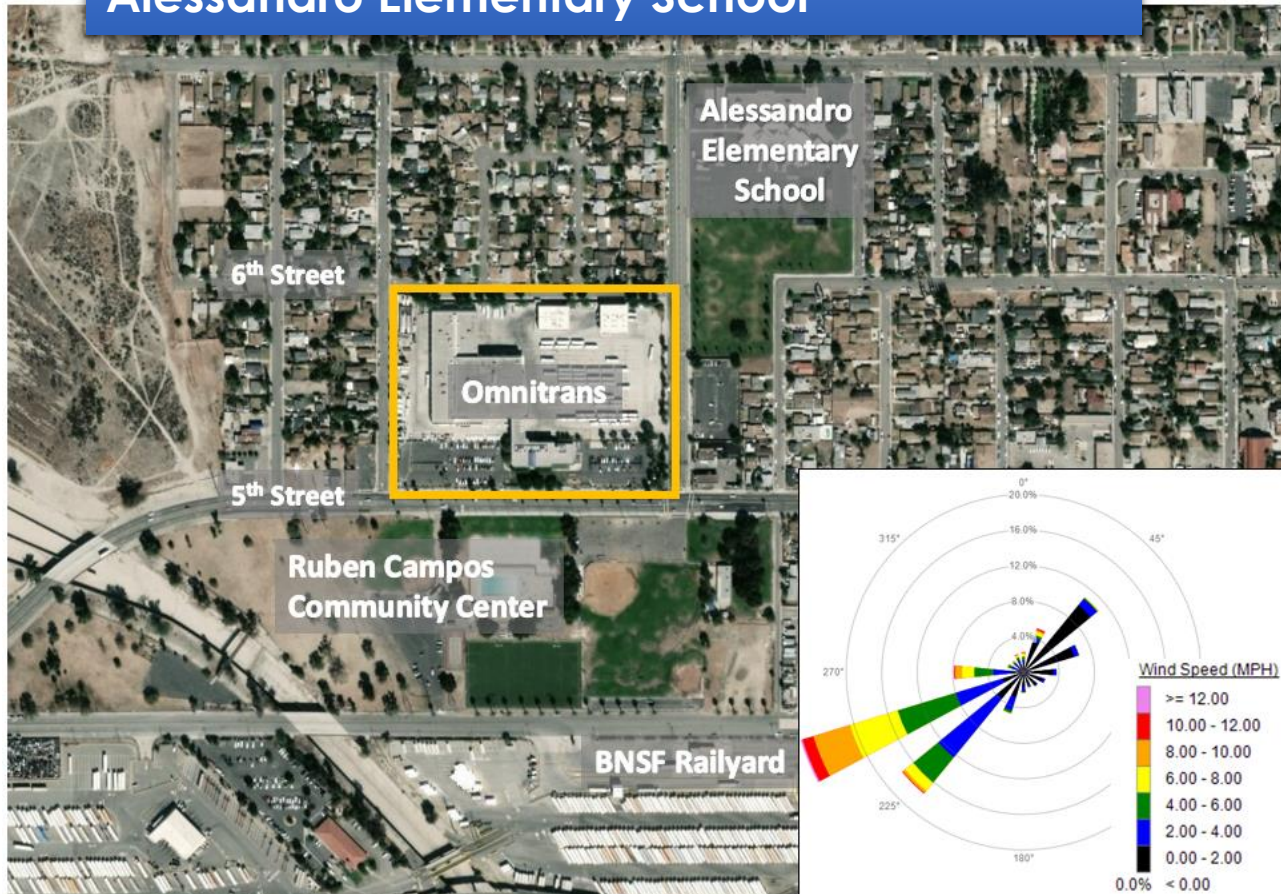
Solar Occultation Flux (SOF) measurements of alkanes. Blue areas correspond to Oil wells, Cisterns and Derricks and purple areas to treatment plants and tank farms

- Mobile monitoring:
 - Begins on July 1st through July 20th
 - Suite of optical instrumentation on a mobile platform
 - To measure multiple air toxics
 - Ideal tool for assessing the impact of large emission sources (e.g. refineries) and large area sources (e.g. tank farms)
- Fixed monitoring:
 - Diesel PM precursors
 - Air toxics

Community Air Monitoring Examples

SBM Community

Mobile and fixed monitoring at or near Alessandro Elementary School



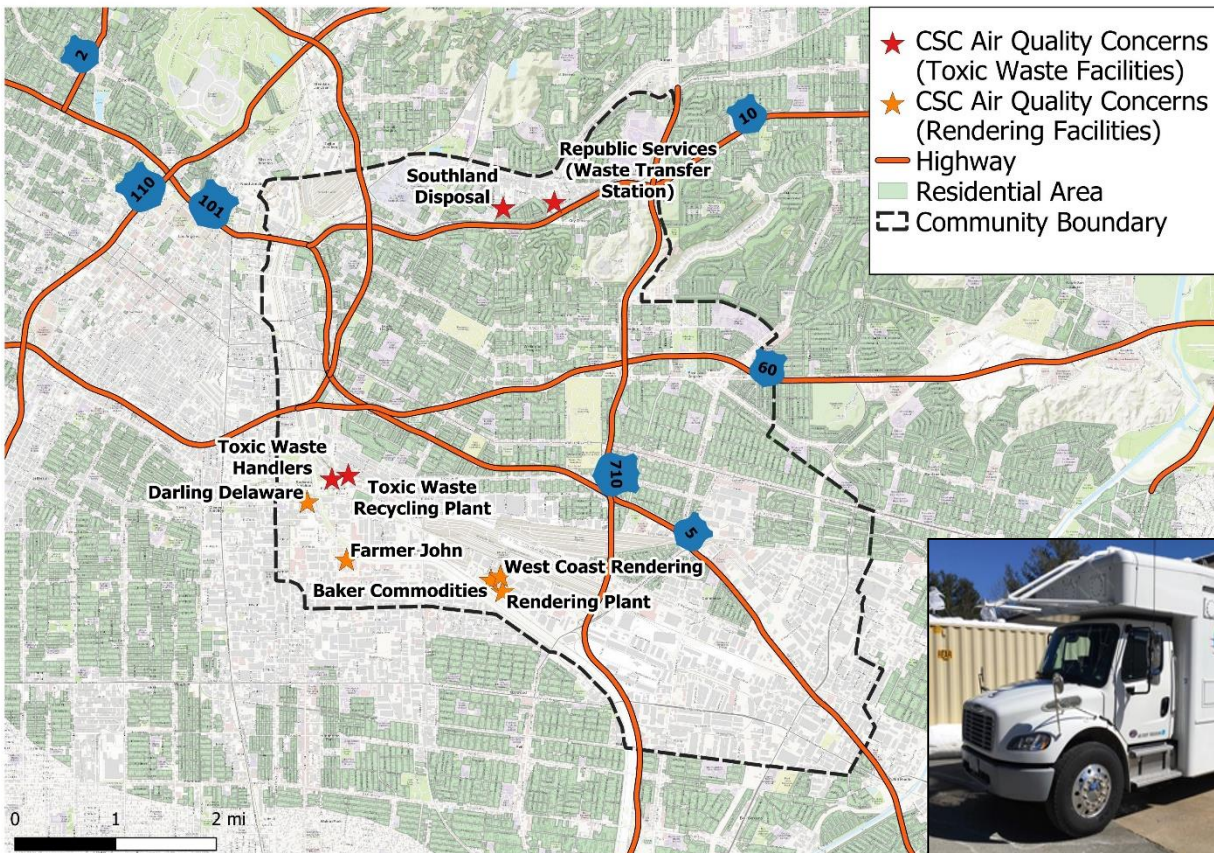
- CSC identified Omnitrans as a source of pungent natural gas odors
- Odors could be a combination of methane (CH_4) and hydrogen sulfide (H_2S) and mercaptan that is added to natural gas to make it easier to detect
- Monitoring (early July):
 - Fixed monitor:
 - Picarro CH_4 and H_2S Analyzer
 - Sensors for particulate matter
 - Mobile monitoring:
 - Surveys with a focus on VOCs and diesel PM precursors
 - Highly sensitive VOC analyzer

Community Air Monitoring Examples

ELABHWC Community

Mobile monitoring for odors and air toxics
Aerodyne Research

Location of the Concerns Related to odors



- Measurements to begin before July 1st
- CSC identified several source of odors as some of the main air quality concerns in this community:
 - Waste facilities and rendering plants
 - Odors are difficult to measure even with modern air monitoring techniques and the human nose is often more sensitive
- New measurement capabilities:
 - Highly sensitive **Proton Transfer Reaction – Mass Spectrometer (PTR-MS)**: *measurement of hundreds of VOCs in parts-per-trillion levels*
 - Continuous metals measurements: tbd
- Measurement purpose:
 - Monitoring of air toxics, PM and VOCs
 - Identifying hotspots and pinpointing emission sources
 - Community impact assessment



Questions & Discussion