COMMUNITY AIR MONITORING PLAN

Shafter AB 617 Community

San Joaquin Valley Air Pollution Control District

July 12, 2019

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I.   AB 617 AND COMMUNITY AIR MONITORING

Assembly Bill (AB) 617, signed into law in July 2017, has resulted in a statewide effort to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants statewide through new community-focused and community-driven actions. AB 617 provides mechanisms and resources to implement community-specific air quality monitoring networks, develop and implement emission reduction programs; improve availability of data and other technical information; and invest substantial funding in the community through voluntary incentive funding measures. Importantly, the development of the community monitoring plan and the implementation of emission reduction measures are guided by advice and knowledge of local community members, through their input and involvement on Steering Committees for each AB 617-selected community.

Throughout the course of AB 617, the Shafter Community Steering Committee has worked with the San Joaquin Valley Air Pollution Control District (District) to provide input into this AB 617 community air monitoring plan (CAMP), outlining how the District will implement monitoring within the community.

II.   COMMUNITY IDENTIFICATION

The District worked closely with the California Air Resources Board (CARB), residents, advocates, and stakeholders within the San Joaquin Valley (Valley) to identify and select communities for the first year of AB 617 implementation. The District's initial community identification and prioritization analysis for the first year of AB 617 implementation was based on extensive air quality analysis, numerous health indicators from the state's CalEnviroScreen model, and various other socioeconomic indicators. Shafter, a rural populated community in northern Kern County, was selected as a first year community by the California Air Resources Board in September of 2018.

Shafter, as defined by the boundary in Figure 1, has a current estimated population of over 19,000, and is influenced by rural sources of emissions, including the agricultural and oil and gas production industries. In addition, major roadways in the community include Highway 43 and the Lerdo Highway, both crossing directly through Shafter and contributing to mobile source emissions in the area. Locomotive emissions also influence the community as railroad tracks run parallel to Highway 43. Local area-wide sources such as gas stations, commercial cooking, and consumer products also contribute to the community's cumulative emissions exposure. The Shafter Steering Committee collectively recommended that the District look beyond the geographic boundary at sources out to a 7 mile radius from the center of the City of Shafter for potential impacts to community, as depicted in Figure 1.

Figure 1   Shafter Community Boundary (Light Blue) and 7 Mile Radius (Dark Blue Circle)
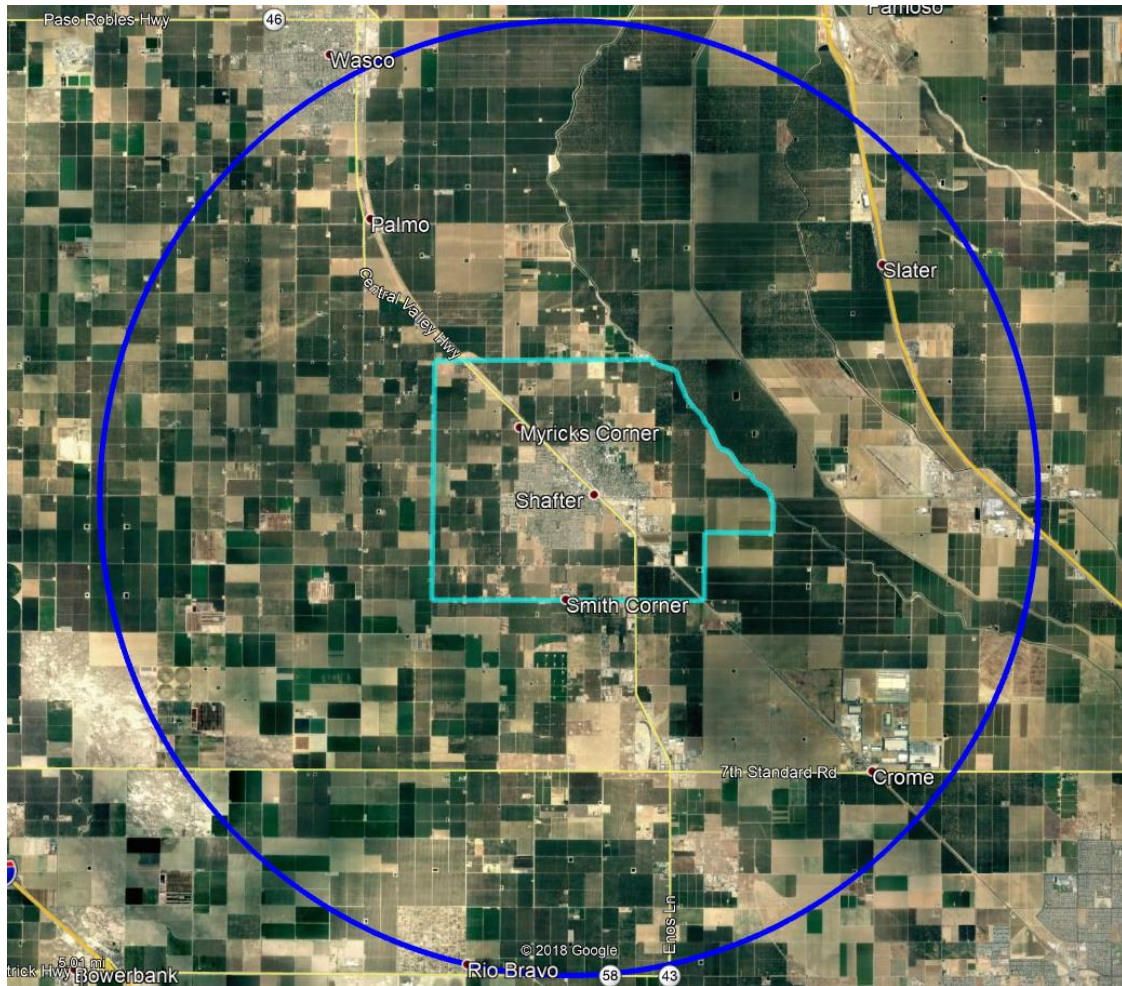
Geographically this community is bounded by Merced Avenue to the north, the Calloway canal and Cherry Ave. to the east, Orange Street to the south, and Scaroni Avenue to the west. This area does not encompass the entire boundaries of the City of Shafter but the core, along with the small community of Smith Corner to the south, as well as the nearby rural areas surrounding the area. The City of Shafter includes a number of businesses, schools, and residential areas.

The Shafter community is impacted across a number of health indicators, as summarized in the CalEnviroScreen tool. The Shafter community includes high average percentiles among its census tracts within many indicators, with many averages exceeding the 70th percentile for the state. Specifically, the average Overall CES Score for this community exceeds the 86th percentile for the state, while the average Cardiovascular Disease score exceeds the 85th percentile for the state. The Shafter community also includes census tracts that rank very high among all tracts across the state, specifically some that rank above the 90th percentile. Notably, this community includes tracts that rank above the 90th percentile for Poverty and Unemployment, with

Unemployment ranking above the 98th percentile. This community includes census tracts with health indicators that exceed the 80th percentile in a number of the listed categories, indicating that this community includes areas impacted by environmental challenges.

III.   SHAFTER COMMUNITY STEERING COMMITTEE

On November 1, 2018, the District held a kick-off meeting for the Shafter community to discuss the opportunity for public participation, community engagement, and steering committee formation. Following the kickoff meeting, the District formed the initial Shafter Steering Committee (Steering Committee) by soliciting involvement from residents, businesses, environmental justice advocates and policy makers from the community interested in helping the District understand the specific needs of the community and develop effective clean air strategies to address their concerns.

Steering Committee is comprised of **29 members** representing the following groups:

19 Residents   4 EJ Advocates
4 Government Officials   2 Business Addresses in Community

Regular monthly community steering committee meetings proceeded as follows:

- **December 16, 2018**: Discussed goals of AB 617 and opportunities available to residents and businesses through various incentives programs
- **January 14, 2019**: Discussed Steering Committee Charter, a document outlining the roles, responsibilities, and expectations of the Steering Committee and its membership. Also Discussed community boundary the permitted sources within it
- **February 11, 2019**: Discussed monitoring resources, potential locations, and the possibility of having the Department of Pesticide Regulation (DPR) attend the next meeting to further explore pesticide monitoring in AB 617 process
- **March 11, 2019**: DPR-led discussion on pesticide regulation, monitoring, and notifications
- **April 8, 2019**: Discussed and finalized initial community air monitoring locations, reviewed inventory development updates, and began discussing the Community Emissions Reduction Program outline
- **May 13, 2019**: Discussed the continued statewide and District-wide efforts to control various sources of pollution
- **June 10, 2019**: held a world café style meet and greet to deep dive into sources of concern and understand draft strategy concepts
- **June 24, 2019**: Committee exercise to further develop Community Emission Reduction Program strategy concepts

In effort to keep the community monitoring planning efforts transparent, the District has developed a website informing committee members and the public of community

monitoring initiatives. This website also has information about all local AB617 initiatives, agendas and documents for upcoming Steering Committee meetings, community monitoring and emission reduction plans, and a portal to real-time air quality data collected by the District's community air monitoring program. The webpage, which will be continuously updated as more information becomes available, can be accessed at http://community.valleyair.org/

Any questions about the following community-specific air monitoring plan can be addressed to:

<div align="center">

Jessica Olsen
Program Manager
San Joaquin Valley Air Pollution Control District
jessica.olsen@valleyair.org | (559)230.5988

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IV.   PURPOSE OF AIR MONITORING IN SHAFTER

The District operates and maintains an expansive network of air monitoring sites throughout the eight counties of the San Joaquin Valley (Valley) intended to measure ambient air quality across the region. A total of 24 sites are currently operated directly by the District or in collaboration with the California Air Resources Board (CARB). In addition, ARB also independently operates a number of air monitoring stations in the Valley, along with additional sites operated by the National Park Service and tribal nations. In total, 39 air monitoring sites are currently in operation in the San Joaquin Valley. This current network (Figure 2) Valley measures concentrations of criteria pollutants for which the U.S. EPA has established a health-based air quality standard. In addition, the network measures a number of meteorological parameters across the Valley. Pollutants monitored include ozone, PM10 and PM2.5, nitrogen oxides, sulfur oxides, hydrocarbons, and carbon monoxide.

Figure 2   Ambient air monitoring sites in the San Joaquin Valley Air Basin
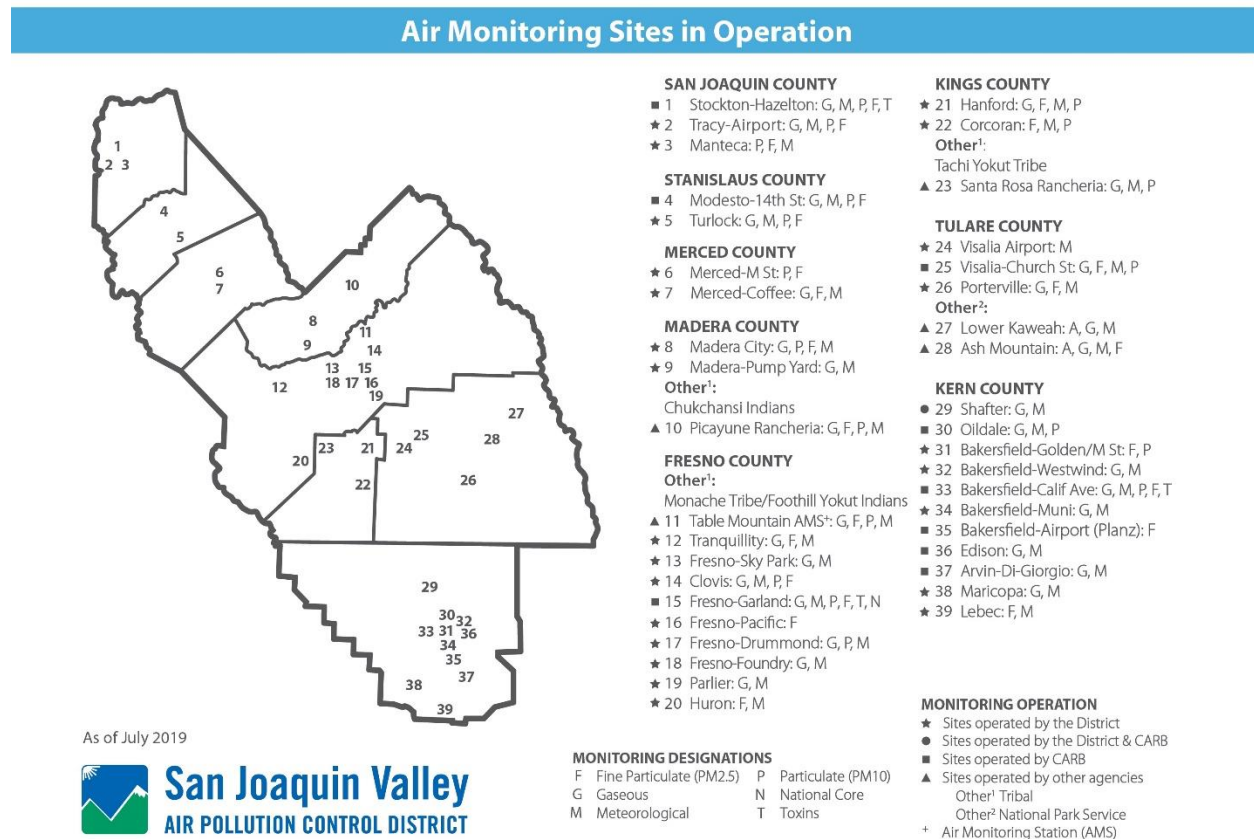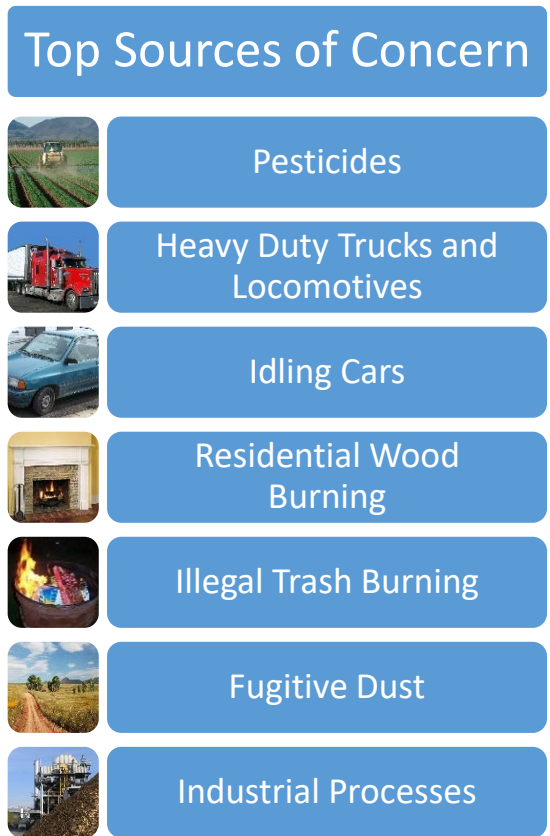

Air monitoring under AB 617 will help augment the District's current air monitoring program by placing a high concentration of air monitors throughout approved final community boundary. These local monitors will provide the community with a better understanding of the air quality impacts from local emissions and will measure the effects of emissions reduction efforts as a result of the AB 617 Community Emission Reduction Program (CERP). While the regulatory nature of the current air monitoring data collected in the Valley is separate from the AB 617 mandate, the District's goal of providing the public with the most accurate, precise data remains the same.

Community-Specific Monitoring Needs

Shafter is a rural community in northwest Kern County. This community also includes a variety of agricultural operations, oil and gas production, dairies, locomotives, and heavy-duty truck traffic from Highway 43 and the Lerdo Highway. In order to understand what pollutants to monitor, the District analyzed these specific sources within the Shafter community and asked the Community Steering Committee to weigh-in on their top sources of concern.

Throughout the AB 617 process, Community Steering Committee members and public participants have participated in a variety of facilitated exercises to identify and rank

their top source categories of concern. Meeting materials and exercise worksheets were also been sent to committee members and posted on the District's community page http://community.valleyair.org/ to allow additional opportunity to participate in identifying sources of concern. Some top source categories of concern in Shafter include:

Top Sources of Concern

- Pesticides
- Heavy Duty Trucks and Locomotives
- Idling Cars
- Residential Wood Burning
- Illegal Trash Burning
- Fugitive Dust
- Industrial Processes

Based on emissions inventory, current air monitoring data, and the top sources of concern in this community, pollutants of concern include particulate matter less than 2.5 micrometers in diameter (PM2.5), Black Carbon (BC), Oxides of Nitrogen (NO, NO2, NOx), Hydrogen Sulfide (H2S), Carbon Monoxide (CO), Ozone, and Volatile Organic Compounds (VOCs). In addition, a variety of toxic compounds, including various pesticides, BTEX (Benzene, Ethylene, Toluene, and Xylene), toxic organics, and toxic particulate matter were also identified as pollutants of concern.
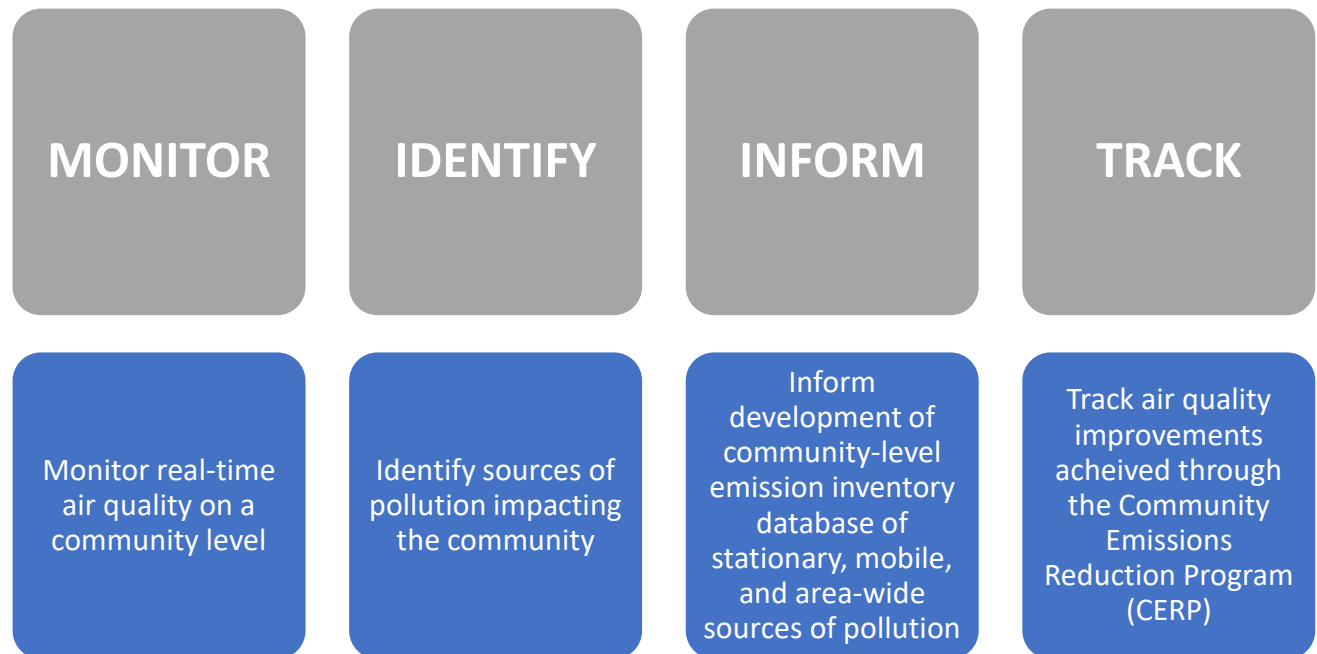
Given the size of the community, the number of pollutants of concern, and the variety of local emissions sources, the community monitoring program will operate air monitoring equipment that is scalable, portable, and provides real-time data to enable the District to constantly adapt to community concerns and quickly respond to impacts. The community air monitoring network design for Shafter includes the use of several fixed, mobile and semi-mobile monitoring platforms, all of which are equipped to detect the community-specific pollutants of concern.

Additionally, as part of the District's current regulatory network, there is one existing air monitor station in the community boundary, where data from ozone, NO/NO2/NOx, and meteorological analyzers will be incorporated into the data collected for the community monitoring program. This existing site is located at the Department of Motor Vehicles office in downtown Shafter and has been operating since 1989. Located in central Shafter, this position is ideal for capturing ambient air quality conditions for the majority of the community population. This site is jointly operated by the District and CARB and has provided an extensive air quality dataset for the area, which has been key for assessing air quality trends in the community and this region of Kern County.

On April 8, the Community Steering Committee met to develop a recommendation for air monitoring objectives and the initial air monitoring network design. As detailed in the monitoring sections of this Community Monitoring Plan, the District has begun initial placement monitors throughout Shafter.

V.   COMMUNITY AIR MONITORING OBJECTIVES

The goal of the community air monitoring program is to use input from the community steering committee to design an air monitoring network that allows the community and the District to achieve the following objectives:

MONITOR	IDENTIFY	INFORM	TRACK
Monitor real-time air quality on a community level	Identify sources of pollution impacting the community	Inform development of community-level emission inventory database of stationary, mobile, and area-wide sources of pollution	Track air quality improvements acheived through the Community Emissions Reduction Program (CERP)

Community Air Monitoring Design and Scope

In order to meet the defined objectives, the community air monitoring network in Shafter must be designed to measure the local impacts of a number of pollutants of concern. During the January 14 meeting, the Steering Committee collectively recommended that the District look beyond the geographic boundary at sources out to a 7 mile radius from the center of the City of Shafter for potential impacts to community. With that in mind, the District has worked with the community to develop a community monitoring network that is scalable, portable, and provides real-time data to ensure that the District can constantly adapt to community concerns, capture sources that may be impacting the community within the geographic boundary, and rapidly react to unanticipated pollution impacts.

In Shafter, the community monitoring network will consist of three (3) fixed stand-alone PM2.5 monitors, one (1) semi-mobile compact multi-pollutant air monitoring system, one (1) semi-mobile air monitoring trailer, and one (1) mobile air monitoring van. Additionally, based on the Steering Committee's recommendation, the District will work the California Department of Pesticide Regulation (DPR) to urge them to consider expanding pesticide monitoring in the area. The following is a description of the pollutants to be monitored within each platform:

Air Monitoring Trailer	PM2.5, Ozone, BC, Pesticides, CO, NO/NO2/NOx, VOC, SO2, H2S, Toxics, Speciated VOCs, Meteorology
Compact Multi-pollutant air monitoring system	PM2.5, Ozone, BC, CO, NO/NO2/NOx, VOC, Meteorology
Stand-Alone PM2.5 Monitors	PM2.5
Mobile Air Monitoring Van	PM2.5, Ozone, BC, CO, NO/NO2/NOx, VOCs, SO2, Toxics, Meteorology
Potential Stand-Alone Pesticide Monitoring (DPR)	31 different compounds, including 1-3 Dichloropropene, Chlorpyrifos

PM2.5: In Shafter, fine particulate patter (PM2.5) is directly emitted from several sources, such as mobile on-road and off-road sources, area-wide sources like residential wood burning or dust from roads, and certain industrial operations. This type of directly-emitted PM2.5 is also called primary PM2.5. Secondary PM2.5 is formed in the atmosphere through reaction of gaseous precursors like NOx and ammonia, both of

which can come from mobile and area wide sources in the community. PM2.5 concentrations are typically reported in micrograms per cubic meter ($\mu g/m^3$).

Ozone: Ozone is formed in the atmosphere from VOC and NOx precursors in the presence of sunlight. Ozone in the Shafter community is typically a regional pollutant, but the VOC and NOx precursors are emitted locally, which may influence local peak ozone concentrations. Modeling shows that the Valley is a NOx-limited regime, meaning that ozone formation is tied to changes in NOx concentrations, not VOCs.

Black Carbon (BC): BC is a product of incomplete combustion of fuel from sources like diesel engines, cooking, wood burning and forest fires, and is emitted directly into the atmosphere generally as PM2.5. BC is a major component of soot from diesel truck, and is a good indicator of diesel PM from heavy duty trucks and locomotives in the Shafter community.

Carbon Monoxide (CO): CO is an odorless gaseous pollutant that is produced as a byproduct of incomplete combustion. In Shafter, CO is primarily emitted from mobile sources, but industrial and residential wood or fuel combustion contributes to the inventory.

Volatile Organic Compounds (VOCs): VOCs are a variety of organic compounds that are gaseous at standard temperature and pressure. This category includes non-methane hydrocarbons (NMHC) as well as alcohols, aldehydes and organic acids. VOCs are typically emitted from refineries and related activities, but can also originate from other industrial activities and mobile sources in the Shafter region.

Nitrogen Oxides (NOx): Mobile on-road and off-road vehicles are the main sources of NOx emissions in Shafter. NOx is also emitted from local stationary industrial operations. NOx is a general term for Nitrogen Oxide (NO) and Nitrogen Dioxide (NO2), highly reactive gases that contribute to the formation of secondary PM2.5 and ozone pollution. NO2 is routinely measured in the District's ambient air monitoring network, including as a part of the regulatory site operated by CARB in the Shafter community. NO2 measurements also typically include measurement of NO, the other major NOx constituent.

BTEX: While measurements of VOCs like NMHCs can provide valuable information about industrial emissions, for a refinery it is possible to distinguish a few specific VOCs to represent fugitive emissions that have been associated with adverse health impacts (e.g. benzene, toluene, ethylbenzene, and xylenes; or BTEX). Elevated levels of BTEX compounds are also expected in the vicinity of major roadways and oil and gas operations in the Shafter community.

Hydrogen Sulfide (H2S): Hydrogen sulfide can be emitted in the Shafter community from industrial operations such as waste disposal or oil and gas operations.

Toxic Air Contaminants (Toxics): Toxics are pollutants which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. These can be metals, VOCs or particulate matter in nature. Air toxics in the Shafter community are emitted from stationary sources of pollution under the direct control and regulation of the District, from mobile sources such as cars and trucks driving through the community, and from area wide sources like road dust, residential wood burning, and consumer products**.**

Many of the pollutants mentioned above have federal National Ambient Air Quality Standards (NAAQS), which are health based exposure standards set by EPA (Table 1).

Table 1   National Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	Standard
PM2.5	24-hour, Annual	35 µg/m^3, 12 µg/m^3
Ozone	8-hour	70 ppb
CO	1-hour, 8-hour	35 ppm, 9 ppm
NO2	1-hour, Annual	100 ppb, 53 ppb
SO2	1-hour	75 ppb
H2S*	1-hour	30 ppb

*California State Standard

VI.   ROLES AND RESPONSIBILITIES

The District will be responsible for procuring, installing, deploying, and maintaining the air pollution monitors that have been identified in this monitoring plan, with the exception of the stand-alone pesticide monitors. The District will continue to work with CARB and the California Department of Pesticide Regulation to explore whether pesticides monitoring in the Shafter area could be enhanced to complement the District's community air monitoring campaign.

Based on continued feedback and recommendations from the community Steering Committee, there may be other future monitoring needs that fall outside the District's current capabilities, requiring the District to work with other agencies or private entities to conduct monitoring or laboratory analysis.

VII.   DATA QUALITY OBJECTIVES AND QUALITY CONTROL PROCEDURES

As the District moves forward with implementing the CAMP, the District will continue to define performance and acceptance criteria; develop precision, bias, accuracy, sensitivity, and data completeness needs; detail processes to follow when control limits are exceeded; and define procedures and materials to conduct community monitoring.

District staff will perform standard calibrations, flow rate checks, preventative maintenance, and needed repairs to ensure data availability and quality for all platforms and instrumentation being operated in the community air monitoring network. All instrumentation within the fixed PM2.5 monitors, semi-mobile compact air monitoring systems, and semi-mobile trailers will be calibrated at the beginning and end of their community monitoring campaigns at each specified location, or biannually, whichever comes first. The instrumentation within the mobile air monitoring vans will be calibrated biannually. Instrumentation will also be calibrated as needed throughout the community air monitoring campaign to improve data quality based on the District's Quality Assurance/Quality Control procedures. Calibrations will be conducted for flowrate on an instrument to instrument basis. Routine one-point standard checks/audits will be performed to evaluate the proposed initial data quality objectives.

VIII.   MONITORING METHODS AND EQUIPMENT

The community air monitoring network design for Shafter includes the use of several fixed, mobile, and semi-mobile monitoring platforms, all of which are equipped to detect the community-specific pollutants of concern. As the District works with the Steering Committee throughout the campaign, the community monitoring network design will be reevaluated on a regular basis to determine whether changes are needed to capture other local sources of concerns with the community boundary. The District plans to move its air monitoring equipment within the community boundary as necessary to take measurements in other areas of concern. This District plans to consult with the Shafter Steering Committee on any potential changes, and as new equipment becomes available for deployment into the area.

Fixed Air Monitoring

The District will operate three (3) fixed air monitoring analyzers to measure ambient PM2.5. These will be placed in their respective locations for sufficient lengths of time to capture long-term PM2.5 pollution trends throughout the community, unless monitoring priorities change and monitor relocation is necessary.

Semi-Mobile Platforms

One (1) air monitoring trailer and one (1) compact air monitoring system will operate in Shafter as semi-mobile platforms. Each platform will be equipped with advanced air monitoring analyzers able to communicate the community-level air quality in real or near-real time. Both will be placed in secure, accessible locations. The length of time for which these semi-mobile platforms will be deployed at their locations depends on the specific air monitoring objectives for the area of interest, which could be up to two years, or until a higher priority area has been identified within the community.

Mobile Platforms

The District has acquired one (1) mobile air monitoring van for the Shafter community. This van has the ability to measure highly resolved air pollution concentrations while driving, which is ideal for targeting unmonitored areas of concern or regularly surveying the entire community of Shafter within a short timeframe, allowing the District and the community to identify spatial air pollution trends throughout the region. The air monitoring van can also be useful for measuring pollution from on-road sources, identifying sources of community-level air pollution, and informing the District and the community of the progress towards emission reduction efforts. Additionally, the van can be parked in one location for longer periods of time to capture daily or weekly pollution from unmonitored areas within the community.

The mobile monitoring van is a useful tool for evaluation of a large geographic region, but these platforms are limited and can only provide an instantaneous look at the measured pollutants when the monitoring occurred. The fixed and semi-mobile platforms are better equipped to measure daily variations in pollutant concentrations. The use of both mobile and semi-mobile monitoring platforms will be necessary to capture the full picture of the community's air pollution concerns.

Table 2   Monitoring Methods and Equipment

Pollutant	Equipment	Laboratory or Real-Time	Averaging Period	Sampling Rate
Ozone	T265	Real-Time	1-hour	Continuous
NO, NO2, NOx	T200	Real-Time	1-hour	Continuous
PM 2.5	BAM 1020	Real-Time	1-hour	Continuous
PM 2.5	BAM 1022	Real-Time	1-hour	Continuous
Black Carbon	BC 1054	Real-Time	1-hour	Continuous
Black Carbon	2-WIN Nephelometer	Real-Time	1-hour	Continuous
Black Carbon	MA 350	Real-Time	1-hour	Continuous
Carbon Monoxide	Thermo 48i	Real-Time	1-hour	Continuous
VOC (Total)	Pyxis	Real-Time	1-hour	Continuous
VOC (BTEX)	Mocon Series 9100	Real-Time	1-hour	Continuous
VOC (BTEX)	Pyxis GC	Real-Time	1-hour	Continuous
H2S/SO2	T101	Real-Time	1-hour	Continuous
PM Speciation	Super-SASS	Laboratory	24-hour	Up to Weekly
Toxic Organics	Canister	Laboratory	24 Hour	Up to Weekly
VOC Speciation	Ion Icon PTR-TOF-MS	Real-Time	1-hour	Continuous

IX.   COMMUNITY MONITORING LOCATIONS

The first step in implementing the proposed approach is to identify the areas within the Shafter community that are most impacted by local air pollution sources and will capture areas of air quality concern. District staff and the Shafter community Steering Committee evaluated maps of stationary, area, and mobile sources of pollution to determine regions within the community boundary that were most impacted by pollution and of most concern to the community. The District and Committee also evaluated prevailing wind direction and sensitive receptor locations to ensure that monitors were placed in areas that would best represent the community impacts. Examples of some of these maps are displayed in Figure 3 through Figure 6. Based on this evaluation, the District proposed the initial community monitoring designed described in Figure 7, which was supported by the Steering Committee at the April 8, 2019 Steering Committee Meeting.

Figure 3 **Stationary Sources within the (a) 7-mile Radius and (b) Community Boundary**
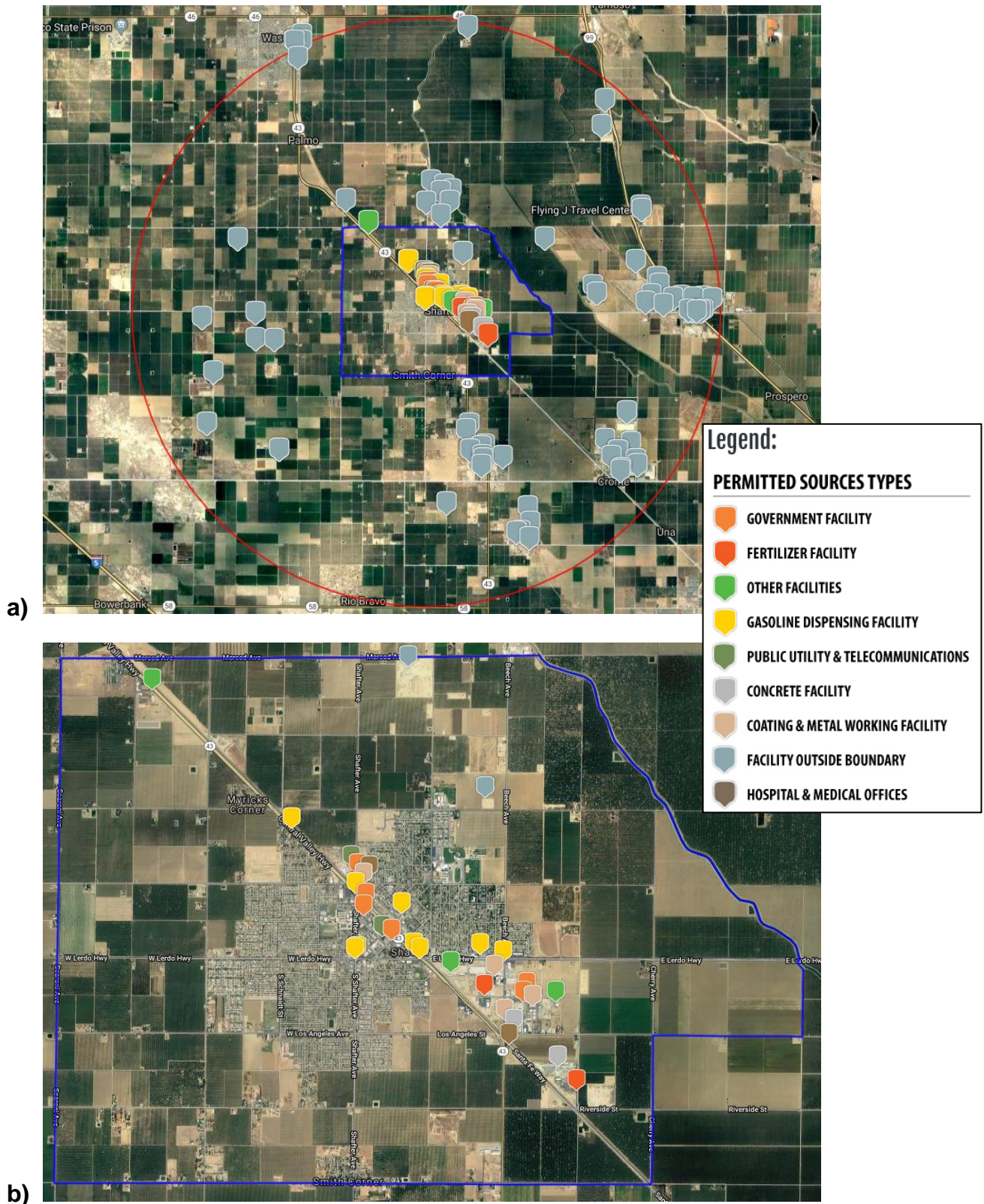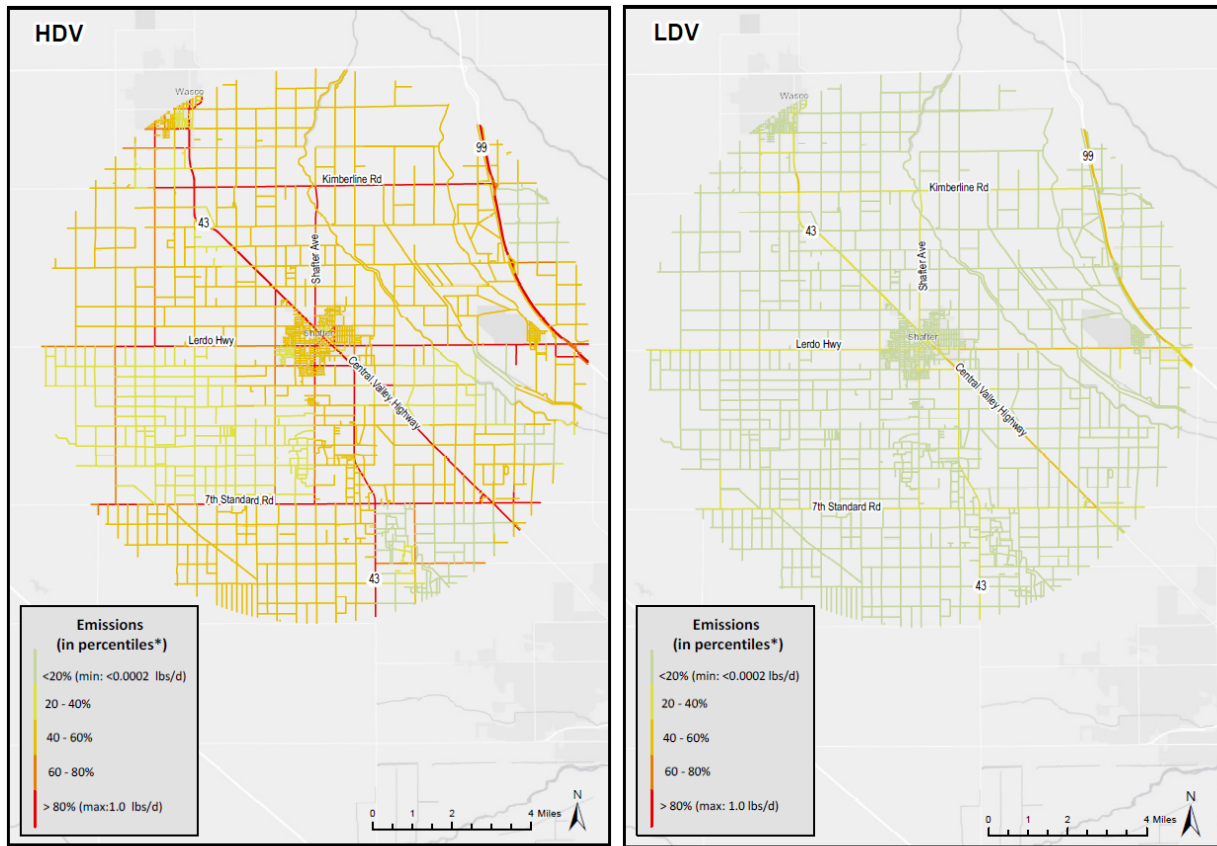
Figure 4   Mobile Source Emissions of Light Duty Vehicle (LDV) and Heavy Duty Vehicle (HDV) Source in Community Boundary and Sphere of Influence

DRAFT CARB-AQPS 4/26/2019   * Percentile bins are ranked by unique emission values

Figure 5   **a) Area Wide NOx Emissions; and b) Off-Road Mobile PM2.5 Emissions in Community Boundary and 7 Mile Radius**
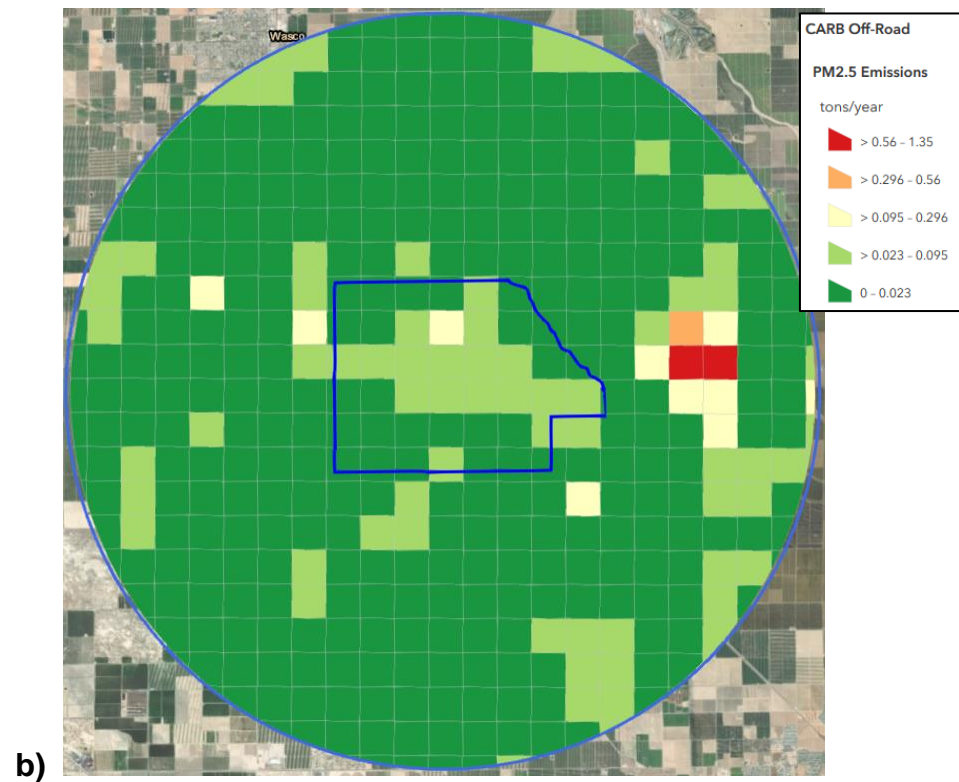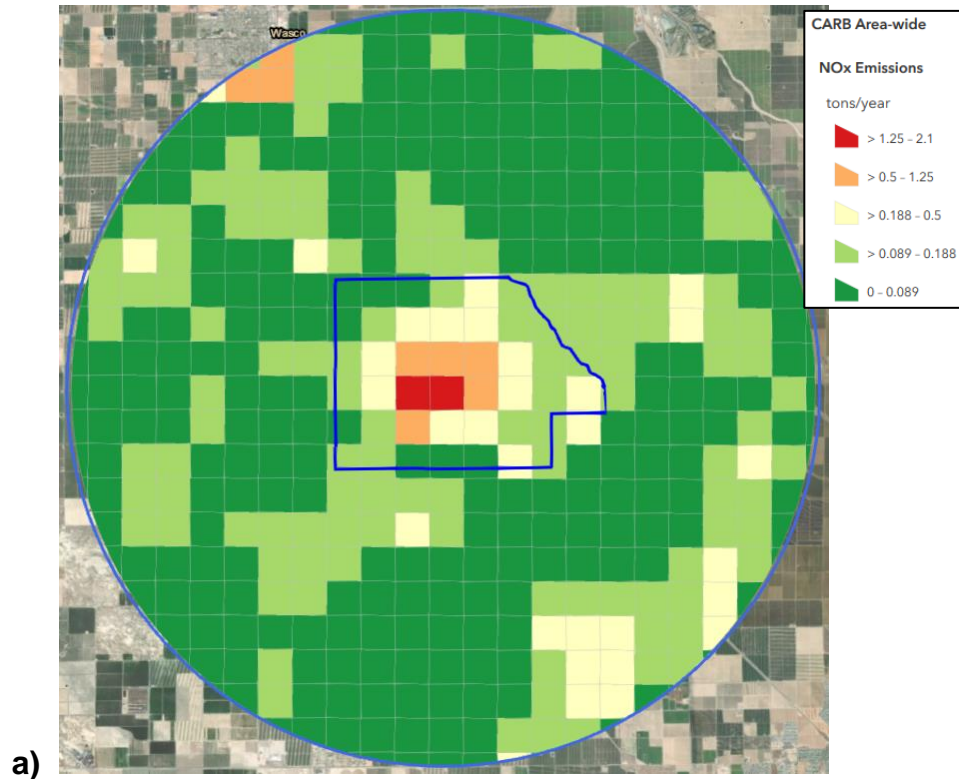

a)

b)

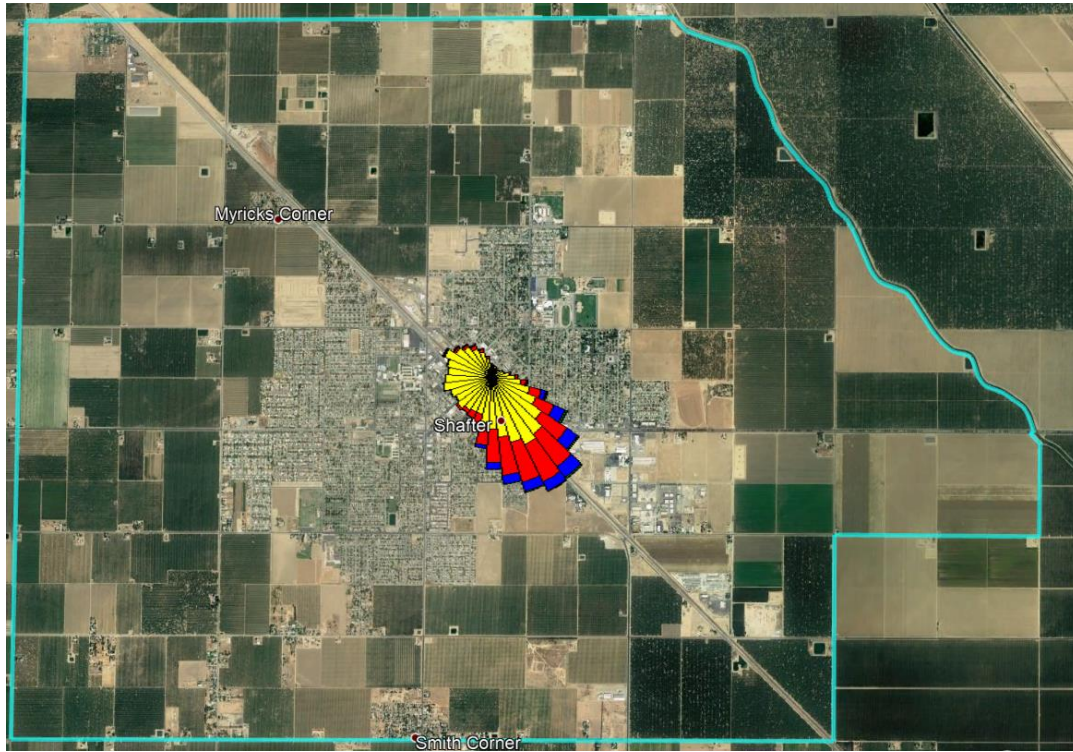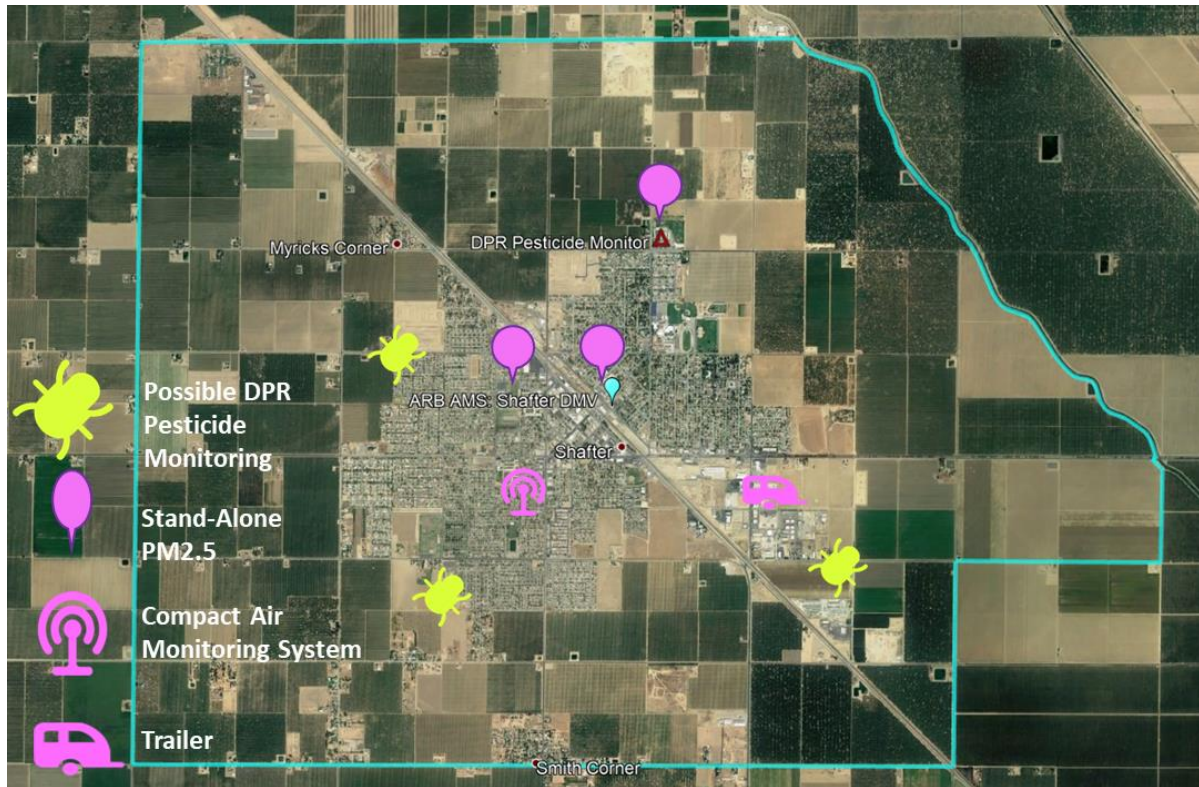**Figure 6   Prevailing Wind Direction**

**Figure 7   Steering Committee Recommendation for Community Air Monitoring
Network Design for City of Shafter**

The District will continue to work with DPR, landowners, and property managers within
the community to determine the location logistics and site agreements necessary to
operate monitoring equipment in these locations.

X.   DATA MANAGEMENT

The District will be using Agilaire's AirVision software as its air quality data management
system for the community air monitoring network in Shafter. AirVision's organization
and overall use will be similar to how the District uses this system to manage data from
its regulatory air monitoring network. In general, AirVision will be used to collect data
from the community air monitoring network in real-time, where both pollutant
concentration data and analyzer health data will be collected and stored. District staff
will review this collected data on a regular basis to ensure that monitors deployed in the
community network are operating properly, and to know if a visit to the monitor for
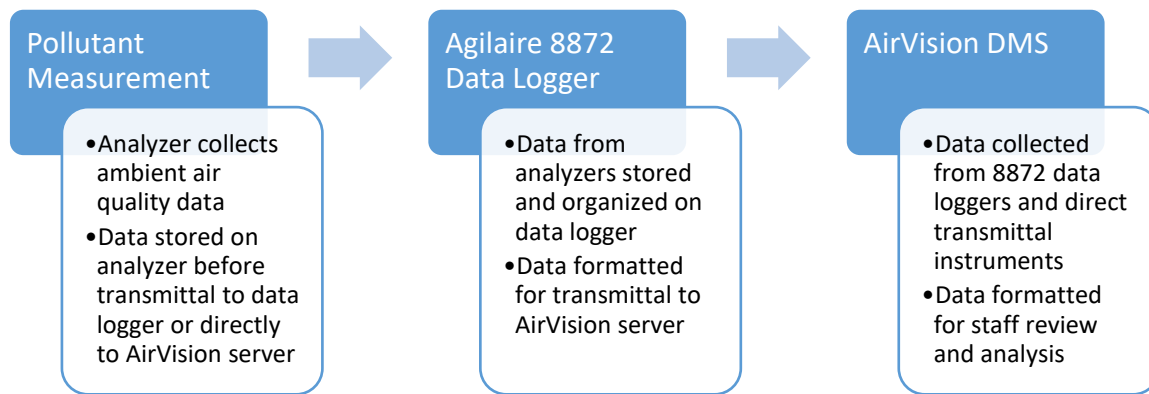maintenance or repair is needed.

Data Collection and Storage Process

The District's more comprehensive air monitoring platforms will use Agilaire's 8872 data
loggers to collect and organize data from the analyzers integrated into their operation.

These 8872 data loggers will serve as the Data Acquisition System (DAS), which will in turn transmit their data to the AirVision server at the District's office, which serves as the Data Management System (DMS). Other monitoring platforms, such as the compact monitoring systems and stand-alone PM2.5 instruments will not have the need for an 8872 data logger, but will rather transmit their data to the AirVision server directly.

The following figure displays the data collection and transmittal process for the Shafter community air monitoring network.

Figure 8   Data Collection and Transmittal Process

| Pollutant Measurement	Agilaire 8872 Data Logger	AirVision DMS
• Analyzer collects ambient air quality data • Data stored on analyzer before transmittal to data logger or directly to AirVision server	• Data from analyzers stored and organized on data logger • Data formatted for transmittal to AirVision server	• Data collected from 8872 data loggers and direct transmittal instruments • Data formatted for staff review and analysis

For analyzers operating in the community air monitoring network that use manual filter based measurements or canister samples, these field samples will need to first be sent to a laboratory for processing and analysis. Since this is a manual process, these results will not be managed through this process just described, but will be managed through a separate process described later in this air monitoring plan.

All data collected within AirVision from the air monitoring network 8872 data loggers, or through direct transmittal from specific instruments, are stored on the District's servers and backed-up regularly to ensure integrity.

Data Display and Transmittal to CARB AQ-View System

As data from the Shafter community air monitoring network are collected into the AirVision data management system, the District will display this data in real-time on the Shafter community website. This view will include both a geographic representation of the data across the community, as well as a way to drill down to a particular monitoring site to view current air quality data. The following figure shows an example of the air monitoring data map view being developed for the Shafter community air monitoring network.

Figure 9   Map of Shafter Air Monitoring Data
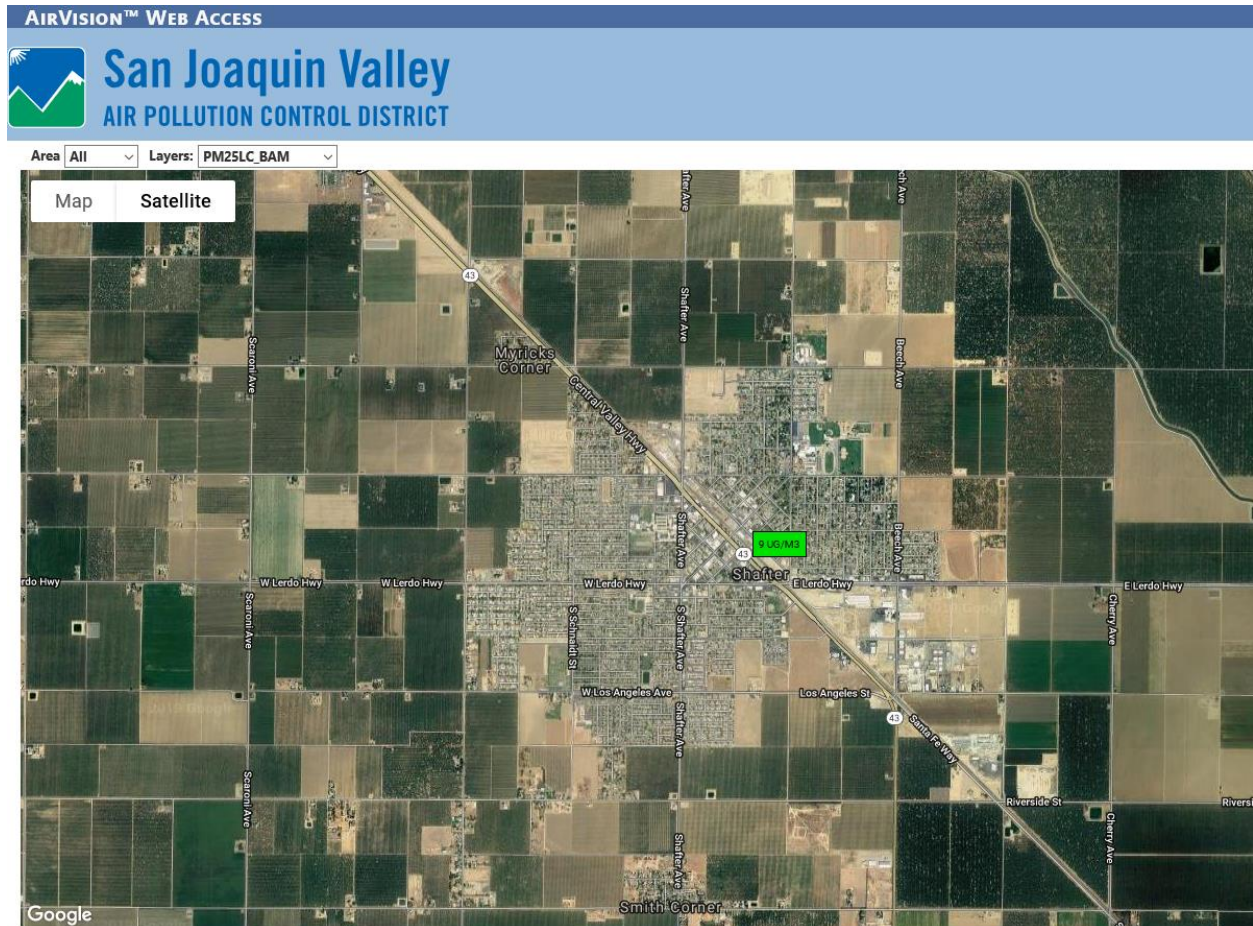
In addition to community air monitoring data being made available on the District's website, this data will also be pushed to CARB's statewide data portal in real-time for the public to view. This statewide data portal, called AQ-View, will allow community members and the general public to view data from the Shafter area in real-time, as well as data being collected in selected AB 617 communities across the rest of California. To transmit this data to AQ-View, it must be organized and structured in a specific manner for acceptance into the statewide data portal. The District is working with CARB and other districts to develop the standardized data format and transmittal process for AQ-View. The District will use AirVision to form the community air monitoring data in this required structure before transmitting to CARB in real-time.

Data Review and Flagging Procedures

The AirVision DMS has a unique feature enabled called Automatic Data Validation Processor or ADVP, which runs in conjunction with the 1-hour polling task. The ADVP feature monitors data collected from each respective site and runs predetermined validation rules to ensure that erroneous data is screened before it is made available to

the public. In some cases, AirVision in real-time will send station operators an email to inform them of alarm conditions that were detected from the recently polled data. If a parameter is found out of tolerance based on the set conditions in ADVP, the data will be flagged according to the conditions set.

After data has been collected from each analyzer and uploaded into the DMS, every station and parameter undergoes ADVP rule assessment. Flags are then automatically applied based on the conditions previously set. Depending on flag assignment, some data may be posted in real-time. If a flag is applied and invalidates the data, then data will not be displayed in real-time.

Even with the assistance of the ADVP capabilities in AirVision, if erroneous data still appears, District staff will investigate these values through closely reviewing the operational status of the instrument in question. This review will allow the District to make a determination of whether the data point in question should be validated and included in the final data set sent to CARB's statewide data portal.

XI.   WORK PLAN FOR FIELD MEASUREMENTS

The District began the implementation of the community air monitoring plan in Shafter by July 1, 2019, and will continue to operate air monitoring in the community to meet the requirements of AB 617. While most of the community monitoring equipment will be remotely operated, the District plans to maintain and check the equipment at least monthly. For VOC speciation and PM2.5 filter analysis, the District plans to collect canister and filter samples on a regular basis throughout the campaign.

XII.   EVALUATING MONITORING PLAN EFFECTIVENESS

Data from the Shafter community monitoring campaign will be analyzed on an ongoing basis to ensure that data quality objectives are met and the data is able to meet all the community air monitoring objectives outlined in this community air monitoring plan. The real-time and final data will be evaluated to inform the public and allow the District and CARB to appropriately assess the local air quality in the Shafter community. District staff will regularly assess data capture status, completeness, and validity. Any error that limits the District's ability to meet the community air monitoring plan objectives will be identified and the District will take the appropriate corrective actions.

XIII.   ANALYZE AND INTERPRET DATA

As air quality data is collected from the Shafter community air monitoring network, the District will conduct an extensive review and validation process to ensure the highest quality data possible. This data validation process will be subjected to multiple levels of review to maximize the quality assurance process. Interpretation and analysis of

monitoring data will differ based on whether the dataset is laboratory-based or of a continuous nature.

Laboratory Data

For some VOC speciation and filter-based analyzers, the District will likely be contracting with laboratories to perform chemical analyses, as needed. District staff will post the results of the laboratory analysis on the District website after it has undergone the appropriate review process.

Continuous Data

Continuous monitoring data will be reported to the District website and the CARB AQ-View statewide data portal as preliminary data on an hourly basis. At the end of each month, the preliminary data will undergo multiple levels of review by District staff to ensure that the data is of the highest quality, and to ensure that the analyzers were operated in accordance with the vendor manuals and District protocols.

XIV.   COMMUNICATING RESULTS TO SUPPORT ACTION

All collected, preliminary and final data will be summarized and shared by the District through the following platforms:

- **District's website:** hourly for continuous data, quarterly for laboratory data
- **CARB's AQ View portal:** hourly for continuous data, quarterly for laboratory data
- **CSC meetings:** Annually, or as requested by committee
- **Annual report:** Final, quality assured data published on District website

District staff will share monitoring results with community residents upon completion of the monitoring campaign.