AB 617 Community Air Monitoring Plan (CAMP) for the South Los Angeles Community

South Coast Air Quality Management District

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Version 1

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1 Background

Assembly Bill (AB) 617, passed by the California legislature in 2017, is a law that focuses on reducing air pollution in Environmental Justice (EJ) communities throughout the State. This law provides an opportunity for the South Coast Air Quality Management District (South Coast AQMD) to further address community air quality issues in disadvantaged areas. For each community approved by the California Air Resources Board (CARB), South Coast AQMD staff will form and work with a community steering committee (CSC), local stakeholders, and members of the public to identify their major air pollution concerns and propose specific strategies to address these concerns. Depending on the specific needs of each community, South Coast AQMD staff will develop and implement a tailored Community Emissions Reduction Plan (CERP) and a Community Air Monitoring Plan (CAMP). South Coast AQMD staff will work with CARB and other stakeholders to implement the CERP and CAMP to reduce local air pollution emissions and benefit public health. In February 2021, the South Los Angeles (SLA) community was selected by CARB for both a CERP and a CAMP as part of the third year of AB 617 implementation.

Community air monitoring plays an important role in supporting actions to reduce emissions of and exposure to air pollution within communities that are disproportionally impacted by air pollution. The purpose of this CAMP is to describe the air monitoring that will be conducted to address the community's top air quality priorities and support effective implementation of the SLA CERP. This could include enhancing ongoing or upcoming community-led and agency-led air monitoring programs or conducting new monitoring activities in various geographical areas within South Coast AQMD's jurisdiction to enhance our understanding of air pollution impacts in Environmental Justice (EJ) communities. A variety of air monitoring approaches will be used, and the objectives, tools, and stakeholders involved will differ from community to community and/or from air quality priority to priority.

This document only discusses the CAMP for the SLA community.

2 Building Community Partnerships

This CAMP has been developed through collaboration between the SLA CSC, this community's co-leads, and South Coast AQMD staff. In order to support this collaboration and leverage the knowledge and experience of community members most effectively, a Monitoring Working Team (MWT) was also formed to inform and direct the CAMP and provide guidance throughout its implementation. The MWT is composed of CSC members who are interested in having focused, in-depth conversations on community air monitoring technologies, strategies, and data. The information from MWT meetings will be brought back to the larger CSC for the purpose of gathering input, giving recommendations, and providing updates on CAMP activities.

During the drafting of this CAMP and prior to CERP adoption the MWT held five meetings to discuss CAMP development. These meetings focused on air monitoring equipment and strategies to measure pollutants from oil and gas facilities and metal processing facilities, air quality sensors and sensor networks, fixed/stationary monitoring, and baseline monitoring. Topics related to all other air quality priorities will be discussed with the MWT in future meetings.

3 Community Air Monitoring Plan Objectives

This plan has been developed for the SLA community through close collaboration between the CSC, community co-leads, and South Coast AQMD staff. It was drafted by South Coast AQMD staff based on

input from and discussion with the CSC and the public. It outlines the air monitoring strategies and objectives based on the air quality priorities and monitoring actions to address them included in the CERP.

This CAMP is not meant to be static; rather it is intended to be updated as additional information is gathered through the process of implementing CERP actions to address the air quality priorities established by the CSC. Accordingly, this document provides a general description of the air monitoring approaches, equipment and methods available, in addition to more specific information on the initial approach to address the air quality priorities and air monitoring actions described in the CERP. Specific air monitoring objectives and strategies for SLA will be added, updated, and modified based on community feedback, air monitoring findings, and other knowledge gained. South Coast AQMD staff will work with the CSC and the MWT to determine if and when these updates and modifications should be made. Comments on the CAMP draft are welcome, and South Coast AQMD staff appreciate all input provided by the CSC and members of the public.

Community air monitoring in SLA is designed to enhance our understanding of air pollution emissions related to the air quality concerns, potential impacts on nearby communities, and typical levels of the pollutants of interest in the community. The monitoring strategies shall meet one or more of the following basic requirements, depending on the air monitoring purpose:

- Provide air pollution data to the community in a timely manner
- Support compliance activities, rule development and implementation, and other emissions reduction strategies. Data from monitors of various types can be used in the development of strategies and rule development. At monitoring locations near major air pollution sources, source-oriented monitoring data can provide insight into whether an industrial source may be contributing to increased air pollution levels near the facility
- Support air pollution and health research studies. Air pollution data can be used to supplements data collected by health researchers, atmospheric scientists and for monitoring methods development
- Look at air pollution levels at the community level to provide information on and guidance for further action, if necessary; and
- Provide information on when a monitoring study can be considered complete so that resources can be allocated to a different project.

This CAMP outlines the recommended monitoring methods, approaches and strategies that will be used to support actions towards a better understanding of air quality conditions, air pollution emission and exposure reduction, and an unbiased assessment of the effectiveness of most CERP measures over time. The air monitoring activities proposed here seek to complement and enhance existing South Coast AQMD and community-led programs. Overall, this CAMP has been developed to generated data to satisfy the recommendations provided in CARB's "Community Air Protection Blueprint"[1] and support a variety of actions, including:

- Identifying sources, categories of emissions, and emission types contributing to air pollution burdens within the community to support CERP implementation
- Refining air quality information at the community level to assess progress towards improved air quality and measure the effectiveness of the CERP

[1] CARB (2018) *Community Air Protection Blueprint*. Available at: https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-protection-blueprint

- Providing real-time air quality data to inform community members of current conditions within the community and support exposure reduction strategies by informing community's daily activities and school flag programs, and protect children during school activities; and
- Providing air quality information to support public health research at the community level.

4 Purpose of Air Monitoring

The emphasis of the AB 617 program on community-level assessment through enhanced air monitoring and new emissions reporting requirements will continue to improve our understanding of specific air quality concerns in coming years, which will support the implementation of effective emissions reduction strategies (through the CERP) designed to improve local air quality.

The purposes of air monitoring that are specific to this CAMP include the collection of air pollution data for both short- and long-term air quality assessments. A variety of air monitoring approaches will be used for this purpose. These consists of a combination of real- (or near-real-) time and time-integrated measurements to provide information on the air pollution impact caused by specific emission sources identified in SLA, and compare air pollution levels measured in previous health studies, well-known health benchmarks and health reference standards. This comparison and analysis are intended to provide the basis for additional actions, including, but not limited to, additional monitoring, enforcement actions, and other emission and/or exposure reduction efforts. Specific purposes of air monitoring are described below.

Baseline Monitoring (BM) is used to assess the effectiveness of the strategies implemented through the CERP-specific measures and metrics to track air quality and exposure progress over time. AB 617 requires that the CERP produces discernible emissions and exposure reductions, which can be demonstrated based on monitoring or other data. It is important to note, however, that as new air pollution emission strategies are developed and implemented, it may take several years to see significant reductions in exposure that reflected in ambient air measurements in the community. It may also take some time to deploy the monitoring systems necessary to measure these changes and to develop and run community-specific air quality models. These air quality and exposure metrics are, therefore, most appropriate for a final assessment at the five-year milestone mark, though interim assessments and monitoring will be done to help inform all stakeholders.

Source Identification (SI) refers to air monitoring conducted to for identify the location(s) of previously unknown or specific sources of emissions (e.g., fugitive dust from an industrial source, leaks from oil/gas production and drilling activities), determine the contribution of different potential emission sources to the measured ambient levels, and inform subsequent air monitoring or enforcement actions.

Source Characterization (SC) refers to air monitoring procedures focus on improving our understanding of the location, variability and composition of known or previously unidentified emission sources, either by direct measurements using in-situ monitors on mobile platforms or through the acquisition of secondary data/information (e.g. infrared camera video, canister grab samples, etc.) while tracking the pollution plume to possibly locate the potential source, or during follow-up investigations. It should be noted that mobile platforms can also be used to conduct stationary measurements at appropriate locations (e.g., downwind of the emission source) for short or long periods of time (e.g., minutes to hours, as appropriate) to better characterize the emissions from the identified sources.

Concentration Mapping (CM) refers to mobile air monitoring procedures designed for measuring the concentration of target air pollutants along the driving route in the survey area. The main applications of concentration mapping include, but are not limited to, finding areas with localized enhancements in air pollutants, assessing the levels of air pollutants in areas near known emission sources, and/or evaluating

the relative contribution of source emissions to local air quality. For these applications, the survey area should include sufficient spatial range to illustrate changes in pollutants' concentrations.

For concentration mapping applications, the measured pollutants levels and their spatial variability may vary substantially depending on the time of the measurements (e.g., morning rush hour vs. late afternoon) and meteorology (e.g., atmospheric boundary layer height and wind speed/direction during different times of the day and seasons). Additionally, if emissions are episodic in nature, they may not be detected during a single survey even under favorable wind conditions. Therefore, in order to produce stable and representative air pollution maps, repeated monitoring passes during different times of the day under a variety of meteorological conditions are required. Moreover, to correct for temporal biases that result from the slowly varying background concentrations over the course of a day, background data from fixed monitors may be used to develop a time-of-day adjustment factor, when available.

Compliance Support and Health-Based Information (CHBI) refers to air monitoring data that can be used to support compliance and enforcement actions or to provide the basis for comparison against air pollution standards and known health thresholds. To achieve the data quality that is needed to support these actions, air monitoring methods and equipment that are capable of producing data of appropriate quality shall be selected.

Community Engagement and Education (CEE) monitoring is primarily achieved by working with community members to deploy air quality sensors for measuring certain particle and gaseous pollutants. Sensors have the potential to provide meaningful local air quality data as part of a coordinated, well-designed community-led air monitoring. They can be used alone or within a network to engage and educate citizen scientists and community members in different aspects of the air monitoring process.

5 Past and Ongoing Monitoring Programs in the SLA Community

South Coast AQMD currently operates one regulatory air monitoring station in the SLA community and has conducted specialized air quality measurement activities in the past. Community-led air monitoring projects have also been conducted by different community organizations. Below is information regarding existing and past air monitoring projects and programs within the SLA community boundary. Monitoring data collected as part of these efforts will be used to complement the data that will be gathered during AB 617 implementation and will greatly enhance our understanding of the impact that different emission sources have on air quality in this community. The CAMP is developed based on sound scientific principles and successful practices that build on knowledge gained through the existing and upcoming community air monitoring programs described below. This approach allows for the ability to accommodate the diversity of air monitoring objectives in each community.

5.1 Regulatory Air Monitoring Stations

The South Coast AQMD operates 38 regulatory ambient air monitoring network stations and 4 single pollutant impact (lead) air monitoring sites in the Basin. Currently there is one regulatory station in the SLA community in Compton (Figure 5.1). Measurements at this air monitoring network station focuses on criteria air pollutants to ensure attainment with air quality standards set by the U.S EPA, and provides limited information on air toxics (see Table 5.1 for details). Just outside of the boundary is the Central Los Angeles station (Figure 5.1, Table 5.1), which is also part of the National Air Toxics Trends Station (NATTS) and Photochemical Assessment Monitoring Station (PAMS) networks. More information on South Coast AQMD's ambient air monitoring network can be found at http://www.aqmd.gov/home/air-quality/clean-air-plans/monitoring-network-plan.

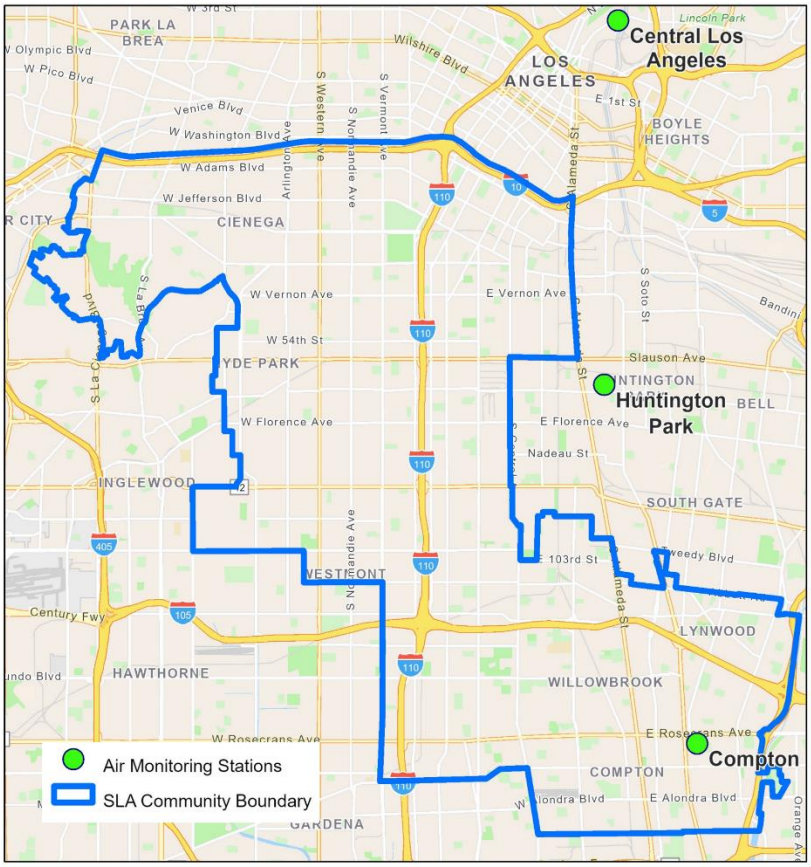

Figure 5.1: *Map of Locations of Air Monitoring Network and MATES V fixed monitoring stations in and near SLA (see text)*

Table 5.1: *Location and Pollutants Monitored at Compton and Central Los Angeles Air Monitoring Network Stations*

Station Name	Site Address	Pollutants Monitored
Compton	700 N. Bullis Road Compton, CA 90221	CO_2, NO_2, O_3, Pb, PM2.5
Central Los Angeles	1630 North Main Street Los Angeles, CA 90012	Continuous: CO, NO_2, SO_2, O_3, PM2.5, PM10, Black Carbon, Ultrafine Particles Time-integrated: Speciated PM2.5, VOCs, TSP metals, Cr^{6+}, Carbonyls

5.2 Multiple Air Toxics Exposure Study (MATES)

The MATES program is designed to characterize long-term trends in regional air toxics, that also has a focus on EJ communities and other highly impacted areas. The enhanced air monitoring conducted during each MATS study provides information on air toxic pollutants monitored at ten sites located throughout the Basin for a one to two-year period. Over 30 air pollutants are measured at each fixed station, including gaseous and particulate air toxics. These measurements allow tracking of the ambient concentration of the measured pollutants over time. MATES also includes the development of an air toxics emissions inventory,

and modeling activities to characterize health risks from long-term exposure to regional air toxics levels in residential and commercial areas.

The most recent MATES study (MATES V) was conducted from April 2018 to May 2019, and a report to summarize the findings was finalized in August 2021. One of the MATES V fixed monitoring stations was located within the SLA community boundary at the Compton Air Monitoring Station, and two other stations were located just outside of the boundary at the Central Los Angeles air monitoring station and in Huntington Park, which is now also the location of the baseline monitoring station for the Southeast Los Angeles AB 617 community (Figure 5.1). Since MATES is repeated periodically it can provide information on air toxics trends over the course of the AB 617 Program and be used for tracking the effectiveness of emission reduction strategies. While the study period for the next MATES measurements has not yet been determined, it is expected to be held during the five-year CERP and CAMP implementation period for SLA. More information on MATES can be found at: http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies.

5.3 AllenCo Monitoring

AllenCo Energy, Inc. is an oil field and gas production facility located in the University Park area of the City of Los Angeles. Between 2010 and 2014, South Coast AQMD inspectors responded to almost 300 odor complaints, conducted more than 150 inspections, and issued 18 notices of violation (NOVs). In October 2013, the South Coast AQMD initiated monitoring at sites near the facility, including monitoring for volatile organic compounds (VOCs) and hydrogen sulfide at Mount Saint Mary's College, located next to AllenCo. In November 2013, AllenCo temporarily shut down operations to repair equipment which was believed to cause the odors. South Coast AQMD continued to collect VOC samples while AllenCo was shut down, though early 2020 when measurements stopped due to the statewide pandemic-related stay-at-home orders. In addition to fixed site monitoring, mobile measurement surveys were also conducted around Allenco in 2019 as part of a larger EPA Community Scale Air Toxics Ambient Monitoring study focused on characterization of air pollutant emissions from oil refineries and oil wells in the Los Angeles air basin. As part of this CAMP implementation, additional measurements will be conducted around AllenCo to conduct further assessments of air quality conditions in communities nearby.

5.4 Watts Rising Air Quality Monitoring Network

The Watts Rising Air Quality Monitoring Network is a network of 13 air quality sensors located through the Watts Rising project area. This network was developed in response to community members' desire for neighborhood-level air quality data and to provide air quality insights to the Watts Rising program. The program was developed through partnerships with the City of Los Angeles, the County of Los Angeles, South Coast AQMD and Sonoma Technology, Inc. Network design and monitor placement was heavily informed by input from community residents and from a focus group comprised of representatives from different community groups.

The sensors deployed include seven Clarity Node-S air sensors and six Aeroqual AQY v1.0 air sensors. The Clarity Node-S air sensors measure PM2.5, NO_2, temperature and relative humidity, and these measurements began on July 14, 2020. The Aeroqual sensors measure PM2.5, NO_2, O_3, temperature and relative humidity and began measurements on September 1, 2020. An additional Aeroqual sensor is collocated with reference instruments at the Compton air monitoring station so that results from the two can be compared and used to identify any changes in performance.

Further information on the network, including sensor types and locations and study reports with results and air quality insights can be found online at https://www.wattsrising.org/data/cleanair.

5.5 SCLA-PUSH Air Monitoring

Launched in January 2019, the South Central Los Angeles Project to Understand the Sources and Health Impacts of Local Air Pollution (SCLA-PUSH) aims to help South Central LA organizations and community residents better understand the state of air quality and health in their community and engage in air monitoring and data analysis to advance community-driven solutions in air quality policy.

SCLA-PUSH designed a number of trainings and activities to advance community engagement and capacity building. SCALA-PUSH created the Air Quality Academy — an innovative two-day training session that teaches community members the science of air pollution, the process of collecting data, and how to engage in policy and regulatory change. For more information here: https://sclapush.org/en/our-stories

SCLA-PUSH utilized a number of approaches to collect data on air pollution, community health, and the physical stressors of health for the South Central LA catchment area. During and following the Air Quality Academy, trained graduates conducted community air monitoring and ground truthing to identify air pollution sources, pollution hot spots, traffic volume counts, and identification of incompatible hazardous land uses. Also, through ground truthing walks, trained residents collected air quality data using low-cost portable sensors, AirBeam and Ptrak, and stationary PurpleAir monitors. Data from this project can be viewed on the SCLA-PUSH website: https://sclapush.org/en/our-data#!

SCLA-PUSH, in collaboration with the University of Southern California academic research team, also deployed 5 stationary PurpleAir sensors in locations identified as hot spots and areas of concern by the community. PM2.5 data from these sensors was analyzed along with data from existing PurpleAir sensors located in South Central LA deployed by other community organizations and residents. In total, data from 11 total PurpleAir sensors covering the period from May 1, 2019 to April 30, 2020 was analyzed. SCLA-PUSH Monitoring and research findings can be found online at https://sclapush.org/user/themes/sclapush/files/SCLA-PUSH_Final_Report_2019-2020.pdf

5.6 Study of Neighborhood Air near Petroleum Sources (SNAPS)

The SNAPS program is a CARB initiative developed in order to better understand and characterize air quality in communities located near oil and gas operations. Monitoring for this program has already begun in Lost Hills in California's Central Valley, and monitoring near the Inglewood Oil Field is projected to begin in 2022 and last for one year. The monitoring activities will include measurements from two fixed monitoring sites and a mobile platform, with the proposed fixed site locations being inside or just outside of the SLA CSC boundary adjacent to the Inglewood Oil Field. Measurements will include VOCs, including BTEX (benzene, toluene, ethylbenzene, xylenes), methane, hydrogen sulfide, metals, and criteria pollutants. More information on the SNAPS program can be found on the CARB website: https://ww2.arb.ca.gov/our-work/programs/study-neighborhood-air-near-petroleum-sources. South Coast AQMD staff will work with CARB to leverage this program and coordinate air monitoring activities at oil and gas wells in the SLA community.

6 Air Monitoring Equipment and Methods

Selecting a scientific air monitoring approach and appropriate monitoring methods and equipment is crucial to the success of the CAMP and to satisfy community specific air monitoring objectives. SLA covers a large

and densely populated geographical area that is affected by a variety of air pollution sources. Consequently, multiple air monitoring methods are necessary to address the community's air quality priorities. South Coast AQMD staff will use a combination of different air monitoring methods and instruments to conduct air monitoring to support the implementation of community-driven and measurement-based emission and exposure reduction strategies. These methods include mobile and fixed-site air monitoring, which can be supplemented by air quality sensors. Mobile air monitoring is typically conducted using real-time instruments for wide-area measurement surveys, to help identify locations with elevated levels of specific air pollutants, and provide information about air pollution levels near a potential source. Fixed air monitoring is conducted by placing one or more measurement instruments at strategic locations to characterize emissions over time, provide real- or near real-time concentration readings of air pollutants, and to satisfy other air monitoring objectives. Additionally, air quality sensors can be deployed to supplement the overall monitoring efforts by expanding the geographical coverage of the measurements and providing real-time air pollution information for certain pollutants, such as particulate matter (PM), nitrogen dioxide (NO_2), and ozone (O_3). A detailed description of the monitoring methods and technologies that could be deployed in SLA and the air pollutants to be measured in this community is provided below.

6.1 Fixed Monitoring

Fixed air monitoring, also referred to as stationary monitoring, is conducted by placing an air monitor or a suite of air monitors at strategic locations to satisfy community specific air monitoring objectives. The fixed monitoring locations are determined after evaluating a variety of site selection criteria and will depend on the ability to obtain appropriate site access permissions. Some of these criteria include but are not limited to: site suitability for air quality monitoring; proximity to emission source(s) and/or receptors; infrastructure, access and safety; and long-term availability.

The most common monitoring methods that are used for AB 617 community air monitoring applications using fixed monitoring can be categorized as: well-established and regulatory monitors, research-grade monitors, and air quality sensors and sensor networks.

6.2 Fixed Monitoring with Well-Established and Regulatory Monitors

South Coast AQMD conducts air measurements and laboratory analyses to satisfy the requirements of federal and state programs using well-established and regulatory monitoring methods. This includes collection of time-integrated samples (often followed by subsequent chemical analysis, depending on the monitoring purpose), as well as operation of continuous monitors. Selected air monitoring methods will have to satisfy both the short- and long-term objectives of the monitoring activity. Time-integrated samples are typically collected over a 24-hour period can help assess trends over the long-term, detect typical urban variations of the target pollutant(s), and determine potential air quality impacts at specific locations. Continuous monitoring is sometimes necessary to evaluate the immediate impact of emissions, identify sources of pollution, or provide high time-resolution data in near real-time (e.g., hourly). The duration of fixed monitoring measurements depends on the specific air monitoring objectives but could vary between several weeks and several months, or even years.

Well-established and regulatory monitors can be installed inside air monitoring stations or in trailers to conduct measurements at strategic locations (e.g., in an easily accessible and safe area downwind of an identified air pollution source) in the community to provide the basis for comparing against air pollution standards and known health thresholds, assessing regional air quality and community impact, and evaluating the progress of emission reduction strategies. The monitoring stations and trailers are typically

also equipped with wind measurement systems to better characterize and potentially locate the source(s) of the measured air pollutants.

When applicable, battery-operated portable monitors can be deployed near (e.g., upwind and downwind) a potential emission source to determine its contribution to the observed ambient levels. This type of monitoring can help characterize the emissions from a specific source and gather insight into the specific process(es) that are leading to those emissions.

Established and regulatory monitors can provide the basis for comparing the measured levels against known health thresholds with a high level of confidence. They can also provide actionable data for comparing the measured levels against rules limits and requirements in support of compliance and enforcement actions. The Quality Assurance Project Plan (QAPP)[2] outlines the procedures that will be taken to ensure that the fixed station data is of the appropriate quality and meets the project requirements.

6.3 Fixed Monitoring with Research-Grade Monitors

New technological advances are transforming and revolutionizing air quality measurements. South Coast AQMD staff is actively leading research to further develop, evaluate, and implement the use of a wide array of new air quality monitoring approaches and technologies. South Coast AQMD continuously evaluates advanced air monitoring technologies and methods to enhance its capability for air quality investigations and expand the air monitoring and analysis toolbox. These efforts are mainly focused on the use of instrumentation for real-time or near real-time measurements of particle and gaseous pollutants with a particular focus on air toxics. This is necessary to achieve an accurate assessment of potential health impacts and for facilitating the identification and characterization of emission sources. More established monitoring methods (e.g., those used for regulatory purposes) used for air toxic measurements are generally based on the collection of 24-hour integrated average samples, which are then analyzed in the laboratory using robust, but labor-intensive, analytical procedures. As a result, samples may take weeks to process, and results are often delayed and not readily available. Moreover, time-integrated samples do not fully account for shifts in environmental conditions, such as short-term spikes in ambient concentrations of the pollutant(s) of interest. Air quality is dynamic and complex, and often exhibits large temporal and spatial variations due to changes in meteorological conditions, local topography, and source emission rates, which contribute to variations in emissions, transport and deposition of air pollutants. Advances in measurement technology continue to provide innovative, reliable and practical solutions to quantify the ambient levels of gaseous and particulate air pollutants over averaging times ranging from seconds to hours. The new generation of high-time resolution monitors can capture the temporal variability of air pollutants continuously and in real- or near real-time. However, these instruments are expensive and require specific siting and data infrastructure, involve highly specialized procedures for operation and analysis, and often require additional time for data validation and analysis.

Overall, research-grade monitors can be used for different purposes in AB 617 community air monitoring projects, and are usually employed when trying to measure air toxic pollutants that are more difficult to monitor with more traditional air monitoring techniques and when monitoring goals and objectives require simultaneous measurements of various species in real- or near real-time.

[2] QAPP for AB 617 Community Air Monitoring Program available here:http://www.aqmd.gov/docs/default-source/ab-617-ab-134/camps/qapp-for-ab-617-community-air-monitoring-program-(100620).pdf?sfvrsn=6

6.4 Air Quality Sensors

With recent advancements in sensor technology, lower-cost devices for measuring particle and gaseous pollutants are now available for community monitoring. For the purpose of most AB 617 community air monitoring projects, air quality sensors will be used as stationary monitors to characterize the spatial and temporal variability of the pollutant(s) of interest, although mobile deployments and handheld devices can also be used for certain applications. Stationary sensors may also be used for community near-source monitoring, community education and outreach, and hotspot identification. Air quality sensors are capable of providing real-time air quality information with spatial and temporal resolution that is often greater than what can be achieved by other, more established monitoring technologies. Although sensors offer great potential, currently available devices can only measure a limited number and types of pollutants typically criteria pollutants such as PM, O_3, and NO_2 with limited options for air toxics. Additionally, their accuracy, reliability and overall performance vary widely and have a lot of uncertainty in the results. Despite these limitations, sensors can be used effectively for community monitoring, provided their performance has been well characterized prior to their use, and is appropriate for their intended application. For the purpose of this CAMP, air quality sensors will mainly be used to supplement data from fixed monitoring stations, to characterize the spatial and temporal variability of the pollutant(s) of interest, to educate the community members in the correct use and operation of this technology, and to engage them in the air monitoring process that will be developed and implemented in SLA.

Public education and outreach are important to increase the public's awareness and knowledge of air quality in their communities. Air quality sensors and sensor networks are excellent tools to engage and empower local community members in the various aspects of air pollution monitoring, while gathering hyper local air quality information in the area(s) of interest. Where there is community interest to learn more about sensors, South Coast AQMD staff will conduct training workshops to talk about the appropriate use and operation of this technology and how to interpret sensor data. Through its newly developed sensor library program, the South Coast AQMD will be able to provide sensors that community members can use for a limited period of time (e.g., weeks or months depending on needs and specific objective(s) of a community project) to address specific community needs and concerns, better characterize air pollution at the neighborhood level, increase community engagement and support the effective implementation of the CERP. Through this program, South Coast AQMD staff will work with the CSC and the MWT to build a community-driven sensor network in SLA. South Coast AQMD staff has extensive experience working with communities in the South Coast Air Basin and throughout the State of California in the development, operation and maintenance of sensor networks for air quality measurements.

Additional information on commercially available sensor technology can be found on South Coast AQMD's Air Quality Sensor Performance Evaluation Center (AQ-SPEC) website[3], and available resources include a comprehensive sensor educational toolkit designed for use by communities and citizen scientists interested in deploying air quality sensors. AQ-SPEC is the most comprehensive sensor evaluation program in the Unites States and its main goal is to provide citizen scientists and other sensor users with unbiased information on sensor performance based on rigorous field and laboratory testing.

6.5 Mobile Monitoring Platforms

Ambient levels of air pollutants can vary substantially within short distances in areas with multiple sources of air pollution. One of the strategies employed by the South Coast AQMD to capture the spatial variability of air pollutants and identify/characterize the major emission sources in communities involves the

[3] Air Quality Sensor Performance Evaluation Center (AQ-SPEC): http://www.aqmd.gov/aq-spec

deployment of high-time resolution instruments on mobile platforms and collect air quality data while in motion. This strategy can provide “snapshots” of air pollutant concentrations at a specific location and time and is ideal to survey large areas in a relatively short period of time. The ability of the mobile measurement platforms to drive in and around a community and follow the emission plumes as they are transported through the neighborhood by wind can be critical for hotspot identification. Mobile measurements can be conducted using real-time instruments to allow for community air pollution mapping at a higher spatial and temporal resolution than possible using conventional fixed monitoring methods. Mobile platforms are equipped with robust monitoring technologies (established and regulatory monitors and/or research-grade monitors) to provide on-site, high quality, analytical capabilities. This will allow South Coast AQMD staff to locate pollution hotspots for subsequent fixed monitoring, identify potential sources of emissions, better understand local exposure levels, and track changes over time. Mobile monitoring also allows for rapid deployments and helps South Coast AQMD staff to react quickly in response to emerging air quality issues.

Mobile monitoring also provides guidance on where to redirect focus and resources for subsequent and/or more detailed fixed monitoring. Moreover, mobile measurement platforms can be used to take stationary measurements for a relatively short period of time, when appropriate (e.g., for source characterization purposes).

SLA encompasses many industrial areas having a multitude of different emission sources. Areas that have such clustering of diverse sources are difficult to study and characterize using conventional air monitoring approaches. South Coast AQMD currently has four mobile platforms, each equipped with different instrumentation for the measurement of particulate and gaseous pollutants including air toxics. Mobile measurements may not be appropriate for situations in which the pollutant concentrations change significantly over time or emissions are expected to be intermittent.

The procedures that will be taken to ensure that the mobile monitoring data that will be collected as part of AB 617 program is of the appropriate quality and meets the project requirements is outlined in the QAPP document. Below is a brief description of each mobile platform and its capabilities.

Community Survey Mobile Platform: This platform is equipped with air monitoring instruments to measure the mass and number concentrations of PM of various sizes, black carbon (BC), NO_2, and methane (Table 6.1). The time-resolution of these air monitoring instruments ranges from seconds to minutes. This mobile platform is a powerful tool for identifying areas most impacted by diesel PM emissions. It can also be used to identify diesel PM hotspots, estimate the exposure impact of railyards, transportation corridors and idling spots, and to track progress of targeted emission reduction strategies. This mobile platform is also equipped with an anemometer and a Global Positioning System (GPS) to determine wind speed and direction and to map vehicle location, speed and bearing during air quality measurements. Real-time data is logged and displayed on on-board monitors, allowing the field operator to rapidly detect potential emission sources and follow plumes of interest. It should be noted that although this platform is capable of detecting the ambient concentration of various air pollutants in real- or near-real time, it typically takes a few days to fully validate and process the collected information and visualize it for public consumption. A few pictures of this platform and the instruments configuration/set-up are shown in Figure 6.1.

Figure 6.1: *Pictures of Community Survey Mobile Platform*

Table 6.1: *Air Quality Monitors Installed Inside Mobile Platform #1 and Measured Pollutants*

Monitor	Measured Pollutant
Teledyne (T640)	PM_{10} & $PM_{2.5}$ Mass
GRIMM (EDM 164)	PM1, PM2.5, PM10, TSP, Number Size Distribution (0.25-35 µm)
Teledyne (T500U)	NO_2
Aerosol Devices Inc. (MAGIC CPC)	Particle Number
Droplet Measurement Technologies (Photoacoustic Extinctiometer (PAX))	Black Carbon (BC)
Li-830	CO_2
Li-7700	CH_4

Optical Remote Sensing Mobile Platform: This platform is equipped with multiple research-grade monitors including advanced remote optical sensing (ORS) monitors that are capable of measuring the ambient concentration (and in some cases the emission rate) of a wide range of gaseous pollutants including air toxics (e.g. methane, non-methane VOCs, NO_2, SO_2, NH_3, benzene, toluene, ethylbenzene and xylenes; see Table 6.2) with time resolutions ranging between 1 and 30 seconds. Modern ORS techniques offer unique capabilities for monitoring trace gas emissions from point and area sources and concentration mapping of pollutants in communities in near-real time. They are especially effective in identifying leaks from fugitive emission sources, which are often extremely challenging to spot and/or quantify and therefore can be utilized for identification and characterization of VOC air pollution sources in the community. The ORS mobile platform is also equipped with a GPS for real-time recording of the position of the vehicle and onboard monitors for real-time data analysis and visualization. A Light Detection and Ranging (LIDAR; which provides vertical wind profiles) instrument for wind measurements is often deployed in conjunction with this vehicle for more accurate estimations of emission rates of VOCs from refineries and other industrial facilities. This state-of-the-art mobile laboratory will be utilized for accurate characterization of facility-wide emissions from industrial sources of VOC emissions, leak detection and follow up, concentration mapping, and assessment of community exposure to air toxics. Although this platform is capable of detecting the ambient concentration of various air pollutants in real- or near-real time, it takes several days to fully validate and process the collected information and visualize it for the public. Pictures of this platform and of its instrument configuration/set-up are shown in Figure 6.2.

Figure 6.2: *Picture of Optical Remote Sensing Mobile Platform*

Table 6.2: *Air Quality Monitors Installed Inside the ORS Mobile Platform and Measured Pollutants*

Monitor	Measured Pollutant
Solar Occultation Flux (SOF)	Total Alkane, Carbon-number, Alkenes, NH_3
Sky Differential Optical Absorption Spectroscopy (SkyDOAS)	NO_2, SO_2, HCHO
Mobile Extractive Fourier Transform InfraRed (MeFTIR)	Alkane, CH_4, C_2H_4, C_3H_6, C_4H_8, NH_3, CO, CO_2, N_2O
Mobile White Cell Differential Optical Absorption Spectroscopy (MWDOAS)	Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)

Trace Organics Mobile Platform: This platform is equipped with a state-of-the-art Proton-Transfer-Reaction – Time-of-Flight Mass Spectrometer (PTR-ToF-MS) capable of simultaneous real-time monitoring of hundreds of VOCs, such as aromatics (e.g., BTEX), oxygenates (e.g., acetaldehyde and acetone), sulfur species (e.g., methanethiol and mercaptans), and many others, present in ambient air. This is a fast-response instrument with a time-resolution of 1 second, which has high sensitivity to low concentrations of a wide range of VOCs (limit of detection (LOD) typically 1-100 pptv). The high sensitivity and broad suite of analyte detection of this mobile platform will allow South Coast AQMD staff to identify VOC hotspots and potential sources of VOCs, detect leaks, and conduct more detailed investigations of odor complaints.

Similar to the other mobile platforms, this platform is also equipped with a weather station and GPS to determine wind speed and direction, ambient temperature and relative humidity, and vehicle location and bearing. In addition, this platform is equipped with a $CH_4/CO_2/H_2O$ detector for coarse plume source identification. An onboard computer system allows for real-time data visualization to facilitate rapid detection and tracking of air pollutant plumes. Although this platform is capable of detecting signals of various air pollutants in real time, processing, validation, and visualization of the data is time consuming and can take from a few days to weeks to complete.

Figure 6.3: *Pictures of the Trace Organics Mobile Platform*

Table 6.3: *Air Quality Monitors Installed Inside the Trace Organics Mobile Platform and Measured Pollutants/Parameters*

Monitor	Measurement(s)
Tofwerk PTR-ToF-MS (Vocus-S)	Variety of VOCs
LI-COR (LI-7810)	CH_4, CO_2, water vapor
AirMar (WS-220WX-RH)	Location, heading, vehicle speed, wind speed/direction, RH, temperature, pressure

Multi-Metals Mobile Platform: This platform is equipped with an X-Ray Fluorescence (XRF) instrument that is capable of measuring ambient concentrations of several particulate metals (e.g., arsenic, nickel, chromium, manganese, lead, copper, etc.). The platform is also equipped with a mix of regulatory and research-grade instruments to measure the mass and number concentrations of PM of various sizes, black carbon (BC), NO_2, and carbon dioxide (CO_2) (Table 6.4). The time-resolution of this air monitoring

equipment ranges from seconds to minutes. This mobile platform can be used to identify particulate metal pollution hotspots in the community and characterize emissions from potential sources of particulate metals (e.g., metal processing facilities and auto body shops). It can also be used to identify diesel PM hotspots, assess the exposure impact of railyards, transportation corridors and idling spots, and to track progress of targeted emission reduction strategies.

This platform is also equipped with an anemometer for wind measurements, a Global Positioning System (GPS), and real-time data logging capabilities. This information is used by the operator to guide the mobile measurements, as well as to position the platform such that it can best capture emissions from potential sources. Although this platform is capable of detecting the ambient concentration of multiple metals and other air pollutants in real- or near-real time, it takes a few days to weeks to fully validate and process the collected information and visualize it for public consumption. Figure 6.3 shows a few pictures of this mobile platform and the on-board instruments.

Figure 6.4: *Pictures of Multi Metals Mobile Platform*

Table 6.4: *Air Quality Monitors Installed Inside Multi Metals Mobile Platform and Measured Pollutants/Parameters*

Monitor	Measured Pollutant
Xact 625i	Particulate Metals
GRIMM (EDM 164)	PM1, PM2.5, PM10, TSP, Number Size Distribution (0.25 - 35 µm)
Teledyne (T500U)	NO_2
Aerosol Devices Inc. (MAGIC CPC)	Particle Number
Droplet Measurement Technologies (Photoacoustic Extinctiometer (PAX))	Black Carbon
Li-830	CO_2
Airmar 200WX	Wind Speed and Wind Direction

7 General Community Air Monitoring Approach

The SLA community covers a large geographical area characterized by a wide variety of air pollution sources, making an approach that integrates multiple air monitoring strategies as described above is necessary to address the numerous air quality concerns identified by the CSC in an effective and comprehensive manner.

The general monitoring approach in SLA consists of conducting initial air measurement surveys and includes using mobile platforms. This will allow South Coast AQMD staff to identify and characterize any potential enhancements of air pollutants in areas of the community identified by the CSC as being potentially impacted by the selected air quality issues. In instances where elevated levels of pollutants are detected, the plume can be mapped by driving away from the source. Further source identification can be performed by detecting the pollution plume(s) and triangulating from the plumes back to the source using wind direction to guide the measurements. When a potential source of emission is identified, mobile platforms can be used to perform stationary monitoring near the potential source to characterize the emissions. While the mobile platforms are powerful tools for surveying a large area in a relatively short period of time, as well as for comprehensive source identification and characterization, they only provide a "snapshot" of the measured pollutants at the day and time when the monitoring occurred. Therefore, mobile measurements generally do not capture day-to-day variations or long-term trends in pollutant concentrations; when such data is needed, fixed air monitoring can be conducted to gather further information.

When emission sources are clearly identified as high priorities for air monitoring by the CSC and an initial assessment through mobile measurements is not needed, nearby locations will be surveyed to check the possibility of conducting fixed monitoring without preliminary mobile measurements prior. Fixed monitoring allows for a more comprehensive characterization of air pollution trends over an extended period of time, but it only provides air quality information at the specific location. The use of both mobile and fixed monitoring will allow for these methods to effectively complement each other.

In addition, the deployment of air quality sensors will augment the capabilities of fixed monitoring by expanding the spatial distribution of the air quality measurements for certain air pollutants (mainly PM, O_3 and NO_2). These sensors are becoming an attractive means for governmental agencies, local environmental groups, and individuals to evaluate air quality. As stated earlier, most of these devices are designed to measure criteria pollutants, although new sensors are being developed for monitoring total VOCs and BC. It should be noted that the deployment of sensor networks within the SLA community will only be considered if the pollutant(s) of interest can be measured using technology with an appropriate level of performance, as characterized by South Coast AQMD's AQ-SPEC.

Table 7.1 summarizes how different monitoring approaches can be used to achieve specific monitoring objectives.

Table 7.1: *Monitoring Approaches for Satisfying Specific Monitoring Objectives*

Air Monitoring Purpose	**Air Monitoring Approach**			
	Stationary Air Monitoring			**Mobile Air Monitoring**
	Established and Regulatory Monitors	**Research-grade Monitors**	**Air Quality Sensors/ Sensor Networks**	**Mobile Measurement Platforms**
Baseline Monitoring (BM)	Established and regulatory monitors can be installed in air monitoring stations or in trailers to conduct measurements at specific locations in targeted communities to provide the basis for comparing against standards and known health thresholds, assessing regional air quality and community impact, and tracking the progress of emission reduction strategies with a high level of confidence	Research-grade monitors can be installed in air monitoring stations or in trailers to conduct measurements at specific locations in targeted communities to provide the basis for comparing against standards and known health thresholds, assessing regional air quality and community impact, and tracking the progress of emission reduction strategies	N/A	N/A

Air Monitoring Purpose	Air Monitoring Approach			
	Stationary Air Monitoring			Mobile Air Monitoring
	Established and Regulatory Monitors	Research-grade Monitors	Air Quality Sensors/ Sensor Networks	Mobile Measurement Platforms
Concentration Mapping (CM)	N/A	N/A	Air quality sensor networks can be used to characterize the spatial and temporal variability of certain particle and gaseous pollutants within a community or a wide geographical area, and to identify pollution hotspots for certain particle and gaseous pollutants	Mobile platforms can be equipped with air monitoring instruments for continuous measurements of particulate and gaseous pollutants for conducting wide area and targeted surveys, pollution hotspot Identification, or concentration mapping
Source Identification (SI)	When applicable, fixed/stationary battery-operated portable monitors can be deployed near (e.g. upwind and downwind) of a potential emission source to determine the contribution to the observed ambient levels	N/A	Air quality sensors can be deployed at the fenceline of a facility to better characterize the spatial and temporal variability of certain particle and gaseous pollutants and help identify potential sources of emissions	Mobile platforms are powerful tools that can track air pollution plumes and conduct investigative monitoring to identify the specific source(s) of emission

Air Monitoring Purpose	Air Monitoring Approach			
	Stationary Air Monitoring			Mobile Air Monitoring
	Established and Regulatory Monitors	Research-grade Monitors	Air Quality Sensors/ Sensor Networks	Mobile Measurement Platforms
Source Characterization (SC)	Established and regulatory monitors can be deployed at the fenceline or near a facility (e.g. downwind) to characterize the temporal variability of targeted pollutants and gather insight into the specific process(es) that are leading to those emissions	Research-grade monitors enable simultaneous real-time measurement of various analyte groups that can be deployed near a facility (e.g. downwind) to characterize the temporal variability of targeted pollutants and gather insight into the specific process(es) that are leading to those emissions	Air quality sensors can be deployed at the fenceline of a facility to better characterize the temporal variability of certain particle and gaseous pollutants and gather insight into the specific process(es) that are leading to those emissions	Mobile monitoring can help improve our understanding of the composition and variability of known emission sources and determine emission source signatures
Compliance and Health-Based Information (CHBI)	Established and regulatory monitors used for measurements conducted at specific locations (e.g. upwind and/or downwind of an emission source) can provide the basis for comparing against known health thresholds and/or rules limits and requirements with a high level of confidence	Research-grade monitors used for measurements conducted at specific locations (e.g. upwind and/or downwind of an emission source) can provide the basis for comparing against known health thresholds and/or can be used in monitoring investigations to provide information in support of compliance and enforcement activities	N/A	Mobile measurements can provide a consideration for more robust monitoring, onsite measurements, and supplemental air monitoring in support of compliance and enforcement investigations

Air Monitoring Purpose	Air Monitoring Approach			
	Stationary Air Monitoring			Mobile Air Monitoring
	Established and Regulatory Monitors	Research-grade Monitors	Air Quality Sensors/ Sensor Networks	Mobile Measurement Platforms
Community Engagement and Education (CEE)	N/A	N/A	Air quality sensors for measuring particle and gaseous pollutants are excellent education and outreach tools, and can be used alone or within a network to engage citizen scientists and community members in different aspects of the air monitoring process	N/A

8 Air Quality Priorities and Associated Monitoring Actions

Each community has unique air quality challenges, and local community members have first-hand knowledge of necessary information, including emission sources and sensitive receptor locations. In order to ensure a collaborative process in developing and implementing a successful CERP and a CAMP, it is critical to understand the specific air quality concerns in the SLA community. Meetings of the CSC and MWT provide a forum for identifying community-specific air quality priorities and potential contributing sources of air pollution to develop consensus and a shared understanding of specific air pollution challenges. In addition to the active collaboration with the CSC, the South Coast AQMD engages in a robust public process to provide opportunity for broad engagement both during CAMP development and throughout its implementation. This is achieved through periodic community meetings, MWT meetings, workshops, South Coast AQMD Committee meetings, and South Coast AQMD Governing Board meetings. Input and feedback provided by the community will continue to be incorporated to improve and update the monitoring strategies throughout the implementation of this CAMP.

South Coast AQMD staff gathered information on the main CSC air quality concerns through a series of community meetings. The CSC identified five air quality priorities: Auto Body Shops (CERP Chapter 5c), General Industrial (CERP Chapter 5d), Oil and Gas (CERP Chapter 5e) and Metal Processing Facilities (CERP Chapter 5f) and the actions designed to address them, as outlined in the CERP. The different strategies designed to address each air quality priority are listed in the CERP actions, and an overview of the air monitoring actions is provided in Table 8.1 and described in detail below.

Table 8.1: *Monitoring actions identified in the CERP*

Air Quality Priority	CERP ref.	Action	Monitoring Purpose	Initial Monitoring Approach(es)
Oil & Gas Industry	Table 5f-1 A	(1) Prioritize locations for community air monitoring (2) Conduct air measurement surveys around oil drilling sites to identify and characterize any potential emissions	SC, CM, CHBI	Mobile Monitoring
Oil & Gas Industry	Table 5f-1 B	Collaborate with appropriate agencies and the CSC to determine if additional air monitoring is needed during specific well activities or under certain conditions	SC	TBD
Oil & Gas Industry	Table 5f-1 F	Identify opportunities to support citizen scientists to conduct community air monitoring	CEE	Air Quality Sensors/Handheld Monitors
Metal Processing Facilities	Table 5e-1 D	Conduct initial air measurement surveys near facilities of concern to identify and characterize any potential emissions.	SC, SI, CM	Mobile Monitoring
Auto Body Shops	Table 5c-1 E	Conduct initial air measurements surveys near facilities of concern (as identified under action B) to identify and characterize any potential emissions	SC, SI, CM	Mobile Monitoring
General Industrial Facilities	Table 5d-1 F	Conduct initial air measurements surveys near facilities of concern (as identified under action A) to identify and characterize any potential emissions	SC, SI, CM	Mobile Monitoring

8.1 Oil and Gas Industry

There are 19 Oil and Gas sites (c0nsititng of well drilling, oil extraction and other related operations) in SLA holding permits with South Coast AQMD (Figure 8.1), and the CSC expressed concerns about emissions resulting from oil and gas operations conducted at these locations. Residents have expressed concerns due to the adverse health impacts associated with proximity of these sites to residential areas. The CSC expressed particular concern about the AllenCo Energy, Jefferson, and Murphy drill sites in the northern part of the community, and the Inglewood Oil Field in the northwest.

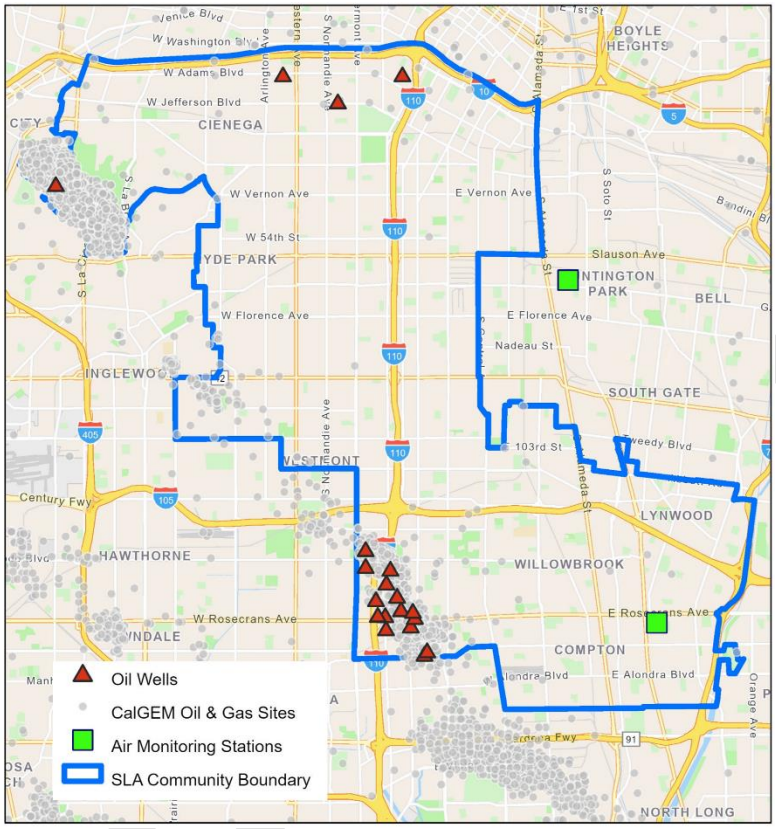

Figure 8.1: *Map of locations of oil & gas sites in SLA*

Air monitoring to address oil and gas operations has been a particular focus of the CSC in general and the SLA MWT in particular, as evidenced by the number of monitoring actions for this air quality priority in the CERP (see Table 8.1). Oil and gas activities are primarily associated with emissions of VOCs and methane, although other onsite activities can contribute to emissions of other pollutants, for example, PM and oxides of nitrogen (NO_x) from diesel use. The CSC has also expressed concerns about emissions from other activities such as acidizing injection wells, workover rig operations, and the use of odorants and other chemicals onsite. Given the transient nature of many of these activities, the CSC also expressed interest in exploring ways that community members can participate in monitoring near oil wells, in particular at the AllenCo Energy and Murphy drill sites. Accordingly, the monitoring actions in the CERP to address oil and gas seek to:

1. Conduct initial air measurement surveys near oil and gas sites
2. Identify if and what type of air monitoring is needed during specific well activities
3. Identify tools to support citizen scientists

The equipment, methods and protocols for initial measurements were discussed in detail with the MWT, as were the locations for monitoring. In addition to the permitted oil and gas sites, the SLA MWT has identified areas in Watts and along the Slauson corridor where community members have identified potential oil and gas impacts (Figure 8.1). Initial mobile measurement surveys will be conducted near the drilling sites within the community and in areas of concern identified by the CSC as potentially impacted by oil and gas operations. These measurements will initially rely on mobile monitoring, which is typically conducted using the Optical Remote Sensing Platform. However, the Trace Organics Platform may also be deployed, particularly when it is determined that enhanced VOC speciation is needed or where it is desirable to also characterize VOCs specific to certain onsite activities (e.g. odorant use).

Measurements made during these surveys will be used both to characterize air pollutants concentrations in these areas and to identify any localized enhancements that could be indicative of leaks. In the event that these are identified, further mobile surveys will be conducted following an approach that has been successfully implemented in other communities to characterize air pollutants in the vicinity of oil and gas sites. Under certain circumstances, this protocol also incorporates close coordination with South Coast AQMD's compliance team who may follow up using FLIR cameras and TVAs to confirm and determine the location of leaks. These findings are then used to confirm if enforcement action is needed, and quickly bring about corrective actions by the operator. A schematic of such integrated approach is shown in Figure 8.2.

In addition to initial mobile measurement surveys, South Coast AQMD will also work with the CSC and collaborate with other agencies to determine whether or not air monitoring should be conducted under certain conditions or during certain well activities, based on strategies to be developed in consultation with the MWT. If air monitoring is found to be desirable, the monitoring equipment, methods, and approach to be used will be selected based on the processes identified by the community and through collaboration with outside agencies. As per CSC and MWT prioritized high, South Coast AQMD staff will collaborate with CARB staff to identify opportunities to coordinate monitoring efforts near the Inglewood Oil Field and to receive updates on SNAPS monitoring activities and data once the program has begun.

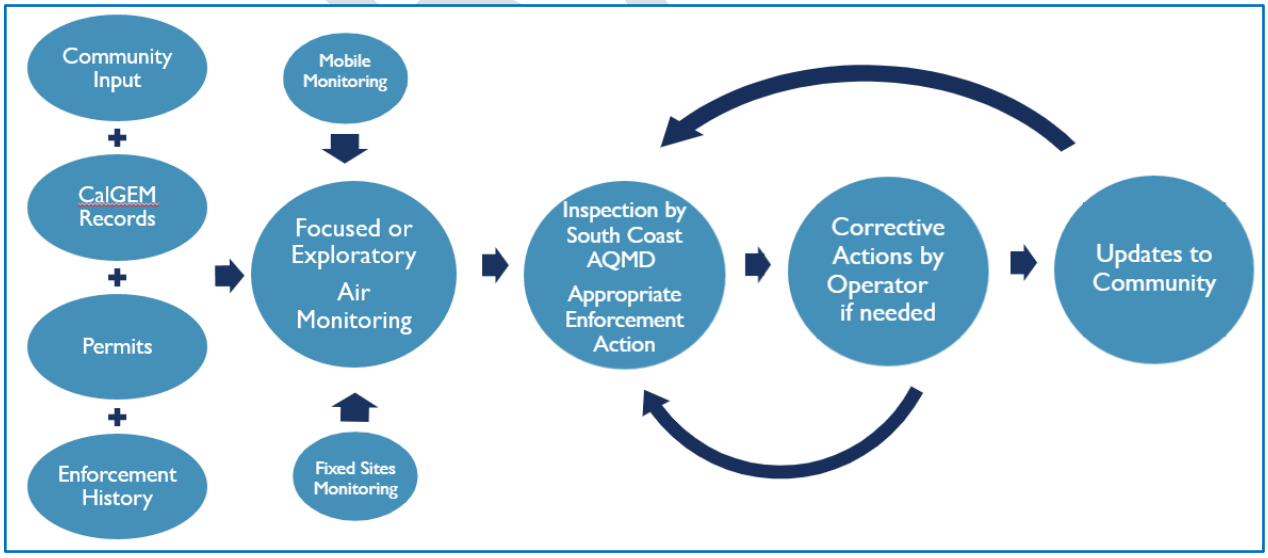

Figure 8.2: *Schematic representation of integrated air monitoring approach for oil wells*

8.2 Metal Processing Facilities

The South Los Angeles (SLA) community expressed concerns about health effects from emissions of criteria air pollutants and toxic air contaminants, such as lead and hexavalent chromium, and strong odors from metals facilities. In particular, the Community Steering Committee (CSC) expressed concerns with metal recyclers and metal scrap yards near sensitive locations, such as Atlas Metals, as well as areas with a high density of metal processing facilities along the Alameda corridor in Watts and in Compton.

There are 69 metals facilities with equipment permitted by South Coast AQMD operating within the SLA community boundary (Figure 8.3). These metals facilities conduct a variety of operations, including melting, plating, finishing, machining, cutting, shredding, grinding, and recycling. The operations performed at the facilities can potentially be a source of toxic metal air pollutants (e.g., cadmium, hexavalent chromium, lead, zinc, nickel, and arsenic). Most metal recyclers and metal scrap yards do not have equipment subject to South Coast AQMD permits. The operations performed at the facilities can be a source of toxic metal air pollutants (e.g., cadmium, hexavalent chromium, lead, zinc, nickel, and arsenic). A toxic metal air pollutant is a type of air pollutant which may cause or contribute to an increase mortality or an increase in serious illness or pose a present or potential risk to human health.

South Coast AQMD's efforts to address this air quality priority in the SLA community entail conducting initial air monitoring surveys near facilities of concern identified by the CSC in order to characterize any potential emissions. These surveys will use the mobile monitoring approach to measure air toxic metals around the metal processing facilities identified by the CSC and in surrounding communities. If potential sources are identified through mobile monitoring, stationary measurements may also be conducted near the identified

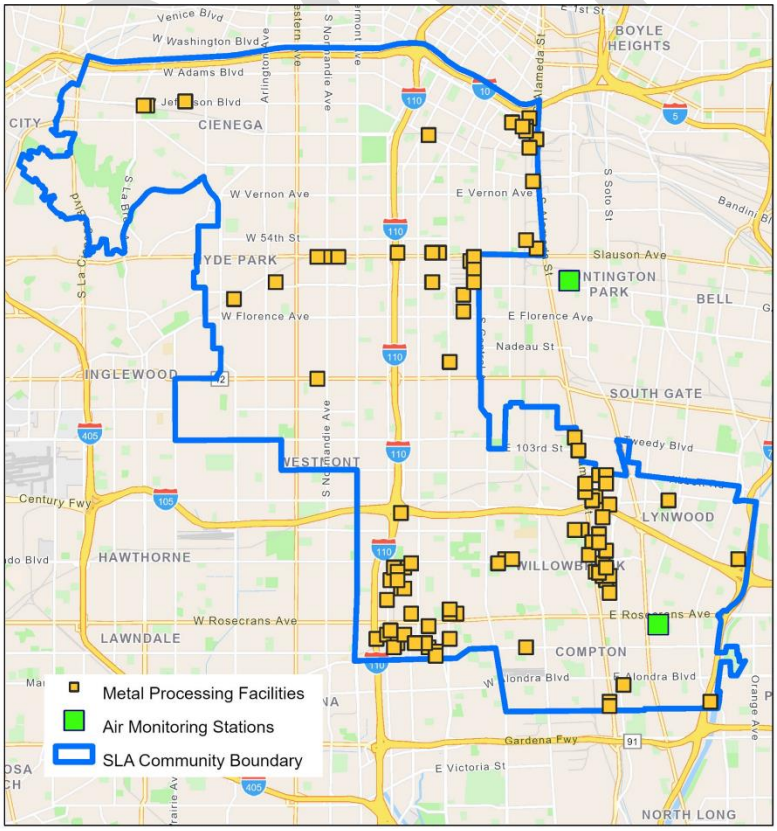

Figure 8.2: *Map of metal processing facilities in SLA*

facilities to better characterize their emissions. For this purpose, ambient levels of particulate metals may be measured using either continuous measurements or collection of 24-hr time-integrated samples for laboratory analysis, or a combination of both. In case these measurements suggest that any of the operations or other sources at the metal-processing facility of concern have the potential to emit Cr6+, fixed-site monitoring of Cr6+ will be conducted through the collection of time-integrated samples followed by laboratory analysis.

Findings from these monitoring efforts will provide information to support and inform CERP actions. When appropriate, follow-up compliance and enforcement actions will also be taken by the South Coast AQMD inspectors to mitigate emissions.

8.3 Auto Body Shops

The SLA CSC has identified auto body shops as an air quality concern, in particular the volume and activities of both permitted and unpermitted auto body shops and their proximity to residential areas, schools, and public gathering areas. There are approximately 89 permitted auto body shops within the SLA community boundary, and, in addition to permitted facilities, CSC members have also expressed concern about auto body work being conducted at vacant lots on Central Avenue, Florence Avenue, Western Avenue, Jefferson Boulevard, Manchester Avenue and along the Slauson corridor (Figure 8.4). CSC members believe that these small businesses are unaware of existing requirements, best management practices to reduce pollution burden, and the health impact of their operations on the community.

Some of these products may cause odors and emit air pollutants, including VOCs or toxic air contaminants such as metals like chromium and nickel. The emissions and odors may come from solvents evaporating

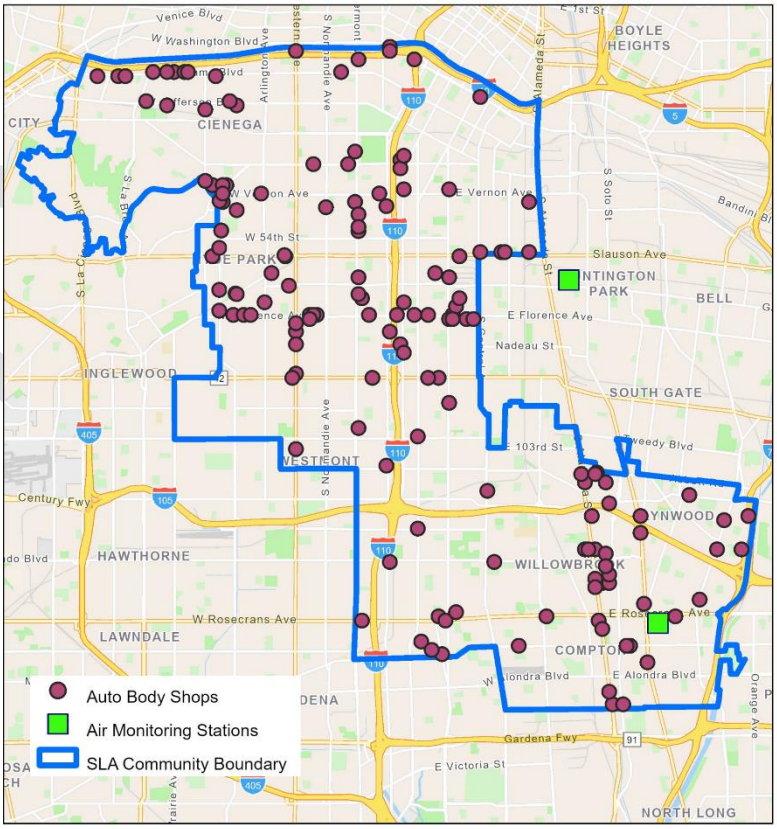

Figure 8.4: *Map of permitted auto body shops in SLA*

from paint and solvent applications, cleaning of parts, and improper storage. Auto body shops also conduct operations such as sanding and grinding, which can emit fine dust from metal compounds.

The paints, coatings and solvents used at auto body shops may cause odors and emit air pollutants such as VOCs, while sanding and grinding operations can emit fine dust that may contain metals. South Coast AQMD's monitoring strategy to address this air quality priority consists of conducting initial measurement surveys near auto body shops to identify any elevated levels of pollutants and characterize any emissions from these facilities. These surveys will focus on those facilities and areas identified and prioritized by the CSC and will initially rely on mobile monitoring using advanced air monitoring technologies for detection of VOCs and metals. Measurements will be made downwind from these facilities and concurrent measurement of wind speed and direction during surveys will be used to help identify possible sources of emissions. These surveys will initially rely on the Trace Organics Platform, which is capable of detecting a number of VOCs related to solvent and coatings use, and the Multi-Metals Mobile Platform, which can detect metals contained in dust from sanding and grinding operations. Findings from these initial surveys will be used to determine whether or not further surveys are required and/or additional measurements should be made (e.g., collection of samples for laboratory analysis). Measurements may also be expanded to other areas of SLA near auto body shops but not identified by the CSC as being of highest concern.

8.4 General Industrial Facilities

There are over 350 permitted general industrial facilities in SLA, and the CSC has expressed concern about the impact emissions from these facilities has on the community. Facility types of concern include pallet manufacturers, recycling centers, chemical manufacturing, dry cleaners, gas stations, tire manufactures, and decommissioned facilities, which typically require permits from South Coast AQMD or other agencies to operate. Emissions from these facilities can include air toxics, VOCs and metals, and facilities can also cause odors and emit fugitive dust, both of which are addressed by existing South Coast AQMD regulations.

Given the large number of facilities and wide variety of industries located in the community, the approach described in the CERP is to work with the CSC to determine the types of priority industries and emissions located in the community and identify target pollutants, and using this information to determine if air monitoring is needed and, if required, to recommend appropriate monitoring methods and a more targeted monitoring strategy to address this concern. Additional details regarding this specific air quality concern and the monitoring methods and strategies that will be implemented to address these specific concerns will be added as the conversation with the CSC progresses.

8.5 Mobile Sources

The SLA community is bounded by Interstate 10 in the north and Interstate 710 in the southeast, is intersected by Interstates 110 and 105, and a number of major roadways and railways, including the Alameda and Slauson corridors. The CSC expressed concern about emissions from the high volume of vehicles and trains moving through the community, and also expressed specific concerns about diesel vehicles and equipment being used at construction sites.

The traffic in the community consists of a high fraction of diesel trucks due to the presence of rail corridors, warehouses, and the associated goods movement in the area. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is often referred to as diesel particulate matter (DPM), which is a component of PM2.5. There is no technique to directly measure DPM (a major contributor to health risk); therefore, indirect measurements based on surrogates for diesel exhaust are used, specifically black carbon (BC). DPM is typically composed of carbon

particles (“soot”, also called BC) and numerous organic compounds. Diesel exhaust also contains gaseous pollutants, VOCs and NO_x.

The SLA CERP does not include specific monitoring actions to address Mobile Sources, a decision that was informed by previous monitoring results in other communities. Year 1 and Year 2 AB 617 communities also identified mobile sources as air quality priorities, and included CERP actions to conduct monitoring to assess impacts of vehicular emissions. These actions included mobile monitoring surveys, and findings in all communities were similar, revealing higher concentrations of pollutants associated with vehicular emissions closest to freeways and major roadways, with levels decreasing moving away from these sources. This combined with the information that the data was not used to inform any compliance and enforcement activities led the CSC to move away from monitoring actions for this air quality priority. However, expansion of air quality sensor networks in SLA will potentially capture some information about mobile source impacts, and information on mobile sources will inform their placement. Additionally, if it is determined during implementation that monitoring related to mobile sources is necessary to support a specific CERP action(s), the appropriate monitoring activities will be incorporated into the CAMP.

9 Data Reporting and Communication Plan

Implementation of the SLA CAMP will generate a large amount of data, and the following describes the methods by which South Coast AQMD will share this data, updates, findings, and other monitoring information to the CSC.

As part of AB 617 implementation, quarterly meetings of the CSC are held in order to provide updates to the community on CERP and CAMP activities. These quarterly meetings are the primary forum for updating community members on implementation and data from the air monitoring plan, and monitoring staff will be available to answer questions about and receive comments on the CAMP. However, quarterly meeting updates are necessarily brief and typically only include high-level information and findings. Therefore, more detailed discussions of monitoring activities and preliminary findings will be provided during MWT meetings. These discussions will be used to inform updates to the CSC.

Additionally, for those community members and other members of the public interested in a more complete exploration of the data, South Coast AQMD maintains on its website more detailed monitoring information as well as dedicated displays for AB 617 air monitoring data. As discussed in the General Community Air Monitoring Approach section above, air quality data is collected in two main modes: stationary (i.e., at a fixed-site location) and mobile (i.e., with a moving vehicle). This data is shared with the community in different ways depending on the monitoring on how it is collected, the data type, and the reporting purpose.

Data collected in stationary mode is categorized into continuous (near real-time) and time-integrated. Continuous, near real-time data refer to long-term measurements made at South Coast AQMD stationary monitoring sites with hourly or sub-hourly time resolution. This data is averaged every hour and becomes publicly available shortly after the measurements on the AB 617 air monitoring data display tool[4]. The online data display tool shows a map of each AB 617 community with markers for each South Coast AQMD stationary monitoring site within each community boundary (Fig. 9.1). Selecting one of these station markers displays additional information about the station (site name, description, current wind speed and direction) and provides a link to the raw data. The data sidebar shows a list of pollutants measured at that site (e.g., O_3, carbon monoxide, NO_x, PM, and others) and their concentrations for the previous hour as well as the previous 24-hour averages. In addition to the current concentration of pollutants, time series of pollutants are available in the sidebar and through the historical search function, where a user may display

[4] http://xappprod.aqmd.gov/AB617CommunityAirMonitoring/Home/Index

the time series of the pollutant of interest over a custom time frame. This data is also available for download on the site in spreadsheet format.

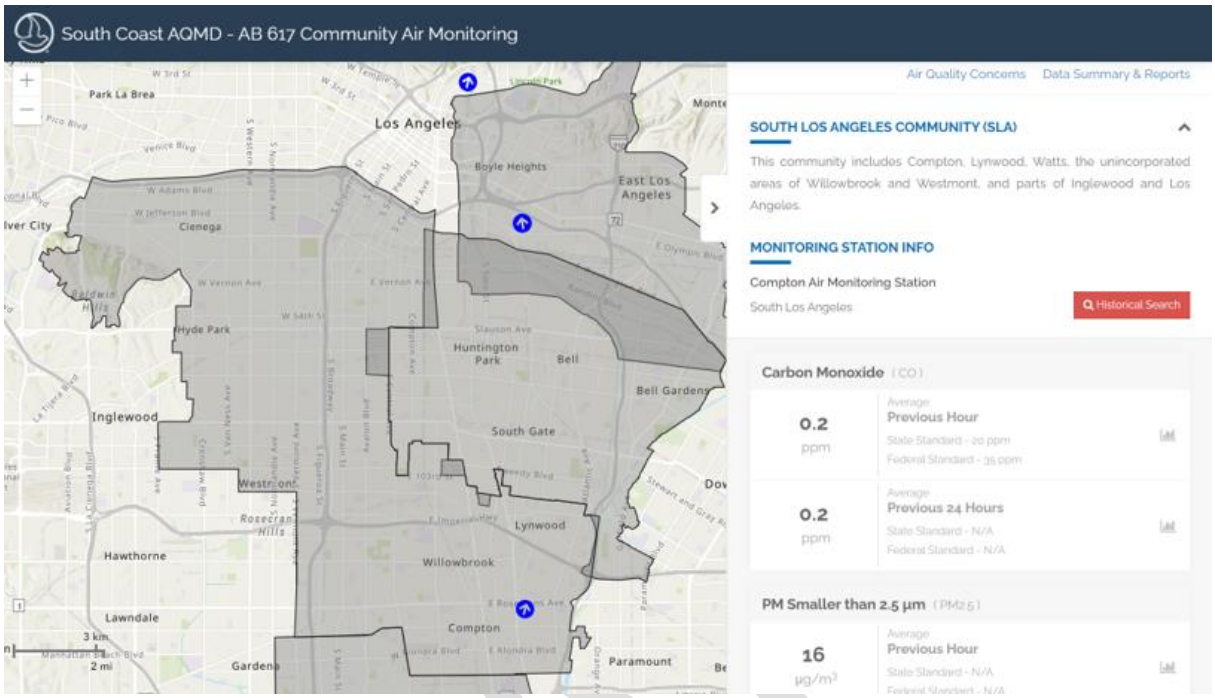

Figure 9.1: *Portal for air monitoring data display tool. Map of communities with fixed air monitoring sites is shown on the left with a list of measured pollutants and their current concentrations on the right*

In comparison to near real-time data, time-integrated data collected at fixed monitoring sites is made available periodically after laboratory analysis is finalized. Some examples of time-integrated data include samples for VOC analysis and filter samples for PM mass and composition (e.g. organic carbon, metals, etc.). The longer analysis, validation and processing time for this data precludes it from being shown in continuously and in real-time manner; instead it will be shown in an interactive data dashboard (currently under development) that will be updated on a regular basis when laboratory data has been processed. Similar to the continuous data display tool, the time-integrated data dashboard will include a map of stationary monitoring sites where time-integrated samples are collected, options for selecting the available pollutants, and different data visualization options (e.g., time series, box plots, other). The interactive nature of the data dashboard makes it possible to share a large amount of data in an efficient and easy to understand manner and allows the users to explore the data on their own. Furthermore, this allows the South Coast AQMD to share data with the community before writing a comprehensive summary report, which typically takes longer.

Similar to the stationary time-integrated data, mobile monitoring results will be available using an interactive dashboard when a representative number of measurements have been taken within the community and the data have been carefully validated, analyzed, and processed. This interactive dashboard will provide a map of air quality data collected during multiple days of mobile monitoring that enables the users to identify hot spots and visualize air quality levels near potential areas of concern.

In addition to the above ways which data is shared, regular written updates will be provided to the community in the form of air monitoring progress updates and progress reports. These documents will be

posted on the South Coast AQMD webpage dedicated to the AB 617 Community Air Monitoring program[5]. These progress reports, which are specific to each air quality priority, include sections describing the background and objectives of monitoring, the monitoring methods used, preliminary results, and next steps. In addition, each progress report includes one or more attachments with an in-depth description of all monitoring and data analysis methods.

As described above, separate tools and platforms are used to disseminate the air monitoring results to the community. New ways of sharing data and reports are being explored with the goal of integrating all of these tools into a single platform and to consolidate all air monitoring results for easier public access and use.

In addition to updates on CAMP implementation and findings, quarterly meetings will be used to inform CSC members of new data that has become available. Additionally, as new data display tools are developed, training will be provided during both quarterly CSC meetings and MWT meetings to ensure community members are familiar with the various platforms and how to navigate to the data of interest.

[5] http://www.aqmd.gov/nav/about/initiatives/community-efforts/environmental-justice/ab617-134/ab-617-community-air-monitoring