San Joaquin Valley Air Pollution Control District

Annual Air Monitoring Network Plan

June 25, 2013

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The District's Core Values and the District's Air Monitoring Network

* Protect Public Health *

The District uses data collected from the Valley air monitoring network to generate daily air quality forecasts and, when needed, issue health advisories. The District also uses data collected from the Valley's air monitoring network as the basis for long-term attainment strategies and to track progress towards health-based air quality standards.

* Active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity *

The District uses air monitoring data to help determine what kind of air pollution control efforts are needed to achieve health-based air quality standards.

* Outstanding Customer Service *
* Accountability to the public *

The District's website provides timely and easy public access to data from the Valley's real-time air monitors. The public can also access summaries of the previous seven days of air quality for ozone and particulate matter.

* Open and transparent public processes *

In addition to making air quality data available in real-time, the District uses air quality data in a variety of publicly available documents and reports. The District also conducts a public review period for annual monitoring network plans.

* Respect for the opinions and interest of all Valley residents *

The District has actively made daily air quality information available to Valley residents in a variety of formats, from the District website to the media, and even with air quality flags at schools. The District considers public interests in establishing new air monitoring stations.

* Ingenuity and innovation *

The District uses new and improved air monitoring techniques as these techniques are approved by the EPA. The District uses the latest science when siting air monitors. In turn, data collected from the monitoring network contributes to ongoing scientific evaluations.

* Continuous improvement *

The District evaluates the air monitoring network in the annual Monitoring Network plan for opportunities for better data collection and greater efficiency. Furthermore, improved air monitoring is a continuous effort; throughout the year, the District seeks out opportunities to improve the air monitoring network.

* Recognition of the uniqueness of the San Joaquin Valley *

The San Joaquin Valley is an expansive and diverse area. The District sites air monitors to represent each type of area and each portion of the region.

* Effective and efficient use of public funds *

An air monitoring network requires personnel, instruments, parts, energy, and leases. The District makes the most of limited resources by structuring the air monitoring network in a way that optimizes personnel time and funding for instruments. The result is a robust air monitoring network that helps the Valley reach its air quality goals without unnecessary expenditures.

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Executive Summary

The San Joaquin Valley Air Pollution Control District (SJVAPCD or District) operates an extensive network of air quality monitors throughout the San Joaquin Valley (Valley) to support its mission of improving and protecting public health. On a short term scale, District staff use the hourly readings from real–time monitors to communicate the state of the air quality to Valley residents. Through programs and venues such as the Real–time Air Advisory Network (RAAN), the Air Quality Flag program, the District website, and Valley media, Valley residents are able to obtain air quality information that can help them with their activity planning. The District also uses real–time air quality data to manage prescribed burning, agricultural burning, and residential wood combustion to ensure these activities do not make air quality unhealthy.

The Valley's attainment status for the U.S. Environmental Protection Agency's (EPA) health–based air quality standards is the foundation of the District's air quality attainment plans (such as the *2007 Ozone Plan*, the *2012 PM2.5 Plan*, and upcoming plans). As part of the District's long–term efforts to improve public health, air monitors collect data that is rigorously analyzed by laboratory technicians and District staff. This monitoring data determines the Valley's air quality and is fundamental in the Valley's effort to improve air quality and achieve attainment of EPA's health–based standards as quickly as possible.

The San Joaquin Valley covers an area of 23,490 square miles, and the area is home to one of the most challenging air quality problems in the nation. The Valley is nonattainment for federal PM2.5 and ozone standards, and is in attainment of the federal standards for lead (Pb), Nitrogen dioxide (NO_2), Sulfur dioxide (SO_2), and Carbon monoxide (CO). In addition, the Valley is an attainment/maintenance area for PM10. The Valley is home to approximately 4 million residents, and includes several major metropolitan areas, vast expanses of agricultural land, industrial sources, highways, and schools. This expansive and diverse area comprises many air quality needs, yet there are limited financial and personnel resources for air quality monitoring.

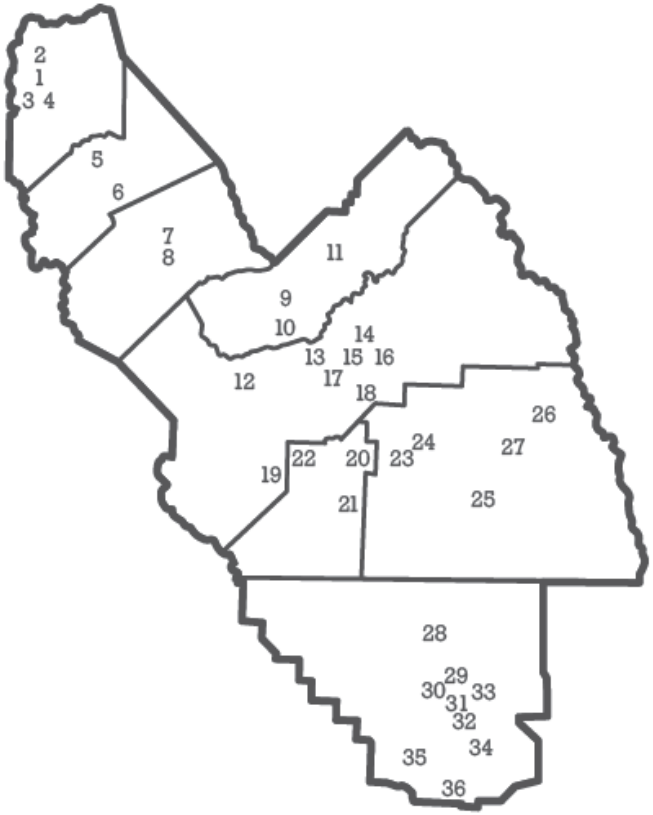
Despite these limitations and challenges, the District maintains a robust air monitoring program. The District follows federal monitoring requirements and guidelines to ensure an efficient and effective monitoring network. Additionally, EPA encourages tribal monitoring. There are two tribal monitors operating in the Valley. The Tachi Yokut Tribe operates a monitoring station at Santa Rosa Rancheria located in Kings County, and the Chukchansi Indians of California operate a monitoring station at the Picayune Rancheria located in Madera County.

This monitoring network plan describes the District's approach for implementing federal air monitoring and quality control requirements and summarizes recent and upcoming changes to the monitoring network. As specified in 40 CFR 58.10(a), this plan is made available for public inspection at least 30 days prior to submission to EPA. This Network Plan summarizes the state of the District's air monitoring network during 2012, and through March 2013. Additionally, changes that the District may initiate through

June 2014 are described in the Summary of Planned Changes. A map of the air monitoring stations in the San Joaquin Valley is shown in Figure 1. Table 5 lists detailed information about all of the ambient air monitoring sites in the San Joaquin Valley Air Basin.

Figure 1 Map of Air Monitoring Sites in the San Joaquin Valley

Air Monitoring Sites in Operation



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

SAN JOAQUIN COUNTY
- ■ 1 Hazelton: G, M, P, F, T
- ★ 2 Wagner/Holt: P
- ★ 3 Tracy: G, M, P, F
- ★ 4 Manteca: P, F, M

STANISLAUS COUNTY
- ■ 5 Modesto: G, M, P, F
- ★ 6 Turlock: G, M, P, F

MERCED COUNTY
- ★ 7 M Street: P, F
- ★ 8 Coffee St: G, F, M

MADERA COUNTY
- ★ 9 Madera City: G, P, F, M
- ★ 10 Madera-Pump Yard: G, M

Other[1]:
Chukchansi Indians
- ▲ 11 Picayune Rancheria: F

FRESNO COUNTY
- ★ 12 Tranquillity: G, F, M
- ★ 13 Sierra Sky Park: G, M
- ★ 14 Clovis: G, M, P, F
- ■ 15 Fresno-Garland: G,M, P, F, T, N
- ★ 16 Fresno-Pacific: F
- ★ 17 Drummond: G, P, M
- ★ 18 Parlier: G, M
- ★ 19 Huron: F, M

KINGS COUNTY
- ★ 20 Hanford: G, F, M, P
- ★ 21 Corcoran: G, F, M, P

Other[1]:
Tachi Yokut Tribe
- ▲ 22 Santa Rosa Rancheria: G, M, P

TULARE COUNTY
- ★ 23 Visalia Airport: M
- ■ 24 Church Street: G, F, M, P
- ★ 25 Porterville: G, F, M

Other[2]:
- ▲ 26 Lower Kaweah: A, G, M
- ▲ 27 Ash Mountain: A, G, M, F

KERN COUNTY
- ● 28 Shafter: G, M
- ■ 29 Oildale: G, M, P
- ■ 30 California Avenue: A, G, M, P, F, T
- ★ 31 Bakersfield-Muni: G, M
- ■ 32 Planz Road: F
- ■ 33 Edison: G, M
- ■ 34 Arvin-Di-Giorgio: G, M
- ★ 35 Maricopa: G,M
- ★ 36 Lebec: F, M

MONITORING DESIGNATIONS
- A Acid Deposition
- F Fine Particulate (PM2.5)
- G Gaseous
- M Meteorological
- P Particulate (PM10)
- N National Core
- T Toxins

MONITORING OPERATION
- ★ Sites operated by the District
- ● Sites operated by the District & CARB
- ■ Sites operated by CARB
- ▲ Sites operated by other agencies
  - Other[1] Tribal
  - Other[2] National Park Service

Introduction: Air Monitoring Network Plan requirements

As specified in 40 CFR (Code of Federal Regulations) 58.10, and as part of requirement of the District's EPA 105 Grant, this air monitoring network plan describes the current state of the District's monitoring network and changes that are planned for the network. The annual monitoring network plan is updated and submitted to the EPA Regional Administrator each year, and is made available for public inspection for at least 30 days prior to submission to EPA. Air monitoring network plans provide the establishment and maintenance of air monitoring networks that may include the types of stations and equipment listed in Table 1.

Table 1 Types of Air Monitoring Stations and Equipment

Abbreviation	Full Name	Description
ARM	Approved Regional Method	A method that has been approved within a specific region for comparison to federal air quality standards. *Currently, there are no ARM monitors in the San Joaquin Valley.*
FEM	Federal Equivalent Method	These monitors are considered to be equivalent to FRM monitors for the purpose of determining compliance with EPA's health–based air quality standards.
FRM	Federal Reference Method	EPA defines how these monitors are to work, how they are to be engineered, and how they are to measure pollutants. These monitors are used to determine compliance with EPA's health–based air quality standards.
NCore	National Core	Multipollutant monitoring stations; in California, these are operated by the California Air Resources Board (CARB).
PAMS	Photochemical Assessment Monitoring Station	VOC (volatile organic compounds) speciation sites used in serious, severe, or extreme ozone nonattainment areas for precursor evaluation.
SLAMS	State and Local Air Monitoring Station	Monitoring sites that are used for determinations of compliance with federal air quality standards, though they may be used for other purposes as well.
SPM	Special Purpose Monitor	Not included when showing compliance with the minimum air monitoring requirements; an example might include a temporary monitoring station set up in an area to measure short term air quality impacts of a source. Data collected from an SPM can be used for Regulatory purposes if the monitor has been operational for two years and if the monitor is an ARM, FEM, or FRM.
STN	Speciated Trends Network	PM2.5 speciation stations that provide chemical speciation data of PM.

The monitoring network plan should include a statement of purpose for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of 40 CFR part 58. The plan must contain the following information for each existing and proposed site (40 CFR 58.10 (b)):

- The MSA, CBSA, CSA, or other area represented by the monitor. MSA, CBSA, and CSA are statistical–based definitions for metropolitan areas provided by the Office of Management and Budget and the Census Bureau (see Table 2):
    - MSA: Metropolitan statistical area
    - CBSA: Core–based statistical area
    - CSA: Combined statistical area
- Air quality system (AQS) Aerometric Information Retrieval System (AIRS) Code site identification number (see Table 3).
- Locations: street address and geographical coordinates (see Appendix B).
- Sampling and analysis methods for each measured parameter (see Appendix B).
- Operating schedules for each monitor (see Appendix B).
- Monitoring objective and spatial scale of representativeness for each monitor (as defined in Appendix D to 40 CFR 58) (see Appendix B).
- Any proposals to remove or move a monitoring station within 18 months of a plan submittal. Any proposed additions and discontinuations of SLAMS monitors are subject to approval according to 40 CFR 58.14 (see Summary of planned changes section below).
- Each air monitor is sited to satisfy at least one of three specific criteria:
    - Population (see Table 4)
    - A specific geographic scale (see Appendix B)
    - Generally consistent pollution concentrations

There are several network plan requirements that pertain specifically to PM2.5 monitoring:

- The monitoring network plan must identify which sites are suitable and which are not suitable for comparison against the annual PM2.5 national ambient air quality standards (NAAQS) as described in 40 CFR 58.30 (see PM2.5 Monitors in the Valley section below).
- The plan must also document how the District provides for public review of changes to the PM2.5 monitoring network when the change impacts the location of a violating PM2.5 monitor, or the creation/change to a community monitoring zone.
- The District should submit any public comments received on PM2.5 monitoring changes in the submittal of the network plan.
- On March 18, 2013, EPA finalized the rule to revoke the term “population–oriented.” The final rule states that PM2.5 monitors at neighborhood scale or larger, or smaller scales that represent many locations in the same CBSA, are the only monitors representative of “area–wide” air quality that can be compared to the PM2.5 NAAQS.

Table 2 San Joaquin Valley Areas of Representation

TITLE	CODE
Metropolitan Statistical Area (MSA)	**Core–Based Statistical Area (CBSA) Code**
Bakersfield [1]	12540
Fresno	23420
Hanford–Corcoran	25260
Madera	31460
Merced	32900
Modesto	33700
Stockton–Lodi	44700
Visalia–Porterville	47300

[1] Monitors from both the District and the Eastern Kern County Air Pollution Control District can be counted when determining compliance with minimum monitoring requirements for the Bakersfield CBSA. However, only monitors located within the District's boundaries are included in this network plan.

Table 3 Site Identification and AQS AIRS Codes

MSA/CBSA: Fresno		
County: Fresno		
Site Name	**AIRS Code**	**Operating Agency**
Clovis–Villa	060195001	SJVAPCD
Fresno–Drummond	060190007	SJVAPCD
Fresno–Garland	060190011	CARB
Fresno–Pacific	060195025	SJVAPCD
Fresno–Sky Park	060190242	SJVAPCD
Huron	060192008	SJVAPCD
Parlier	060194001	SJVAPCD
Tranquillity	060192009	SJVAPCD
MSA/CBSA: Bakersfield		
County: Kern (Valley Portion)		
Site Name	**AIRS Code**	**Operating Agency**
Arvin–Di Giorgio	060295002	CARB
Bakersfield–California	060290014	CARB
Bakersfield–Muni [1]	060292012	SJVAPCD
Bakersfield–Planz	060290016	CARB
Edison	060290007	CARB
Lebec	060292009	SJVAPCD
Maricopa	060290008	SJVAPCD
Oildale	060290232	CARB
Shafter	060296001	Shared [2]
MSA/CBSA: Hanford–Corcoran		
County: Kings		
Site Name	**AIRS Code**	**Operating Agency**
Corcoran–Patterson	060310004	SJVAPCD
Hanford–Irwin	060311004	SJVAPCD

[1] The Bakersfield–Golden State AMS was closed in December 2009 and relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS to serve as a PAMS Type 2 site. See Appendix C for details.
[2] Site operated by CARB and SJVAPCD.

Table 3 Site Identification and AQS AIRS Codes (Continued)

MSA/CBSA: Madera		
County: Madera		
Site Name	**AIRS Code**	**Operating Agency**
Madera–City	060392010	SJVAPCD
Madera–Pump Yard	060390004	SJVAPCD
MSA/CBSA: Merced		
County: Merced		
Site Name	**AIRS Code**	**Operating Agency**
Merced–Coffee	060470003	SJVAPCD
Merced–M Street	060472510	SJVAPCD
MSA/CBSA: Stockton		
County: San Joaquin		
Site Name	**AIRS Code**	**Operating Agency**
Manteca	060772010	SJVAPCD
Stockton–Hazelton	060771002	CARB
Stockton–Wagner/Holt	060773010	SJVAPCD
Tracy–Airport	060773005	SJVAPCD
MSA/CBSA: Modesto		
County: Stanislaus		
Site Name	**AIRS Code**	**Operating Agency**
Modesto–14th Street	060990005	CARB
Turlock	060990006	SJVAPCD
MSA/CBSA: Visalia–Porterville		
County: Tulare		
Site Name	**AIRS Code**	**Operating Agency**
Porterville	061072010	SJVAPCD
Sequoia–Ash Mountain	061070009	National Park Service
Sequoia–Lower Kaweah	061070006	National Park Service
Visalia–Airport	061073000	SJVAPCD
Visalia–Church	061072002	CARB

Table 4 San Joaquin Valley 2012 Population

County	Total County Population	Major Urban Area Pop > 100,000	Urban Area Pop < 100,000 and > 50,000
Fresno	945,711	Fresno	Clovis
Kern (Entire County)	850,006	Bakersfield	Delano
Kern (Valley Portion)	731,005 [1]	Bakersfield	Delano
Kings	152,419	—	Hanford
Madera	152,074	—	Madera
Merced	258,736	—	Merced
San Joaquin	695,750	Stockton	Lodi, Manteca, Tracy
Stanislaus	519,940	Modesto	Turlock
Tulare	450,840	Visalia	Porterville, Tulare
San Joaquin Valley Total	**3,906,475**		

[1] Population estimate for Kern County (Valley Portion) was calculated using census track data for the population living within the District's boundaries. The San Joaquin Valley Total includes the Kern (Valley Portion) population, not the Kern (Entire County) population. Data from California Department of Finance E–1 Population Estimates for Cities, Counties and the State, January 1, 2012.

Monitoring Objectives and Spatial Scales

Appendix D to 40 CFR Part 58 identifies three basic **monitoring objectives** that define the purpose of each analyzer:

- Provide air pollution data to the general public in a timely manner (**timely**/**public**).
- Support compliance with ambient air quality standards and emissions strategy development (**standards**/**strategy**).
- Support for air pollution research studies (**research support**).

Appendix D then identifies several general monitoring **site types** to meet the objectives that define what the monitor is measuring:

- Sites located to determine the **highest concentrations** in the area covered by the network.
- **Population oriented** sites to measure typical concentrations in areas of high population density.
- **Source impact** sites to determine the impact of significant sources or source categories on air quality.
- **General/background sites** determine background concentration levels.
- **Regional transport sites** located to determine the extent of regional pollutant transport among populated areas and in support of secondary standards
- Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare–related impacts.

Appendix D also identifies several scales of spatial representativeness, described in terms of physical dimensions of the air parcel or zone where air quality is expected to

be reasonably consistent around the monitor. The monitor thus represents that area, not just the point of the monitor. The **spatial scales** are:

- **Microscale**: An area ranging from several meters up to about 100 meters.
- **Middle scale**: An area covering between about 100 meters to 0.5 kilometers.
- **Neighborhood scale**: Covering an area between 0.5 and 4.0 kilometers in range.
- **Urban scale**: Covering an area of city–like dimensions, from about 4 to 50 kilometers.
- **Regional scale**: Covering a rural area of reasonably homogeneous geography without large sources, extending from tens to hundreds of kilometers.
- **National and global scales**: Representing concentrations characterizing the nation and the globe as a whole.

New monitoring stations and new monitors that are intended to be compared to the NAAQS must meet EPA siting criteria. A particular site might be appropriate for one or more pollutants. Some sites may be appropriate for all air pollutant monitoring, while other sites are only appropriate for a particular pollutant. The District balances a wide range of pollutant siting criteria, spatial scales, monitoring objectives, and practical concerns as it plans and operates its monitoring network.

This Network Plan summarizes the state of the District's air monitoring network during 2012, and through March 2013. Additionally, changes that the District may initiate through June 2014 are described in the Summary of Planned Changes. Table 5 lists detailed information about all of the ambient air monitoring sites in the San Joaquin Valley Air Basin.

Table 5 Ambient Air Monitoring Sites in the San Joaquin Valley Air Basin

MSA, County	Site Name	Address	Parameters Monitored
Bakersfield, Kern	Arvin–Di Giorgio	19405 Buena Vista Blvd, Arvin, CA 93203	Ozone
	Bakersfield–Planz	401 E. Planz Rd., Bakersfield CA 93307	PM2.5 FRM
	Bakersfield–Muni [1]	2000 South Union Ave., Bakersfield, CA 93307	Ozone, CO, NO2, Total– and Speciated–VOC wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation for PAMS program
	Bakersfield–California	5558 California Ave., Bakersfield, CA 93309	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 BAM/Non–FEM non–regulatory, NO2, Lead, Toxics, Hexavalent Chromium (Cr^{6+}), wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation
	Edison	Johnson Farm–Shed Rd, Edison, CA 93320	Ozone, NO2, wind speed, wind direction, outdoor temperature
	Lebec	1277 Beartrap Road, Lebec, CA 93243	PM2.5 BAM non–regulatory, wind speed, wind direction, outdoor temperature, barometric pressure
	Maricopa	755 Stanislaus St., Maricopa, CA 93352	Ozone, wind speed, wind direction, outdoor temperature, barometric pressure
	Oildale	3311 Manor St, Oildale, CA 93308	Ozone, PM10 FRM, wind speed, wind direction, outdoor temperature
	Shafter	578 Walker St, Shafter, CA 93263	Ozone, NO2, Total– and Speciated–VOC, wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation for PAMS program

[1] The Bakersfield–Golden State AMS was closed in December 2009 due to planned road construction and was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS in 2012. See Appendix C for details.

Table 5 Ambient Air Monitoring Sites in the San Joaquin Valley Air Basin (Continued)

MSA, County	Site Name	Address	Parameters Monitored
Fresno, Fresno	Clovis–Villa	908 N. Villa Ave., Clovis, CA 93612	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 BAM/FEM, CO, NO2, Total– and Speciated–VOC, wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation for PAMS program
	Fresno–Drummond	4706 E. Drummond St., Fresno, CA 93725	Ozone, PM10 FRM, PM2.5 FEM, CO, NO2, wind speed, wind direction, outdoor temperature, barometric pressure
	Fresno–Garland	3727 N. First St, Ste. 104, Fresno CA 93726	Ozone, NO2, CO, SO2, PM10 FEM, PM2.5 FRM, PM2.5 FEM/BAM, PM2.5 BAM/Non–FEM non–regulatory, Lead, wind direction, outdoor temperature, relative humidity, barometric pressure
	Fresno–Pacific	1716 Winery, Fresno, CA 93726	PM2.5 FRM
	Fresno–Sky Park	4508 Chennault Ave, Fresno, CA 93722	Ozone, CO, NO2, wind speed, wind direction, outdoor temperature
	Huron	16875 4th St., Huron, CA 93234	PM2.5 BAM/Non–FEM non–regulatory, barometric pressure
	Parlier	9240 S. Riverbend Ave., Parlier, CA 93648	Ozone, NO2, Total– and Speciated–VOC, wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation for PAMS program
	Tranquillity	32650 W. Adams, Tranquillity, CA 93668	Ozone, PM2.5 BAM/FEM, wind speed, wind direction, outdoor temperature, barometric pressure

Table 5 Ambient Air Monitoring Sites in the San Joaquin Valley Air Basin (Continued)

MSA, County	Site Name	Address	Parameters Monitored
Hanford–Corcoran, Kings	Corcoran–Patterson	1520 Patterson Ave, Corcoran, CA 93212	PM10 TEOM/FEM, PM2.5 FRM, wind speed, wind direction, outdoor temperature, barometric pressure
	Hanford–Irwin	807 S. Irwin St, Hanford, CA 93230	Ozone, PM10 FRM, PM10 TEOM/FEM, PM2.5 BAM/FEM, NO2, wind speed, wind direction, outdoor temperature, barometric pressure
Madera, Madera	Madera–City	28261 Avenue 14, Madera, CA 93638	Ozone, PM10 TEOM/FEM, PM2.5 BAM/FEM, wind speed, wind direction, outdoor temperature, barometric pressure, relative humidity, solar radiation
	Madera–Pump Yard	Avenue 8 and Road 29 1/2, Madera, CA 93637	Ozone, NO2, Total– and Speciated–VOC, wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation for PAMS program
Merced, Merced	Merced–Coffee	385 S. Coffee St., Merced, CA 95340	Ozone, PM2.5 BAM/FEM, NO2, wind speed, wind direction, outdoor temperature
	Merced–M Street	2334 M Street, Merced, CA 95340	PM10 FRM, PM2.5 FRM
Stockton, San Joaquin	Stockton–Hazelton	1593 E. Hazelton St., Stockton, CA 95205	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 BAM/FEM, CO, NO2, toxics, wind speed, wind direction, outdoor temperature, relative humidity
	Stockton–Wagner/Holt	8778 Brattle Pl., Stockton, CA 95209	PM10 FRM
	Manteca	530 Fishback Rd., Manteca, CA 95337	PM2.5 BAM/FEM, PM10 TEOM/FEM, wind speed, wind direction, outdoor temperature, barometric pressure
	Tracy–Airport	5749 S. Tracy Blvd., Tracy, CA 95376	Ozone, PM10 TEOM/FEM, PM2.5 BAM non–regulatory, NO2, wind speed, wind direction, outdoor temperature, barometric pressure, radio acoustic sounding system (RASS)

Table 5 Ambient Air Monitoring Sites in the San Joaquin Valley Air Basin (Continued)

MSA, County	Site Name	Address	Parameters Monitored
Modesto, Stanislaus	Modesto–14th Street	814 14th Street, Modesto, CA 95354	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 BAM/FEM, CO, wind speed, wind direction, outdoor temperature, barometric pressure
	Turlock	1034 S. Minaret St., Turlock, CA 95380	Ozone, PM10 FRM, PM2.5 BAM FEM, CO, NO2, wind speed, wind direction, outdoor temperature, barometric pressure
Visalia–Porterville, Tulare	Porterville	1839 S. Newcomb St., Porterville, CA 93257	Ozone, PM2.5 BAM non–regulatory, wind speed, wind direction, outdoor temperature, barometric pressure
	Sequoia–Ash Mountain	Ash Mountain, Sequoia National Park CA	Ozone, PM2.5 BAM non–regulatory, wind speed, wind direction, outdoor temperature, relative humidity, solar radiation
	Sequoia–Lower Kaweah	Lower Kaweah Campground, Sequoia National Park, CA	Ozone, wind speed, wind direction, outdoor temperature, relative humidity, solar radiation
	Visalia–Airport	9501 West Airport Drive, Visalia, CA 93277	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation, radio acoustic sounding system (RASS)
	Visalia–Church	310 N. Church St., Visalia, CA 93291	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 BAM non–regulatory, NO2, wind speed, wind direction, outdoor temperature, barometric pressure

Ozone

Ozone is formed when its precursors (oxides of nitrogen (NOx) and volatile organic compounds (VOC)) chemically react in the presence of sunlight. The Valley's topography, high temperatures, subsidence inversions, and light winds are conducive to elevated ozone levels. Winds (at ground level or at higher altitudes) transport pollutants from other basins into the Valley, within the Valley to areas downwind, and from the Valley into other regions.

As specified in Table D–2 of Appendix D to Part 58, ozone monitoring site requirements are based on MSA and design values (see Table 6). Table 7 shows that the Valley's ozone monitoring network meets the requirements. Sites are intended to represent population exposures and maximum concentrations so most ozone monitors are representative of neighborhood and regional scales. The Valley's SLAMS ozone monitors are continuous analyzers that detect ozone through ultraviolet absorption. As continuous devices, these monitors meet the "Timely/Public" objective, providing District staff with the data used in AQI forecasting and reporting. The Valley's ozone monitoring sites, and their scales and site types are shown in Tables 8a and 8b.

Table 6 SLAMS Minimum Ozone Monitoring Requirements
(Table D–2 of Appendix D to Part 58)

MSA population, based on latest available census figures	Number of monitors required if:	
	Most recent 3–year design value concentrations ≥85% of any ozone NAAQS	Most recent 3–year design value concentrations <85% of any ozone NAAQS
> 10 million	4	2
4 – 10 million	3	1
350,000 – < 4 million	2	1
50,000 – < 350,000	1	0

Table 7 8–Hour Ozone Requirements for the San Joaquin Valley

Metropolitan Statistical Area (MSA)	2012 Population	Highest 2012 Ozone Design Value in MSA (ppb)	≥85% of 2008 ozone NAAQS (75 ppb)	Number of monitors required (Table 5)	Number of active SLAMS ozone monitor sites
Bakersfield[2]	731,005	93	Yes	2	6
Fresno	945,711	98	Yes	2	5
Hanford–Corcoran	152,419	90	Yes	1	1
Madera	152,074	86	Yes	1	2
Merced	258,736	83	Yes	1	1
Modesto	519,940	88	Yes	2	2
Stockton	695,750	80	Yes	2	2
Visalia–Porterville	450,840	95	Yes	2	2

[1] Air monitors in the Eastern Kern County Air Pollution Control District would count towards the monitors required for the Bakersfield MSA. However, the "Number of active ozone monitors" listed here includes those in the Valley Portion of Kern County only.

Table 8a San Joaquin Valley Ozone SLAMS Monitors

MSA	County	Site	Scale	Site Type	Monitoring Objective
Bakersfield	Kern	Arvin–Di Giorgio	Neighborhood	High Concentration, Regional transport	1, 2, 3
		Bakersfield–California	Neighborhood	Population	
		Bakersfield–Muni [1]	Neighborhood	High Concentration	
		Edison	Neighborhood	High concentration, Regional transport	
		Maricopa	Neighborhood	Regional transport	
		Oildale	Neighborhood	Regional transport	
		Shafter	Neighborhood	General/background	

1 – Standards/Strategy 2 – Research Support 3 – Timely/Public

[1] Bakersfield–Golden was shut down due to planned road construction in December 2009. The ozone equipment at the new Bakersfield–Muni site began operating in June 2012.

Table 8a San Joaquin Valley Ozone SLAMS Monitors (Continued)

MSA	County	Site	Scale	Site Type	Monitoring Objective
Fresno	Fresno	Clovis–Villa	Neighborhood	High Concentration, Population	1, 2, 3
		Fresno–Drummond	Neighborhood	Population, Regional transport	
		Fresno – Garland	Neighborhood	Population	
		Fresno–Sky Park	Neighborhood	Population, Regional transport	
		Parlier	Neighborhood	High Concentration, Regional transport	
MSA	**County**	**Site**	**Scale**	**Site Type**	**Monitoring Objective**
Hanford–Corcoran	Kings	Hanford–Irwin	Neighborhood	Population	1, 2, 3
MSA	**County**	**Site**	**Scale**	**Site Type**	**Monitoring Objective**
Madera	Madera	Madera–Pump Yard	Neighborhood	General/background	1, 2, 3
		Madera–City	Neighborhood	Population	
MSA	**County**	**Site**	**Scale**	**Site Type**	**Monitoring Objective**
Merced	Merced	Merced–Coffee	Neighborhood	Population	1, 2, 3
MSA	**County**	**Site**	**Scale**	**Site Type**	**Monitoring Objective**
Stockton	San Joaquin	Stockton–Hazelton	Neighborhood	Population	1, 2, 3
		Tracy–Airport	Neighborhood	Regional transport	

1 – Standards/Strategy 2 – Research Support 3 – Timely/Public

Table 8a San Joaquin Valley Ozone SLAMS Monitors (Continued)

MSA	County	Site	Scale	Site Type	Monitoring Objective
Modesto	Stanislaus	Modesto–14th Street	Neighborhood	Population	1, 2, 3
		Turlock	Neighborhood	Population	
MSA	**County**	**Site**	**Scale**	**Site Type**	**Monitoring Objective**
Visalia–Porterville	Tulare	Visalia–Church	Neighborhood	Population	1, 2, 3
		Porterville	Neighborhood	Population	

1 – Standards/Strategy 2 – Research Support 3 – Timely/Public

Table 8b San Joaquin Valley Ozone SPM Monitors

MSA	County	Site	Scale	Site Type	Monitoring Objective
Fresno	Fresno	Tranquillity	Urban Scale	Population	3
Visalia–Porterville	Tulare	Sequoia–Ash Mountain	Regional	High Concentration, Regional transport	3
		Sequoia–Lower Kaweah	Regional	Regional transport	3

3 –Timely/Public

Photochemical Assessment Monitoring Stations

The monitoring objective of Photochemical Assessment Monitoring Stations (PAMS) is research support. Federal regulations (Clean Air Act Section 182 and 40 CFR 58) require serious, severe, and extreme ozone nonattainment areas to have PAMS sites to take speciated measurements of ozone precursors and allow for better understanding of the effect of precursors, control measures, and photochemistry on ozone formation. PAMS sites measure ozone, NOx, total– and speciated–VOC for the PAMS program, CO, and meteorology concurrently. Although the Valley does not exceed federal or state standards for NO_2, NOx reductions contribute to air quality improvement for both ozone and PM.

There are four classifications of PAMS sites:

- Type 1: Background sites upwind of urban areas, where ozone concentrations are presumed not to be influenced by nearby urban emissions.
- Type 2: Maximum ozone precursor emissions sites, typically located in an urban center, where emissions strengths are the greatest.

- Type 3: Maximum ozone concentration sites, intended to show the highest ozone concentrations.
- Type 4: Downwind ozone monitoring sites intended to capture concentrations of transported ozone and precursor pollutants, and determine possible areas from which most of the transport may originate (Type 4 sites are currently not required for the San Joaquin Valley).

As shown in Table 9, the District has a total of six PAMS sites configured as two networks, one centered around Fresno and one around Bakersfield. The PAMS program operates from June 1 through August 31 every year on a 1 in 3 day sampling schedule with an hourly NMOC analyzer. At least four, three–hour integrated samples are collected each sampling day, referred to as a "Trend Day." However, additional samples are collected on "Episode Days," days that are forecasted to have high ozone concentrations. The goal is to sample on three to five multi–day episodes in an ozone season.

Table 9 SJV PAMS Sites (SLAMS)

Fresno MSA	Type 1: Upwind/Background site	Madera–Pump Yard
	Type 2: Maximum precursor emissions	Clovis–Villa
	Type 3: Maximum ozone concentrations	Parlier[1]
Bakersfield MSA	Type 1: Upwind/Background site	Shafter
	Type 2: Maximum precursor emissions	Bakersfield–Muni[2]
	Type 3: Maximum ozone concentrations	Arvin[3]

[1] An NOy monitor will become operational in 2013.
[2] Bakersfield–Golden was shut down for relocation in December 2009. The speciated PAMS equipment at the new Bakersfield– Muni site began operating in June 2012, and all of the other PAMS equipment except for NMHC began operating in July 2012. The NMHC equipment began operating in October 2012.
[3] Arvin–Bear Mountain Blvd. site has closed. PAMS equipment for the Type 3 site at the new Arvin–Di Giorgio site will be installed when space becomes available.

Particulate Matter (PM)

Particulate matter (PM) can be emitted directly as primary PM, and it can form in the atmosphere through chemical reactions of precursors to form secondary PM. Primary PM can be emitted either naturally: windblown dust and wildfires; or from human (anthropogenic) activity: agricultural operations, industrial processes, combustion of wood and fossil fuels, construction and demolition activities, and entrainment of road dust. The resulting ambient PM mixture includes aerosols consisting of components of nitrates, sulfates, elemental carbons, organic carbon compounds, acid aerosols, trace metals, geological materials, etc. Under current regulations, particulate matter is differentiated by particle size as opposed to composition. Federal air quality standards differentiate two size fractions of PM: PM that is 10 microns or less in diameter (PM10) and the smaller subset that is 2.5 microns or less in diameter (PM2.5).

The mountain ranges that surround the Valley contribute to trapping pollutants, including PM, in the Valley. During the winter, weather systems bring rainfall to the

Valley, but the atmospheric environment also becomes conducive to secondary PM formation. The Valley's frequent and strong winter temperature inversions prevent air from rising and particulates remain trapped near the surface. During winters with little rainfall or the Valley's hot, dry summers, the dry soils contribute to PM emissions when disturbed.

The California Regional Particulate Air Quality Study (CRPAQS) is the Valley's comprehensive particulate field study. CRPAQS monitoring occurred between December 1999 and February 2001 through the use of over 70 SPM PM10 sites and 50 SPM PM2.5 sites. Researchers have used CRPAQS measurements for database development, analysis, and modeling. Data collection for the study has been completed but the data analysis is still ongoing. In addition to CRPAQS, other studies assess particulate emissions from agricultural operations, unpaved and paved road particulate emissions, and particulate formation in fog episodes. The design of the Valley's current PM network is an outgrowth of the results and analysis from CRPAQS.

The Valley's PM monitoring network includes Federal Reference Method (FRM) monitors, Federal Equivalent Method (FEM) monitors, and Non–FRM/FEM monitors. FRM monitors for PM are manual filter–based monitors; samples are collected on either a one–in–six day sampling schedule or a one–in–three day sampling schedule. FRM monitors meet the "Standards/Strategy" objective, helping agencies determine the Valley's attainment status and helping shape the strategies for reaching or maintaining PM attainment. FRM filters can also be analyzed for PM speciation, so they are sometimes used for "Research Support" objectives as well.

Beta Attenuation Monitors (BAM) and Tapered Element Oscillating Microbalance (TEOM) monitors are continuous, near real–time monitors that provide the hourly PM data used in AQI and Smoke Management System (SMS) burn allocations. Data from these monitors are also used in hazard reduction burning allocations and in residential wood burning declarations. As such, these monitors help meet the "Timely/Public" objective.

Not all real–time monitors meet the "Standards/Strategy" objective because they do not meet the rigorous engineering design, quality assurance, and quality control standards necessary for comparison to the NAAQS. An FEM monitor is often a real–time monitor that has been designated by EPA as being equivalent to FRM monitors. FEMs satisfy both the "Standards/Strategy" objective and the "Timely/Public" objective. All of the Valley's TEOMs are FEMs, and some of the Valley's BAMs are FEMs.

PM10 Monitors in the Valley

The San Joaquin Valley has been redesignated to attainment for PM10, and the District's *2007 PM10 Maintenance Plan* and ongoing PM10 monitoring will assure continued compliance with the federal standard. Table 10 shows the minimum number of PM10 sites required per MSA and Table 11 shows the PM10 monitoring requirements for the San Joaquin Valley. The Valley's SLAMS and SPM PM10 monitoring stations are summarized in Tables 12a, 12b, and 13 respectively.

Table 10 Minimum PM10 Monitoring Requirements

(Table D–4 of Appendix D to Part 58)

(A range is presented, and the actual number of stations per area is jointly determined by EPA, the State, and the local agency)

Population category	High concentration: Ambient concentrations exceed the PM10 NAAQS by 20% or more (≥180 µg/m³)	Medium concentration: Ambient concentrations exceed 80% of the PM10 NAAQS (>120 µg/m³)	Low concentration: Ambient concentrations less than 80% of the PM10 NAAQS (< 120 µg/m³), or no design value
> 1,000,000	6 – 10	4 – 8	2 – 4
500,000 – 1,000,000	4 – 8	2 – 4	1 – 2
250,000 – 500,000	3 – 4	1 – 2	0 – 1
100,000 – 250,000	1 – 2	0 – 1	0

Table 11 PM10 Monitoring requirements for the Valley

Metropolitan Statistical Area (MSA)	County	2012 Population	PM10			
			24–hour 2012 Highest concentration in MSA (µg/m³)[1]	Monitors required	Actual # of SLAMS sites in MSA	Actual # of SPM sites in MSA
Bakersfield[2]	Kern	731,005	100	1 – 2	2	0
Fresno	Fresno	945,711	114	1 – 2	3	0
Hanford–Corcoran	Kings	152,419	128	1 – 2	2	1
Madera	Madera	152,074	115	0	1	0
Merced	Merced	258,736	89	0 – 1	1	0
Modesto	Stanislaus	519,940	103	1 – 2	2	0
Stockton	San Joaquin	695,750	139	2 – 4	2	2
Visalia–Porterville	Tulare	450,840	76	0 – 1	1	0

[1] Pending Exceptional Events are excluded from Table 10.

[2] The Bakersfield–Golden State AMS was closed in December 2009 due to planned road construction and was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield–Muni from July 2012 until late February 2013. See Appendix C for details.

Table 12a San Joaquin Valley PM10 SLAMS monitor information

MSA/CBSA: Bakersfield **County:** Kern				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Oildale	Neighborhood	Population	Standards/Strategy Research Support	1:6
Bakersfield–California	Neighborhood	Population	Standards/Strategy Research Support	1:6
MSA/CBSA: Fresno **County:** Fresno				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Fresno–Drummond	Neighborhood	Population	Standards/Strategy Research Support	1:6
Fresno–Garland	Urban	NCORE	Population Exposure	1:1
Clovis–Villa	Neighborhood	Population	Standards/Strategy Research Support	1:6
MSA/CBSA: Hanford–Corcoran				
County: Kings				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Hanford–Irwin	Neighborhood	Population	Standards/Strategy Research Support	1:6
Corcoran–Patterson	Neighborhood	High Concentration	Standards/Strategy Research Support	1–Hour
MSA/CBSA: Madera **County:** Madera				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Madera–City	Neighborhood	Population	Standards/Strategy Research Support Timely/Public	1–Hour

Table 12a San Joaquin Valley PM10 SLAMS monitor information (Continued)

MSA/CBSA: Merced **County:** Merced				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Merced–M Street	Neighborhood	High Concentration, Population	Standards/Strategy Research Support	1:6
MSA/CBSA: Stockton **County:** San Joaquin				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Stockton–Hazelton	Neighborhood	Population	Standards/Strategy Research Support	1:6
Stockton–Wagner/ Holt	Neighborhood	Population	Standards/Strategy Research Support	1:6
MSA/CBSA: Modesto **County:** Stanislaus				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Modesto–14th Street	Neighborhood	Population	Standards/Strategy Research Support	1:6
Turlock	Neighborhood	Population	Standards/Strategy Research Support	1:6
MSA/CBSA: Visalia–Porterville **County:** Tulare				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Visalia–Church	Neighborhood	Population	Standards/Strategy Research Support	1:6

Table 12b San Joaquin Valley PM10 SPM monitor information

MSA/CBSA: Hanford–Corcoran **County:** Kings				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Hanford–Irwin	Neighborhood	Population	Research Support Timely/Public	1–Hour
MSA/CBSA: Stockton **County:** San Joaquin				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Manteca	Neighborhood	Population	Standards/Strategy Research Support	1–Hour
Tracy–Airport	Neighborhood	Regional transport	Standards/Strategy Research Support Timely/Public	1–Hour

Table 13 San Joaquin Valley PM10 monitor types

MSA/CBSA: Bakersfield **County:** Kern[1]	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Bakersfield–California	1		1	
Oildale	1		1	
Total SLAMS/SPM			**2**	
MSA/CBSA: Fresno **County:** Fresno	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Clovis–Villa	1		1	
Fresno–Drummond	1		1	
Fresno–Garland		1	1	
Total SLAMS/SPM			**3**	

[1] The Bakersfield–Golden State AMS was closed in December 2009 and was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield–Muni from July 2012 until late February 2013. See Appendix C for details.

Table 13 San Joaquin Valley PM10 monitor types (Continued)

MSA/CBSA: Hanford–Corcoran **County:** Kings	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Corcoran		1	1	
Hanford–Irwin	1		1	
		1		1
Total SLAMS/SP			**2**	**1**
MSA/CBSA: Madera **County:** Madera	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Madera–City		1	1	
Total SLAMS/SPM			**1**	
MSA/CBSA: Merced **County:** Merced	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Merced–M Street	1		1	
Total SLAMS/SPM			**1**	
MSA/CBSA: Stockton **County:** San Joaquin	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Manteca		1		1
Stockton–Hazelton	1		1	
Stockton–Wagner/Holt	1		1	
Tracy–Airport		1		1
Total SLAMS/SPM			**2**	**2**

Table 13 San Joaquin Valley PM10 monitor types (Continued)

MSA/CBSA: Modesto **County:** Stanislaus	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Modesto–14th Street	1		1	
Turlock	1		1	
Total SLAMS/SPM			**2**	
MSA/CBSA: Visalia – Porterville **County:** Tulare	**Instrument Type**		**Monitor Type**	
	FRM	**FEM**	**SLAMS**	**SPM**
Site Name				
Visalia–Church	1		1	
Total SLAMS/SPM			**1**	

PM2.5 Monitors in the Valley

The San Joaquin Valley is designated nonattainment for PM2.5. Table 14 shows the minimum number of PM2.5 sites required per MSA and Table 15 shows the PM2.5 monitoring requirements for the San Joaquin Valley. The Valley's SLAMS and SPM PM2.5 monitoring stations are summarized in Tables 16a, 16b, and 17 respectively.

Table 14 Minimum PM2.5 Monitoring Requirements

MSA population	**Most recent 3–year design value ≥85% of any PM2.5 NAAQS** (equivalent to an annual design value ≥ 10.2 µg/m³ or a 24–hour design value ≥ 29.8 µg/m³), or no design value	**Most recent 3–year design value <85% of any PM2.5 NAAQS** (equivalent to an annual design value < 10.2 µg/m³ or a 24–hour design value < 29.8 µg/m³), or no design value
> 1,000,000	3	2
500,000 – 1,000,000	2	1
50,000 – < 500,000	1	0

Table 15 PM2.5 Monitoring requirements for the Valley

Metropolitan Statistical Area (MSA)	County	2012 Population	PM2.5[1]				
			24–hour 2010–2012 Design Value in MSA (µg/m³)	Annual 2010–2012 Design Value in MSA (µg/m³)	Monitors required	Actual # of SLAMS sites in MSA	Actual # of SPM sites in MSA
Bakersfield[2]	Kern	731,005	58	15.6	2	2	1
Fresno[3]	Fresno	945,711	57	14.8	2	3	4
Hanford–Corcoran	Kings	152,419	54	15.8	1	1	1
Madera	Madera	152,074	51	19.0	1	1	0
Merced	Merced	258,736	41	14.3	1	1	1
Modesto	Stanislaus	519,940	49	14.9	2	3	0
Stockton	San Joaquin	695,750	38	11.6	2	2	1
Visalia–Porterville	Tulare	450,840	47	14.8	1	1	3

[1] Air quality data may include data influenced by exceptional events and/or data completeness and substitution requirements.

[2] The Bakersfield–Golden State AMS was closed in December 2009 and was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield–Muni from July 2012 until late February 2013. See Appendix C for details.

[3] During January 2012, the Fresno–First Street AMS closed and moved two blocks to the north where it became the Fresno–Garland AMS so the January 2012 values from the Fresno–First site were not counted. The 2010 and 2011 values from the Fresno–First site were combined with the 2012 values from the Fresno–Garland site to determine the values shown in the Table 14.

Table 16a San Joaquin Valley PM2.5 SLAMS monitor information

MSA/CBSA: Bakersfield
County: Kern

Site Name	Scale	Site Type	Monitoring Objective	Sampling Schedule
Bakersfield–Planz	Neighborhood	Population	Standards/Strategy	1:3
Bakersfield–California	Neighborhood	Population	Standards/Strategy	Daily

Table 16a San Joaquin Valley PM2.5 SLAMS monitor information (Continued)

MSA/CBSA: Fresno **County:** Fresno				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Fresno–Pacific	Neighborhood	Population	Standards/Strategy Research Support	1:3
Fresno–Garland	Neighborhood	High Concentration	Standards/Strategy Research Support	Daily
Clovis–Villa	Neighborhood	High Concentration	Standards/Strategy Research Support	1:3
MSA/CBSA: Hanford–Corcoran **County:** Kings				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Corcoran–Patterson	Neighborhood	High Concentration	Standards/Strategy Research Support	1:3
MSA/CBSA: Madera **County:** Madera				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Madera–City	Neighborhood	Population	Standards/Strategy Research Support Timely/Public	1–Hour
MSA/CBSA: Merced **County:** Merced				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Merced–M Street	Neighborhood	Population	Standards/Strategy Research Support	1:3

Table 16a San Joaquin Valley PM2.5 SLAMS monitor information (Continued)

MSA/CBSA: Stockton **County:** San Joaquin				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Manteca	Neighborhood	Population	Standards/Strategy Research Support	1–Hour
Stockton–Hazelton	Neighborhood	Population	Standards/Strategy Research Support	1–Hour
			Standards/Strategy Research Support Timely/Public	1–Hour
MSA/CBSA: Modesto **County:** Stanislaus				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Modesto–14th Street	Neighborhood	Population	Standards/Strategy Research Support	1:3 / 1–Hour
			Standards/Strategy Research Support Timely/Public	1–Hour
Turlock	Neighborhood	Population	Standards/Strategy Research Support Timely/Public	1–Hour
MSA/CBSA: Visalia – Porterville **County:** Tulare				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Visalia–Church	Neighborhood	Population	Standards/Strategy Research Support	1:3

Table 16b San Joaquin Valley PM2.5 SPM monitor information

Site Name	Scale	Site Type	Monitoring Objective	Sampling Schedule
MSA/CBSA: Bakersfield **County:** Kern[1]				
Bakersfield–California	Neighborhood	Population	Area–wide	1–Hour
Lebec	Neighborhood	Population	Research Support Timely/Public	1–Hour
MSA/CBSA: Fresno **County:** Fresno				
Fresno–Garland	Neighborhood	High Concentration	Area–wide	1–Hour
Fresno–Drummond	Neighborhood	High Concentration	Research Support Timely/Public	1–Hour
Huron	Neighborhood	Population	Research Support Timely/Public	1–Hour
Tranquillity	Urban	Background	Standards/Strategy Research Support Timely/Public	1–Hour
MSA/CBSA: Hanford–Corcoran **County:** Kings				
Hanford–Irwin	Neighborhood	Population	Research Support Timely/Public	1–Hour
MSA/CBSA: Merced **County:** Merced				
Merced–Coffee	Neighborhood	Population	Research Support Timely/Public	1–Hour

[1] The Bakersfield–Golden State AMS was closed in December 2009 and was relocated to the Bakersfield– Municipal Airport (Bakersfield–Muni) AMS in 2012. The PM2.5 monitor operated for a short time. See Appendix C for details.

Table 16b San Joaquin Valley PM2.5 SPM monitor information (Continued)

MSA/CBSA: Stockton **County:** San Joaquin				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Tracy–Airport	Neighborhood	Regional transport	Research Support Timely/Public	1–Hour
MSA/CBSA: Visalia–Porterville **County:** Tulare				
Site Name	**Scale**	**Site Type**	**Monitoring Objective**	**Sampling Schedule**
Sequoia–Ash Mountain	Regional	Regional transport	Research Support Timely/Public	1–Hour
Porterville	Neighborhood	Population	Research Support Timely/Public	1–Hour
Visalia–Church	Neighborhood	Population	Area–wide	1–Hour

Table 17 San Joaquin Valley PM2.5 monitor types

MSA/CBSA: Bakersfield **County:** Kern[1]	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Bakersfield–Planz	1			1	
Bakersfield–California	1			1	
			1		1
Lebec			1		1
Total SLAMS/SPM				**2**	**2**
MSA/CBSA: Fresno **County:** Fresno	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Clovis–Villa	1	1		1	
Fresno–Garland	1			1	
			1		1
Fresno–Pacific	1			1	
Fresno–Drummond		1			1
Huron			1		1
Tranquillity		1			1
Total SLAMS/SPM				**3**	**4**

[1] The Bakersfield–Golden State AMS was closed in December 2009 and was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield–Muni from July 2012 until late February 2013. See Appendix C for details.

Table 17 San Joaquin Valley PM2.5 monitor types (Continued)

MSA/CBSA: Hanford–Corcoran **County:** Kings	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Corcoran–Patterson	1			1	
Hanford–Irwin		1			1
Total SLAMS/SPM				**1**	**1**
MSA/CBSA: Madera **County:** Madera	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Madera–City		1		1	
Total SLAMS/SPM				**1**	
MSA/CBSA: Merced **County:** Merced	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Merced–Coffee		1			1
Merced–M Street	1			1	
Total SLAMS/SPM				**1**	**1**
MSA/CBSA: Stockton **County:** San Joaquin	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Manteca		1		1	
Stockton–Hazelton		1		1	
Tracy–Airport			1		1
Total SLAMS/SPM				**2**	**1**
MSA/CBSA: Modesto **County:** Stanislaus	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Modesto–14th Street	1	1		2	
Turlock		1		1	
Total SLAMS/SPM				**3**	

Table 17 San Joaquin Valley PM2.5 monitor types (Continued)

MSA/CBSA: Visalia–Porterville **County:** Tulare	**Instrument Type**			**Monitor Type**	
	FRM	**FEM**	**Non–FEM**	**SLAMS**	**SPM**
Site Name					
Porterville			1		1
Sequoia–Ash Mountain			1		1
Visalia–Church	1			1	
			1		1
Total SLAMS/SPM				**1**	**3**

PM Collocation Requirements

(40 CFR 58 Appendix A, Sections 3.2.5 and 3.2.6)

The District's Particulate Matter collocation requirements are met by the "Primary Quality Assurance Organization" (PQAO). ARB is the PQAO for the District as well as several other air districts. See CARB's Air Monitoring Network Plans for details on how collocation requirements are met by the PQAO.

Public Review of Changes to the PM2.5 Monitoring Network

Public input is required whenever the District proposes to move an existing violating PM2.5 monitor (40 CFR 58.10(c)). The District uses the annual Air Monitoring Network Plan to notify and seek public comment on any planned changes to the existing PM2.5 network. The public has 30 days to comment on the Monitoring Network Plan and any PM2.5 network changes. The plan is posted on the District website, and public notice is published in a newspaper of general circulation in each affected CBSA.

In the event of unanticipated changes to the PM2.5 network that occur outside the Monitoring Network Plan process, the District will post public notice in Valley newspapers, post a document describing the proposed changes on its website, and seek public comment.

Carbon Monoxide

On August 12, 2011 EPA issued the decision to retain the existing NAAQS for CO. The primary standards are 9 parts per million (ppm) measured over 8 hours, and 35 ppm measured over 1 hour. As specified in 40 CFR Part 58 Appendix D Section 4.2, one CO monitor is required to be placed at a "near–road" NO_2 monitoring station in a CBSA with population of 1 million or more. Moving an existing monitor to a new location is acceptable.

At NCore sites, CO monitors required in CBSAs with populations of 2.5 million or more are to be operating by January 1, 2015, and CO monitors required in CBSAs with populations of 1 million or more are to be operational by January 1, 2017. Currently, the CBSAs within the District are comprised of less than 1 million people, thus the District is not required to place a CO monitor at a near–road NO_2 monitoring station. EPA is

providing authority to EPA Regional Administrators to require additional monitoring in case–by–case circumstances, such as in areas impacted by major stationary CO sources, in urban downtown areas, or urban street canyons, or in areas adversely impacted by meteorological and/or topographical influences.

In the past, monitoring has shown that the Valley's CO concentrations have not exceeded the NAAQS for over a decade. As noted in Section 4.2 of Appendix D of 40 CFR Part 58, there are no minimum requirements of the number of CO monitoring sites. The District continues CO monitoring to supplement related meteorological and criteria pollutant data. Table 18 summarizes the Valley's CO monitoring sites.

Table 18 Carbon Monoxide Monitoring Stations in the San Joaquin Valley

Site Name	Sampling Frequency	Scale	Site Type	Objective
Bakersfield–Muni [1]	Continuous	Neighborhood	Population	Standards/ Strategy
Clovis–Villa	Continuous	Neighborhood	Population	Standards/ Strategy
Fresno–Drummond	Continuous	Neighborhood	Population	Standards/ Strategy
Fresno–Garland [2]	Continuous	Neighborhood	Population	Max Precursor Emissions Impact
Fresno–Sky Park	Continuous	Neighborhood	Population	Standards/ Strategy
Modesto–14th Street	Continuous	Neighborhood	Population	Population Exposure
Stockton– Hazelton	Continuous	Neighborhood	Population	Population Exposure
Turlock	Continuous	Neighborhood	Population	Standards/ Strategy

[1] The Bakersfield–Golden State AMS was closed in December 2009 and has been relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) site.

[2] In December 2011, CARB moved the Fresno–First air monitoring station to Garland Avenue which is two blocks north of the Fresno–First site.

Nitrogen Dioxide

In 2010, EPA retained the annual average NO_2 standard of 53 ppb, and established a new 1–hour NO_2 standard at the level of 100 parts per billion (ppb). Recognizing that the current NO_2 network is not adequate for fully assessing compliance with the new NAAQS, EPA finalized a Three–Tier Network design that will represent NO_2 concentrations that occur near freeways, urban areas, and locations aimed at protecting susceptible and vulnerable communities. Per 40 CFR Part 58, the Three–Tier Network design is comprised of:

(1) In CBSAs with more than 1,000,000 people, one monitor that represents highest NO_2 exposure with a neighborhood scale or larger
(2) Near–road monitoring at locations of expected maximum 1–hour NO_2 concentrations near heavily trafficked roads in urban areas
(3) A NO_2 network consisting of 40 monitors designed by the Regional Administrators to protect susceptible and vulnerable communities

Even though the District is not required to have an area–wide monitor, the District operates an extensive NO_2 monitoring network. The District locates NO_2 analyzers as required at PAMS AMSs and generally collocates NO_2 analyzers wherever an ozone monitor is required. Currently, these 16 monitors indicate that the District has low NO_2 levels that would be in compliance with both the NO_2 standards if the site met NAAQS siting criteria. Because these measurements are low and traffic volumes are also low when compared to other areas of the State, the District anticipates meeting the hourly standard once the near–road monitors are built and begin collecting data. The NO_2 monitoring stations in the San Joaquin Valley are shown in Table 19.

The District is in the process of locating and building one NO_2 near–road monitoring site in each of the Fresno, Bakersfield, Stockton, and Modesto CBSAs (four in total). The District has found potential NO_2 near–road monitoring sites in the Bakersfield and Fresno CBSAs. The required documentation for these two NO_2 near–road monitoring sites is found in Appendix D and E. The search for the other two locations is continuing and will be presented to the public as required by the CFR.

The third network, the Regional Administrator Required Monitoring Network (RA40) will consist of 40 NO_2 sites located throughout the United States and their locations will be determined by the Regional Administrators. These 40 sites would be in addition to the minimum NO_2 monitoring requirements. The specific locations for these sites have not been determined by EPA Region 9. The District will work with EPA Region 9 to address RA40 NO_2 siting, as appropriate.

Table 19 NO_2 Monitoring Stations in the San Joaquin Valley

Site Name	Sampling Frequency	Scale	Site Type	Objective
Bakersfield–California	Continuous	Neighborhood	Population	Population Exposure
Bakersfield–Muni [1]	Continuous	Neighborhood	High Concentration	Standards/Strategy, Research
Clovis–Villa	Continuous	Neighborhood	High Concentration	Standards/Strategy, Research
Edison	Continuous	Neighborhood	Population	Population Exposure
Fresno–Drummond	Continuous	Neighborhood	High Concentration	Standards/Strategy
Fresno–Garland	Continuous	Neighborhood	Population	Max Precursor Emissions Impact
Fresno–Sky Park	Continuous	Neighborhood	Population	Standards/Strategy
Hanford–Irwin	Continuous	Neighborhood	Population	Standards/Strategy, Research, Timely/Public
Madera–Pump	Continuous	Neighborhood	Population	Standards/Strategy, Research
Merced–Coffee	Continuous	Neighborhood	Population	Standards/Strategy
Parlier	Continuous	Neighborhood	Population	Standards/strategy, Research
Shafter	Continuous	Neighborhood	Population	Population exposure
Stockton–Hazelton	Continuous	Neighborhood	Population	Population Exposure
Tracy–Airport	Continuous	Neighborhood	Population	Standards/Strategy
Turlock	Continuous	Neighborhood	Population	Standards/Strategy
Visalia–Church	Continuous	Neighborhood	Population	Standards/Strategy

[1] The Bakersfield–Golden State NO_2 monitor was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) site in 2012.

Sulfur Dioxide

In 2010, EPA revised the SO_2 NAAQS and monitoring requirements in the Federal Register (CFR, 40 CFR Part 58, Section 4.4). EPA established a new primary 1–hour standard of 75 parts per billion (ppb), and also revoked the previous 24–hour and annual primary standards. The number of monitor requirements for SO_2 is determined by the Populations Weighted Emissions Index (PWEI) value in units of million persons–tons per year. The PWEI is calculated using each CBSA's updated census data or estimates, and a combined total of the latest available county level SO_2 emissions data in the National Emissions Inventory for the counties in each CBSA. The population of a

CBSA is multiplied with the total amount of SO_2 in tons per year emitted within a CBSA, and the resulting product is then divided by one million to produce the PWEI value. The Valley's PWEI values are shown in Table 20a.

Table 20a Populations Weighted Emissions Index for the San Joaquin Valley

County (CBSA)	Total County Population [1]	SO_2 Tons per Year [2]	PWEI
Fresno	945,711	458	433
Kern	850,006	2,212	1,880
Kings	152,419	55	8
Madera	152,074	113	17
Merced	258,736	66	17
San Joaquin	695,750	1,097	763
Stanislaus	519,940	312	162
Tulare	450,840	122	55

[1] Total County Population includes the entire county. Population data from California Department of Finance E–1 Population Estimates for Cities, Counties and the State, January 1, 2012.

[2] SO_2 Tons per Year includes the entire county. SO_2 data is from the most recent data available from the 2008 National Emissions Inventory for each county. The data from the 2009 National Emissions Inventory for each county are not yet available.

As per 40 CFR Part 58, Appendix D Section 4.4, at least three SO_2 monitors are required in CBSAs with a PWEI value equal to or greater than 1,000,000. CBSAs with a PWEI value equal to or greater than 100,000, but less than 1,000,000, are required to have at least two SO_2 monitors. A minimum of one SO_2 is required in CBSAs with a PWEI value equal to or greater than 5,000, but less than 100,000. There is no required number of SO_2 monitors for CBSAs that do not exceed the federal standard for SO_2. The Valley does not exceed the federal standard for SO_2 but there is one SO_2 monitoring site in the Valley (shown in Table 20b). This Fresno–Garland monitor is operated by CARB and is part of the NCore Network.

Table 20b SO_2 Monitoring Station in the San Joaquin Valley

Site Name	Sampling Frequency	Scale	Site Type	Objective
Fresno–Garland	Continuous	Neighborhood	Population	Standards/ Strategy

Lead

EPA revised the lead NAAQS and monitoring requirements in the Federal Register on November 12, 2008 (40 CFR 58.10). The rule became effective on January 26, 2011. EPA requires monitoring agencies to install non–source oriented lead monitors at NCore sites in CBSAs with populations of 500,000 or greater. The only site meeting these criteria within the District is Fresno–Garland which is operated by the California

Air Resources Board. In December 2011, CARB installed a TSP–Lead sampler to satisfy this requirement. EPA also requires state monitoring agencies to use the emission threshold of 0.5 tons per year (tpy) when determining if a monitor should be placed near an industrial facility that emits lead. The emission threshold for airport sources is 1.0 tpy, except for airports that are included in special studies. The District has not identified any lead sources above the aforementioned thresholds, thus it is not required to monitor for that threshold at this time.

Toxics

The airborne toxics program is run by the CARB. Toxics measurements are collected at Bakersfield–California, Fresno–Garland, and Stockton–Hazelton. Periodic, 24–hour samples are analyzed for the following gases: benzene, Carbon tetrachloride, chloroform, ethylene dibromide, ethylene dichloride, methyl chloroform, methylene chloride, perchloroethylene, toluene, trichloroethylene, and m–, p–, and o–xylene. The samples are also analyzed for the following particulate metals: arsenic and chromium–6. CARB's Integrated NMOC sampling program and the District's PAMS NMOC sampling program also identify and quantify several toxic hydrocarbon species.

NCore

EPA's October 2006 ambient air monitoring amendments established a requirement for National Core (NCore) multi–pollutant monitoring stations to be operational by January 1, 2011. The Fresno–First AMS, which was operated by CARB, was selected by EPA to be an NCore site. CARB submitted an NCore plan to EPA in November 2009. The Fresno—First site already met the NCore requirements for filter–based and continuous PM2.5, speciated PM2.5, ozone, and meteorology. In December 2010, CARB installed trace level CO, trace level SO_2, trace level NOy, and continuous PM–Coarse monitors at this site. A gas dilution calibrator, a zero air generator, and digital data loggers were also installed to support NCore monitoring. In December 2011, CARB installed a TSP–lead sampler which completed all the pollutant monitoring requirements for the NCore program. Additionally, CARB moved the Fresno–First AMS to Garland Avenue which is two blocks north of the Fresno–First site. The Fresno–Garland AMS continues to serve as an NCore site. This relocation was recently approved by EPA, see Appendix F for details.

Meteorology

A variety of meteorological parameters are measured for various District programs affected by weather. Such programs include air quality forecasting, PAMS, exceptional events, long–term planning, and pollutant trend assessment. These activities help protect public health and have made the public and media more aware of air quality and what can be done to reduce air pollution. See Table 21 for the meteorological parameters measured in the Valley.

Table 21 Meteorological Parameter Monitoring Stations in the San Joaquin Valley

Site	Wind Speed	Wind Direction	Outdoor Temperature	Relative Humidity	Barometric Pressure	Solar Radiation
Arvin–Di Giorgio			X			
Bakersfield–California	X	X	X	X	X	X
Bakersfield–Muni [1]	X	X	X	X	X	X
Clovis–Villa	X	X	X	X	X	X
Corcoran–Patterson	X	X	X		X	
Edison	X	X	X			
Fresno–Drummond	X	X	X		X	
Fresno–Garland	X	X	X	X	X	
Fresno–Sky Park	X	X	X			
Hanford–Irwin	X	X	X		X	
Huron					X	
Lebec	X	X	X		X	
Madera–City	X	X	X	X	X	X
Madera–Pump Yard	X	X	X	X	X	X
Manteca	X	X	X		X	
Maricopa	X	X	X		X	
Merced–Coffee	X	X	X			
Modesto–14th Street	X	X	X		X	
Oildale	X	X	X			
Parlier	X	X	X	X	X	X
Porterville	X	X	X		X	
Sequoia–Ash Mountain	X	X	X	X		X
Sequoia–Lower Kaweah	X	X	X	X		X
Shafter	X	X	X	X	X	X
Stockton–Hazelton	X	X	X	X		
Tracy–Airport	X	X	X		X	
Tranquillity	X	X	X		X	
Turlock	X	X	X		X	
Visalia–Church	X	X	X		X	
Visalia–Airport	X	X	X	X	X	X

[1] The Bakersfield–Golden State AMS was closed in December 2009 and has been relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) site.

Summary of Recent Changes to the District's Air Monitoring Network (Period: 2011 through Current)

- In 2011 and 2012, Anderson sampling instruments at the Fresno–Pacific, Merced–M Street, Corcoran, Clovis, and Corcoran monitoring sites were replaced with Partisol Units.

- In December 2011, CARB moved the Fresno–First AMS to Garland Avenue which is two blocks north of the Fresno–First site. The new site is now referred to as Fresno–Garland and became operational on December 31, 2011. On March 7, 2013, EPA official approved the relocation and a copy of the letter is attached as Appendix F.

- In 2011, the Corcoran AMS was shut down temporarily due to safety issues and repairs were made to the site. The site resumed operating in August 2012 with a Grimm 180 PM2.5 monitor being used for acceptance testing and evaluation purposes, a real–time PM10 monitor, and a filter–based PM2.5 FRM monitor. Redundant PM10 monitors were removed and the higher time resolution monitor kept. The collocated PM10 monitor was moved to the Fresno–Drummond site.

- The collocated PM10 monitor at the Fresno–Drummond site began reporting data in October 2012.

- The temporary PM10 monitor at the Bakersfield–California site was moved to the Bakersfield–Muni site which replaced the Bakersfield–Golden site however the monitor is no longer operating at Bakersfield–Muni since PM monitoring is being moved to a new location (see Appendix C for details).

- A PM2.5 FEM/BAM Special Purpose Monitor was installed at the Fresno Drummond site in October 2012. The purpose of this analyzer is to provide data to compare with the Fresno–Pacific analyzer.

- In December 2009, the District was forced to close the Bakersfield–Golden State Highway (Bakersfield–Golden) air monitoring station (AMS) due to the expansion of Golden State Highway and subsequent loss of the air monitoring site lease. As referenced in the District's previous Network Plans as a planned change to the air monitoring network, the Bakersfield–Golden AMS was relocated to the Bakersfield–Municipal Airport (Bakersfield–Muni) site. The Bakersfield–Muni site was intended to serve primarily as a PAMS Type 2 site, in addition to providing monitoring of both PM10 and PM2.5 for forecasting purposes. All of the equipment was installed in 2012. However, it soon became apparent that this site was not acceptable as a PM10 and PM2.5 site because site specific emissions from nearby sources were impacting the site, and the site was therefore not measuring ambient particulate concentrations. The PM10 and PM2.5 analyzers were subsequently removed at the end of February 2013, for potential relocation to a better site as soon as practicable. For complete details see Appendix C.

Summary of Planned Changes to the District's Air Monitoring Network (Period: Current through Mid–2014)

The Valley air monitoring network is continually being improved. MSA–specific changes are generally described below. Before any action is taken on the planned changes noted in this section, the District will work with ARB and EPA, as appropriate, to address necessary requirements for documentation.

EPA has recently changed both CO and NOx monitoring regulations. EPA has noted that some of the existing analyzers are no longer needed for NAAQS purposes. The District will examine the CO and NOx monitoring network requirements to determine whether or not changes are needed to the existing network.

Stockton CBSA/MSA

The District is planning on shutting down the Stockton Wagner/Holt AMS PM10 AMS in 2013, given that the existing Stockton Hazelton PM10 AMS meets the minimum PM10 monitoring requirements for Stockton CBSA/MSA. Additionally, PM10 Special Purpose Monitors (SPM) in Tracy and Manteca provide PM10 monitoring in Stockton CBSA/MSA. Required documentation for this change will be provided to EPA outside of this network plan.

Modesto CBSA/MSA

The District does not have any changes scheduled for this MSA during this time period.

Merced CBSA/MSA

The District does not have any changes scheduled for this MSA during this time period.

Madera CBSA/MSA

The District may investigate consolidating Madera–Pump into the Madera–City site.

Fresno CBSA/MSA

The District is investigating consolidating Fresno–Pacific into the Fresno–Drummond site. To provide supporting information, the District has installed an SPM at the Fresno–Drummond AMS. In addition, a NOy monitor will be added to the Parlier site comply with the regulations for PAMS Type 3 sites.

Hanford–Corcoran CBSA/MSA

The District has started analyzing the data from the Grimm 180 and preliminary indications are that the Grimm 180 measurements are running considerably higher than those of the FRM monitor. In order to meet District's needs, the Grimm 180 measurements should reasonably match the measurements of the FRM. While the

Grimm 180 has earned a FEM certification by EPA, the District has found that not all FEM certified analyzers work well in the San Joaquin Valley.

Visalia–Porterville CBSA/MSA

The District does not have any changes scheduled for this MSA during this time period.

Bakersfield CBSA/MSA

The District plans to install PAMS Type 3 equipment when space becomes available at an appropriate location in the Arvin area.

Data Submission Requirements

Air Quality and Precision data are submitted to EPA on an ongoing basis once all air quality assurance checks are completed by the District. Accuracy data is submitted to EPA by CARB as part of their scheduled audits. The District has certified the 2012 Air Quality data.

Acronyms and Abbreviations

AIRS: Aerometric Information Retrieval System
AQI: Air Quality Index
AQS: Air Quality System
CARB: California Air Resources Board
ARM: Approved Regional Method
BAM: Beta Attenuation Monitor
CAA: Clean Air Act
CBSA: Core–Based Statistical Area
CCOS: Central California Ozone Study
CFR: Code of Federal Regulations
CRPAQS: California Regional Particulate Air Quality Study
CO: Carbon Monoxide
CO_2: Carbon Dioxide
CSA: Combined statistical area
District: San Joaquin Valley Air Pollution Control District
EBAM: Environmental Beta Attenuation Monitor
EPA: U.S. Environmental Protection Agency
FEM: Federal Equivalent Method
FIPS: Federal information processing standard
FR: Federal Register
FRM: Federal Reference Method
GHG: Green House Gases
MSA: Metropolitan statistical area
NAAQS: National Ambient Air Quality Standard
NCore: National Core
NMOC: Non–Methane Organic Compounds
NO_2: Nitrogen Dioxide
NOAA: National Oceanic and Atmospheric Administration
NOx: Oxides of Nitrogen
NO_y: Reactive Nitrogen
NPS: National Park Service
O_3: Ozone
PAMS: Photochemical Assessment Monitoring Station
Pb: Lead
PM: Particulate Matter
PM2.5: Particulate Matter 2.5 microns or less in diameter
PM10: Particulate Matter 10 microns or less in diameter
SLAMS: State and Local Air Monitoring Station
SJV: San Joaquin Valley
SJVAPCD: San Joaquin Valley Air Pollution Control District
SMS: Smoke Management System
SO_2: Sulfur Dioxide
SPM: Special Purpose Monitor
STN: Speciated Trends Network
TEOM: Tapered Element Oscillating Microbalance
TSP: Total Suspended Particles
Valley: San Joaquin Valley
VOC: Volatile Organic Compounds

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APPENDIX A:

Air Monitoring Site Descriptions

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Appendix A: Monitoring Site Descriptions

Sites operated by the San Joaquin Valley Air Pollution Control District (SJVAPCD)

Bakersfield-Muni

The Bakersfield-Golden site was shut down for relocation in December 2009. The replacement site, Bakersfield-Muni, is located in the Bakersfield, CA metropolitan area and is operated by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The site serves as a PAMS Type 2 site, and its purpose is to measure maximum ozone precursor emissions. The site monitors ozone, CO, NO_2, total- and speciated-VOC, and meteorology for the PAMS program. The speciated PAMS equipment became operational in June 2012. All the other PAMS equipment except for the NMHC equipment began operating in July 2012. The NMHC equipment was installed and became operational in October 2012. The site monitored PM10 and PM2.5 from July 2012 until late February 2013. However, it soon became apparent that this site was not acceptable as a PM10 and PM2.5 site because site specific emissions from nearby sources were impacting the site, and the site was therefore not measuring ambient particulate concentrations.

Clovis-Villa

Clovis, CA is located in the central part of the San Joaquin Valley with mountains to the east and northeast. North-south air flow is virtually unobstructed. Pollutant emissions occur locally and are also transported from upwind and nearby locations into the area by the wind. The Clovis-Villa monitoring site is operated by SJVAPCD and is located in the northeastern portion of the Fresno, CA metropolitan area. It began operating in September 1990. This site is a PAMS Type 2 site, a site intended to measure maximum ozone precursor emissions. In addition to ozone, the site also monitors PM2.5, PM10, PM2.5, CO, NO_2, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants, which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events, because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Corcoran-Patterson

Corcoran, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutant emissions occur locally and are also transported from upwind locations into the area by the wind. The Corcoran-Patterson monitoring site is operated by SJVAPCD and is located 67

miles south of the Fresno, CA metropolitan area. It began operating in October 1996. In 2011, the site was shut down temporarily due to safety issues and repairs were made to the site. The site resumed operating in August 2012. The site measures representative concentrations of PM10 and PM2.5. This site also monitors meteorology. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase and sometimes exceed the NAAQS.

Fresno-Drummond

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Drummond monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in July 1984. The purpose of the site is to monitor representative concentrations of hourly ozone responses in an urban area. In addition to ozone, the site also monitors PM10, PM2.5, CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events, because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Fresno-Pacific

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Pacific monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in January 2000. The purpose of the site is to monitor representative PM2.5 concentrations in an urban area. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase when wind causes PM2.5 to become suspended in the air. Occasionally, wind

will carry dust across the city or lift local dust particles into the air, and cause PM2.5 concentrations to become elevated, but PM2.5 exceedances due to wind events are rare.

Fresno-Sky Park
Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Fresno-Sky Park monitoring site is operated by SJVAPCD and is located in the Fresno, CA metropolitan area. It began operating in July 1986. The purpose of the site is to monitor representative concentrations of hourly ozone responses in an urban area. In addition to ozone, the site also monitors CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Hanford-Irwin
Hanford, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally and are also transported from upwind locations into the area by the wind. The Hanford-Irwin monitoring site is operated by SJVAPCD and is located 51 miles south of the Fresno, CA metropolitan area. The site began operating in October 1993 and was decommissioned in October 2007 due to plans to move it to a different part of the Irwin location. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, PM10, and NO_2 responses from upwind and nearby urban areas. The site also monitors meteorology. The PM2.5, PM10, and ozone monitors were temporarily moved to Corcoran during site reconstruction. In February 2010, the ozone and PM2.5 monitors were returned to Hanford and the site became operational again. The PM10 monitor was returned and became operational in July 2010. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase and sometimes exceed the NAAQS.

Huron
Huron, CA is located in southwestern Fresno County, and is about 40 miles southwest of Fresno, CA, with the coastal mountain range just to the west. North-south air flow is

virtually unobstructed. This monitoring site was established in January 2007 in order to comply with Assembly Bill (AB) 841. Currently, this site monitors PM2.5 (Non-FEM,

Lebec
Lebec, CA is located in the southern-most portion of the San Joaquin Valley. The Lebec monitoring station was initiated by the Tejon Ranch in 2004, and the District assumed responsibility for this site as of January 2009. This site allows the District to better understand pollution impacts in the southern San Emigdio Mountains. The site measures PM2.5 and meteorological parameters. This site is used for general residential wood-burning declarations for the Greater Frazier Park Area.

Madera-City
Madera, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. The Madera-City monitoring site is located closer to the city center of Madera than the Madera-Pump Yard site. The Madera-City site is operated by the SJVAPCD and became operational in June 2010. The site monitors ozone, PM2.5, PM10, and meteorology. The purpose of this site is to measure downwind concentrations of the city of Madera which will provide needed information about the variability of air quality levels on the Valley floor of Madera County.

Madera-Pump Yard
Madera, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. The Madera-Pump Yard Street monitoring site is operated by SJVAPCD and is located in Madera, CA. It began operating in August 1997. This site was established as a PAMS Type 1 site, located in an area upwind of Fresno and not to be influenced by upwind or local ozone precursor emissions. In addition to ozone, this site also monitors CO, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Manteca
Manteca, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Manteca monitoring site is located in Manteca, CA and operated by SJVAPCD. It became operational in November 2010. The purpose of the site is to monitor transport of and representative concentrations of ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors meteorology. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric

chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Maricopa

Maricopa, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. The Maricopa monitoring site is operated by the SJVAPCD and is located 45 miles southwest of the Bakersfield, CA metropolitan area. It began operating in July 1987. The purpose of the site is to monitor representative concentrations of hourly ozone in a rural area. The site also monitors meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Merced-Coffee

Merced, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Merced-Coffee monitoring site is operated by SJVAPCD and is located in the Merced, CA. It began operating in October 1991. The purpose of the site is to monitor representative concentrations of hourly ozone responses from upwind urban areas. The site also monitors PM2.5, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Merced-M Street

Merced, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Merced-M Street monitoring site is operated by SJVAPCD and is located in Merced, CA. It began operating in April 1999. The purpose of the site is to monitor representative concentrations of PM2.5 and PM10 responses from upwind urban areas. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Parlier
Parlier, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants are both local and up wind in origin. The Parlier monitoring site is operated by SJVAPCD and is located 20 miles southeast of the Fresno, CA metropolitan area. It began operating in March 1983. The purpose of the site, as a PAMS Type 3 site, is to monitor maximum ozone concentrations and ozone responses from upwind urban areas. The site also monitors NO_2, total- and speciated-VOC, and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures.

Porterville
Porterville, CA is located in the southeastern part of the San Joaquin Valley near the foothills of the Sierra Nevada Mountains to the east. It is approximately 25 miles southeast of Visalia, CA, and so transport of pollutants from Visalia towards Porterville is possible. The Porterville air monitoring site became operational in March 2010 and is operated by the SJVAPCD. The purpose of this site is to monitor ozone, PM2.5, and meteorology, and represent air quality levels present near the foothills of the southeastern portion of the Valley.

Stockton-Wagner/Holt
Stockton, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Stockton-Wagner/Holt monitoring site is operated by SJVAPCD and is located in the Stockton, CA metropolitan area. It began operating in October 1996. The purpose of the site is to monitor representative concentrations of PM10 in an urban area. Occasionally, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Tracy-Airport
Tracy, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Tracy-Airport monitoring site is operated by SJVAPCD and is located in Tracy, CA. It began operating in January 2005. The purpose of the site is to monitor transport of ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight

hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Tranquillity

Tranquillity, CA is located in western Fresno County, and is about 25 miles west of Fresno, CA, with the coastal mountain range just to the west. North-south air flow is virtually unobstructed. This monitoring site was established in November 2009 and is operated by the SVAPCD. The purpose of this site is to monitor ozone, PM2.5, and meteorology. The site also represents background and rural pollutant concentrations on the west side of the San Joaquin Valley for research purposes.

Turlock

Turlock, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Turlock monitoring site is operated by SJVAPCD and is located in the Turlock, CA. It began operating in April 1992. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 from upwind urban areas. The site also monitors CO, NO_2, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 and PM10 concentrations can also increase during wind events because the wind can cause PM to become suspended in the air. Occasionally, wind will carry dust across the city and also cause PM concentrations to increase, but PM2.5 and PM10 exceedances due to wind events are rare.

Visalia-Airport

Visalia, CA is located where the central and southern parts of the San Joaquin Valley meet. The Sierra Nevada mountain range is approximately 20 miles east of Visalia. North-south air flow is virtually unobstructed. The Visalia-Airport monitoring site is operated by SJVAPCD and serves as a wind profiler monitoring surface wind speed and wind direction. It also monitors air temperature, and relative humidity at the surface. It began reporting official meteorological data in January 2001. Meteorological parameters have a direct influence on how and where pollutants are transported and how much pollutant concentrations increase or decrease.

Sites Operated by the California Air Resources Board (CARB)

Arvin-Di Giorgio

Arvin, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally and are also transported from upwind locations into the area by the wind.

The Arvin-Bear Mountain Boulevard ozone monitoring site was established by the Air Resources Board (ARB) in 1989 and has periodically been the Valley's ozone design site. Due to circumstances beyond ARB's control, ARB was unable to renew the lease at this location, and monitoring had to be discontinued at the end of the 2010 ozone season. The loss of this monitoring site has implications for determining the ozone attainment status of the region. The ARB is actively working with the United States Environmental Protection Agency on an appropriate solution to address this situation.

The Di Giorgio site is located 18 miles southeast of the Bakersfield, CA metropolitan area. The purpose of the site, as a PAMS Type 3 site, is to monitor maximum ozone concentrations and transport from upwind urban areas. The site also monitors NO_2, NMOC, NMHC, and meteorology and CARB plans to install methane/CO_2 and trace CO analyzers for special purpose monitoring. In addition, a NOy monitor will be added to the Arvin-Di Giorgio air monitoring site to comply with the latest regulation for PAMS Type 3 sites. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations decrease due to shorter daylight hours and lower temperatures. Pollutants occur locally and are also transported into the area by wind.

Bakersfield-Planz

Bakersfield, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Bakersfield-Planz monitoring site is operated by CARB and is located 6 miles north of the Bakersfield, CA metropolitan area. It began operating in September 2000. The purpose of the site is to monitor representative concentrations of PM2.5 from upwind and nearby urban areas. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air.

Bakersfield-California

Bakersfield, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Bakersfield-California monitoring site is operated by CARB and is located in the Bakersfield, CA metropolitan area. It began operating in March 1994. The purpose of the site is to monitor representative concentrations of hourly and daily ozone, PM10, and PM2.5 in an urban area. After the shutdown of the Bakersfield-Golden site, the District requested CARB's permission to temporarily operate a real time PM10 monitor at the Bakersfield-California site (06-029-0014). The temporary PM10 monitor was used for daily AQI forecasting purposes. This temporary monitor was later moved to the Bakersfield-Muni site, however the monitor is no longer operating at Bakersfield-Muni (see Appendix C for details). The Bakersfield-California site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air.

Edison

Edison, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Pollutants occur locally, and are transported from upwind locations into the area by the wind. The Edison monitoring site is operated by CARB and is located 9 miles east of the Bakersfield, CA metropolitan area. It began operating in January 1980. The purpose of the site is to monitor representative concentrations of hourly ozone from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations decrease due to shorter daylight hours and lower temperatures.

Fresno-Garland

Fresno, CA is located in the central part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, and are transported from upwind locations into the area by the wind. In December 2011, CARB moved the Fresno-First monitoring site to Garland Avenue which is two blocks north of the Fresno-First site. The new site is now referred to as Fresno-Garland and became operational on December 31, 2011. The Fresno-Garland monitoring site is a National Core (NCore) site operated by CARB and is located in the Fresno, CA metropolitan area. The purpose of the site is to monitor representative concentrations

of hourly ozone, PM2.5, and PM10 in an urban area. The site also monitors CO, NO_2, SO_2, NMOC, NMHC, toxics, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Modesto-14th Street

Modesto, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Modesto-14th Street monitoring site is operated by CARB and is located in the Modesto, CA metropolitan area. It began operating in January 1981. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 in local and upwind urban areas. The site also monitors CO and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. Occasionally, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Oildale

Oildale, CA is located at the southern end of the San Joaquin Valley with mountains to the east, west, and south. Because the mountains block or slow down air flow pollutants can get trapped and build up in the area. Most pollutants occur locally, however, a small amount are also transported from upwind locations into the area by the wind. The Oildale monitoring site is operated by CARB and is located 6 miles north of Bakersfield, CA within the metropolitan area. It began operating in January 1980. The purpose of the site is to monitor representative concentrations of hourly ozone concentrations, and PM10 every 6 days in an urban area. The site also monitors meteorology. During the summer months, high temperatures and longer daylight hours

contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Not only does the metropolitan area generate its own pollution, it is also the recipient of pollutants that get transported by wind. On rare occasions, this area of the San Joaquin Valley experiences wind events that can carry dust into the area or lift local dust particles into the air. Such events can cause PM10 concentrations to increase.

Shafter

Shafter, CA is located at the southern end of the San Joaquin Valley with mountains to the east and west, and 58 miles to the south. Because the mountains to the south are further away, southward air flow is less obstructed through Shafter so pollutant build-up is less pronounced compared to Bakersfield and the towns further south. Pollutants occur locally and wind can transport pollutants into and through Shafter from nearby and upwind areas. The Shafter monitoring site is a shared site operated by CARB and the SJVAPCD and is located 18 miles northwest of the Bakersfield, CA metropolitan area. It began operating in January 1989. This site was established as a PAMS Type 1 site, located in an area upwind of Bakersfield and not to be influenced by upwind or local ozone precursor emissions. In addition to ozone, the site also monitors NO_2, total- and speciated-VOC and meteorology for the PAMS program. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. Being located upwind of Bakersfield, the Shafter site tends to have lower ozone concentrations than does the metropolitan area to the south.

Stockton-Hazelton

Stockton, CA is located in the northern part of the San Joaquin Valley with mountains to the east and west. North-south air flow is virtually unobstructed. Pollutants occur locally, but the wind can transport pollutants into the area from upwind locations or through the Sacramento Delta from the Bay Area. The Stockton-Hazelton monitoring site is operated by CARB and is located in the Stockton, CA metropolitan area. It began operating in June 1976. The purpose of the site is to monitor representative concentrations of ozone, PM2.5, and PM10 in an urban area. The site also monitors CO, NO_2, toxics, and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Visalia-Church

Visalia, CA is located where the central and southern parts of the San Joaquin Valley meet. The Sierra Nevada mountain range is approximately 20 miles east of Visalia. North-south air flow is virtually unobstructed. Pollutants occur locally, and can be transported from upwind locations into the area by the wind. The Visalia-Church monitoring site is operated by CARB. It began operating in July 1979. The purpose of the site is to monitor representative concentrations of hourly ozone, PM2.5, and PM10 from upwind and nearby urban areas. The site also monitors NO_2 and meteorology. During the summer months, high temperatures and longer daylight hours contribute to increases in ozone during the day. In contrast, ozone concentrations decrease at night with the absence of sunlight and the presence of NOx pollutants which scavenge the ozone. During the winter months, ozone concentrations tend to be lower due to shorter daylight hours and lower temperatures. Elevated PM2.5 concentrations are possible year round, but concentrations tend to be highest during the winter months due to moisture content in the air, wood-burning activities, other anthropogenic activities, and atmospheric chemistry. PM2.5 concentrations can also increase during wind events because the wind can cause PM2.5 to become suspended in the air. On rare occasions, wind will carry dust across the city and cause PM10 concentrations to increase, but PM10 exceedances are rare.

Sequoia and Kings National Park and Forest Monitoring Sites

Sequoia-Ash Mountain

The Ash Mountain monitoring station is operated by Sequoia National Forest and is located at the southern entrance of Sequoia National Park at a 1,500-foot elevation. It originally began operating in 1985, though the site has been relocated several times over the years. The site demonstrates the hourly ozone concentrations in the foothills. The site also monitors PM2.5 and meteorology. On summer days, ozone and precursors can be transported to Ash Mountain from other locations. At this location, there are significantly lower hourly emissions of NOx as compared to urban areas such as Bakersfield, or Fresno, CA. The amount of available NOx at Ash Mountain to scavenge the ozone is much lower. Because the ozone scavenging at Ash Mountain is much less than the ozone scavenging in urban areas, Ash Mountain can experience elevated ozone concentrations for a 24-hour period during ozone episodes. Since the ozone concentration is already fairly high at dawn, only a relatively small amount of additional ozone can cause levels in the atmosphere to exceed federal standards.

Sequoia-Lower Kaweah

The Lower Kaweah monitoring station is operated by Sequoia National Forest and is located at the southern entrance of Sequoia National Park at a 6,200-foot elevation. It began operating in April 1987. The site demonstrates the hourly ozone concentrations in a rural area. The site also monitors meteorology. On summer days, ozone and precursors can be transported to Ash Mountain from other locations. At this location, there are significantly lower hourly emissions of NOx as compared to urban areas such as Bakersfield, or Fresno, CA. The amount of available NOx at Lower Kaweah to scavenge the ozone is much lower. Because the ozone scavenging at Lower Kaweah

is much less than the ozone scavenging in urban areas, Lower Kaweah can experience elevated ozone concentrations for a 24-hour period during ozone episodes. Since the ozone concentration is already fairly high at dawn, only a relatively small amount of additional ozone can cause levels in the atmosphere to exceed federal standards.

APPENDIX B:

Detailed Air Monitoring Site Information

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Appendix B: Detailed Air Monitoring Site Information

Sites organized by County, alphabetical therein:

County	MSA	Site Name	Page Number
Fresno	Fresno	Clovis–Villa	B-2
		Fresno–Drummond	B-7
		Fresno–Garland	B-11
		Fresno–Pacific	B-17
		Fresno–Sky Park	B-19
		Huron	B-22
		Parlier	B-24
		Tranquillity	B-28
Kern	Bakersfield	Arvin–Di Giorgio	B-30
		Bakersfield–Planz	B-32
		Bakersfield–California	B-34
		Bakersfield-Muni	B-38
		Edison	B-43
		Lebec	B-45
		Maricopa	B-47
		Oildale	B-49
		Shafter	B-51
Kings	Hanford – Corcoran	Corcoran–Patterson	B-54
		Hanford–Irwin	B-57
Madera	Madera	Madera--City	B-61
		Madera--Pump Yard	B-64
Merced	Merced	Merced–Coffee Road	B-67
		Merced M Street	B-70
San Joaquin	Stockton	Manteca	B-72
		Stockton–Hazelton	B-75
		Stockton–Wagner/Holt	B-79
		Tracy–Airport	B-81
Stanislaus	Modesto	Modesto–14th Street	B-85
		Turlock	B-89
Tulare	Visalia – Porterville	Porterville	B-93
		Sequoia–Ash Mountain	B-96
		Sequoia–Lower Kaweah	B-98
		Visalia–Airport	B-100
		Visalia–Church	B-102

Site name	**Clovis–Villa**			
AIRS #	060195001			
County	Fresno			
Collecting (Operating) Agency	All equipment operated by SJVAPCD			
Reporting Agency	Data reported by SJVAPCD: PM2.5 FEM, CO, NO_2, NMHC, Speciated VOC, Meteorology	Data reported by CARB: PM10 FRM	Data reported by CARB: PM10 FRM	
Site Start Date	9/1/90			
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 FEM, PM2.5 FRM, CO, NO_2, NMHC, Speciated VOC			
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation			
Address	908 N. Villa Ave., Clovis CA 93612			
Latitude	N 36.81944			
Longitude	W -119.716			
Elevation (m)	86			
Location	Portable building in lot			
Distance to road	500 m + (east)			
Traffic Count	4876			
Ground Cover	Paved			

Clovis–Villa (1 of 3)				
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FEM**	**PM2.5 FRM**
Parameter Code	44201	81102	88101	88101
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population	High concentration
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research support	Timely/public	Standards/strategy, research support
Monitor type	SLAMS	SLAMS	SLAMS (Secondary)	SLAMS (Primary)
POC (or primary monitor for PM2.5 and PM10)	1	1	3	1
Method code	087	063	170	145
Sampling method (List Instrument)	Teledyne 400 E	Sierra Andersen SSI	Met One BAM 1020	Thermo Partisol 2025i
Analysis method	UV	Gravimetric	Beta attenuation	Gravimetric
Start date	1/1/1990	1/1/1990	11/25/2008	9/2012
Operation schedule (e.g. 1:1, 1:3)	1:1	1:6	1:1	1:3
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	7.5 m	7.0 m	7.0 m	5.3 m
Distance from supporting structure (meters)	4.5 m	0.25 m	4.0 m	
Distance from obstructions on roof	____	_____	_____	
Distance from obstructions not on roof (meters)	32.0 m	31.5 m	31.0 m	
Distance from trees (meters)	24.5 m	27.5 m	25.0 m	
Distance to furnace or incinerator flue (meters)	16.0 m	15.5 m	17.0 m	
Distance between collocated monitors (meters)	_____	3.7 m	2.5 m	
Unrestricted airflow (degrees)	355	355	355	360
Probe material (Teflon, etc.)	TEFLON	_____	ALUMINUM	
Residence time (seconds)	9.3	_____	_____	
Frequency of flow rate verification for manual PM samplers audit	_____	Quarterly	_____	
Frequency of flow rate verification for automated PM analyzers audit	_____	_____	Bi-weekly	MONTHLY

Clovis–Villa (1 of 3) continued

Pollutant	Ozone	PM10 FRM	PM2.5 FEM	PM2.5 FRM
Frequency of one-point QC check (gaseous)	1:1	_____	_____	
Last Annual Performance Evaluation (gaseous)	10/20/2009, 11/2/2010, 4/11/2012	_____	_____	
Last two semi-annual flow rate audits for PM monitors	_____	5/27/2010, 11/2/2010, 4/11/2012	5/27/2010, 11/2/2010, 4/11/2012	
Changes planned within the next 18 months (Y/N))	N	N	N	N

Clovis–Villa (2 of 3)

Pollutant	CO	NO_2	Speciated VOC (PAMS)	NMHC (PAMS)
Parameter code	42101	42602	Many	43102
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	High concentration	Population	Population
Monitor objective	Standards/strategy	Standards/strategy, research	Research	Research
Monitor type	SLAMS	PAMS	PAMS	PAMS
POC	1	1	1	1
Sampling method (List Instrument)	Themo 48i	Thermo 42i	Xontech 910A Xontech 925	Synpec Alpha 115
Method code	054	074	164	177
Analysis method	IR	CL	GC	GC
Start date	1/1/1990	1/1/1990	1/1/1990	1/1/1990
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	JUN-JUL-AUG	ALL YEAR
Probe height (meters)	7.5 m	7.5 m	6.5 m	7.5 m
Distance from supporting structure (meters)	4.5 m	4.5 m	0.25 m	4.5 m
Distance from obstructions on roof	____	____	____	____
Distance from obstructions not on roof (meters)	32.0 m	32.0 m	33.5 m	32.0 m
Distance from trees (meters)	24.5 m	24.5 m	28.0 m	24.5 m

Clovis–Villa (2 of 3) continued				
Pollutant	**CO**	**NO_2**	**Speciated VOC (PAMS)**	**NMHC (PAMS)**
Distance to furnace or incinerator flue (meters)	16.0 m	16.0 m	13.5 m	16.0 m
Distance between collocated monitors (meters)	_____	_____	____	____
Unrestricted airflow (degrees)	355	355	350	355
Probe material (Teflon, etc.)	TEFLON	TEFLON	S. STEEL	TEFLON
Residence time (seconds)	8.8	9.5	_____	_____
Frequency of flow rate verification for manual PM samplers audit	_____	_____	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____	_____	_____
Frequency of one-point QC check (gaseous)	1:1	1:1	_____	1:1
Last Annual Performance Evaluation (gaseous)	4/11/2012	4/11/2012	5/10/2010	_____
Last two semi-annual flow rate audits for PM monitors	_____	_____	_____	_____
Changes planned within the next 18 months (Y/N))	N	N	N	N

Clovis–Villa (3 of 3)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	PAMS
POC	1
Method code	Many
Sampling method (List Instrument)	ITP- HY-CAL BA 512-A-A-3-B, OT- Met-One 060A-2, BP- Met-One 092, RH- VAISALA HMP45D, SRD- EPPLY Mod.8-48, WD- Met-One 020C, WS- Met One 010C, BP- Met One 092
Analysis method	_____
Start date	1/1/1990

Clovis–Villa (3 of 3) continued	
Pollutant	**Met Parameters**
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	9.6 m
Distance from supporting structure (meters)	2.7 m
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	29.5 m
Distance from trees (meters)	25.5 m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N))	N

Site name	Fresno–Drummond	
AIRS #	060190007	
County	Fresno	
Collecting (Operating) Agency	All equipment operated by SJVAPCD	
Reporting Agency	Data reported by SJVAPCD: Ozone, CO, NO_2, PM2.5	Data reported by CARB: PM10 FRM
Site Start Date	7/1/84	
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 SPM, CO, NO_2	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure	
Address	4706 E. Drummond Street, Fresno CA 93725	
Latitude	N 36.70556	
Longitude	W -119.741	
Elevation (m)	89	
Location	Portable building in parking lot	
Distance to road	42.5 m (north), 121 m (east)	
Traffic Count	600	
Ground Cover	Paved	

Fresno–Drummond (1 of 2)						
Pollutant	**Ozone**	**PM10 FRM**		**PM2.5 FEM**	**CO**	**NO_2**
Parameter code	44201	81102		88101	42101	42602
Spatial scale	Neighborhood	Neighborhood		Neighborhood	Neighborhood	Neighborhood
Site type	Population, regional transport	Population		High Concentration	Population	High concentration
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research support		Timely/public, research support	Standards/strategy	Standards/strategy
Monitor type	SLAMS	SLAMS	Other	SPM	SLAMS	SLAMS
POC	1	1 (Primary)	3 (Collocated)	3	1	1
Method code	087	063		170	054	074
Sampling method (List Instrument)	Teledyne 400 E	Sierra Andersen SSI		Met One BAM 1020	Themo 48	Thermo 42Ci
Analysis method	UV	Gravimetric		Beta attenuation	IR	CL
Start date	7/1/1984	7/1989	Collocated Scheduled to start 10/2012	10/1/2012	7/1/1984	7/1/1984
Operation schedule (e.g. 1:1, 1:3)	1:1	1:6		1:1	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR		ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	8.5 m	6 m		6 m	8.5 m	8.5 m
Distance from supporting structure (meters)	_____	10.5 m			_____	_____
Distance from obstructions on roof	_____	0.5 m			_____	_____
Distance from obstructions not on roof (meters)	_____	5 m			_____	_____
Distance from trees (meters)	25 m	24 m			25 m	25 m

Fresno–Drummond (1 of 2) continued					
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5**	**CO**	**NO_2**
Distance to furnace or incinerator flue (meters)	23.5 m	23 m		23.5 m	23.5 m
Distance between collocated monitors (meters)	_____	_____		_____	_____
Unrestricted airflow (degrees)	360	260	355	360	360
Probe material (Teflon, etc.)	TEFLON	_____	ALLUMINUM	TEFLON	TEFLON
Residence time (seconds)	13.4	_____		12.9	14.6
Frequency of flow rate verification for manual PM samplers audit	_____	Quarterly	Bi-weekly	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____		_____	_____
Frequency of one-point QC check (gaseous)	1:1	_____		1:1	1:1
Last Annual Performance Evaluation (gaseous)	3/6/2013	_____		3/6/2013	3/6/2013
Last two semi-annual flow rate audits for PM monitors	_____	2/28/2012, 3/6/2013	2/28/2012, 3/6/2013	_____	_____
Changes planned within the next 18 months (Y/N)	N	N	N	N	N

Fresno–Drummond (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	SLAMS
POC	1
Method code	Many
Sampling method (List Instrument)	ITP- HY-CAL BAAA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS- Met One 010C
Analysis method	_____
Start date	10/7/2004
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	10 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	25 m
Distance to furnace or incinerator flue (meters)	23 m
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Fresno–Garland	
AIRS #	060190011	
County	Fresno	
Collecting (Operating) Agency	All equipment operated by CARB	
Reporting Agency	Data reported by CARB: PM10 FRM, PM10 FEM, PM2.5 FRM, PM2.5 Non-FEM, CO, NO_2, Toxics	Data reported by NPS: SO_2
Site Start Date	12/31/2011	
Pollutant Parameters	Ozone, PM10 FEM, PM2.5 FRM, PM2.5 Non-FEM, CO, NO_2, SO_2, Toxics	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure	
Address	3727 N. First St., Ste.104, Fresno CA 93726	
Latitude	N 36.78538	
Longitude	W -119.77321	
Elevation (m)	97	
Location		
Distance to road		
Traffic Count		
Ground Cover	Roof	

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Fresno–Garland (1 of 3)				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 FRM**	**PM2.5 FRM**
Parameter code	44201	TBD (85101 or 81102)	88101	88101
Spatial scale	Neighborhood	Urban	Neighborhood	Neighborhood
Site type	Population	NCORE	High concentration	High concentration
Monitor objective	Max Precursor Emissions Impact	Population Exposure	Population Exposure	
Monitor type	SLAMS	SLAMS	SLAMS	
POC	1	1	1 (Primary)	2 (Collocated)
Method code	087	TBD	118	118
Sampling method (List Instrument)	API/Teledyne 400	Met One BAM 1020	R&P 2025	R&P 2025
Analysis method	UV	Beta Attenuation	Sequential	Sequential
Start date		8/16/2012		
Operation schedule (e.g. 1:1, 1:3)	1:1	1-Hour	Daily	1:6
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)		5.9 m		
Distance from supporting structure (meters)				
Distance from obstructions on roof				
Distance from obstructions not on roof (meters)	None		None	None
Distance from trees (meters)	None		None	None
Distance to furnace or incinerator flue (meters)	None		None	None
Distance between collocated monitors (meters)	--		--	
Unrestricted airflow (degrees)	360		360	360
Probe material (Teflon, etc.)	Teflon		Teflon	Teflon
Residence time (seconds)	4.2	--	--	
Frequency of flow rate verification for manual PM samplers audit	--	--	Once a Month	Once a Month

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Fresno–Garland (1 of 3) continued				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 FRM**	**PM2.5 FRM**
Frequency of flow rate verification for automated PM analyzers audit	--		--	
Frequency of one-point QC check (gaseous)	Twice a month	--	--	
Last Annual Performance Evaluation (gaseous)	09/22/2010	--	--	
Last two semi-annual flow rate audits for PM monitors	--		06/08/2010	
Changes planned within the next 18 months (Y/N))	Y	N	Y	Y

Fresno–Garland (2 of 3)						
Pollutant	**PM2.5 FEM**	**PM2.5 Non-FEM**	**PM2.5**		**CO**	**NO_2**
Parameter code	88101	88501	88502		42101	42602
Spatial scale	Neighborhood	Neighborhood	Neighborhood		Neighborhood	Neighborhood
Site type	High concentration	High concentration	High concentration		Population	Population
Monitor objective		Population Exposure	Population Exposure		Max Precursor Emissions Impact	Max Precursor Emissions Impact
Monitor type	SLAMS	SPM (Non-regulatory)	Trend	Improve	SPM	SLAMS
POC	3	3	5	1	3	1
Method code	170	731	810	707	731	074
Sampling method (List Instrument)	MetOne 1020	MetOne 1020	R&P 2025		Dasibi 3008	API 200E
Analysis method		Beta Attenuation	Gravimetric			
Start date						
Operation schedule (e.g. 1:3, 1-Hour, etc.)	1-Hour	1-Hour	Daily		1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR		ALL YEAR	ALL YEAR

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Fresno–Garland (2 of 3) continued					
Pollutant	**PM2.5 FEM**	**PM2.5 Non-FEM**	**PM2.5**	**CO**	**NO_2**
Probe height (meters)					
Distance from supporting structure (meters)					
Distance from obstructions on roof					
Distance from obstructions not on roof (meters)	None	None	None	None	None
Distance from trees (meters)	None	None	None	None	None
Distance to furnace or incinerator flue (meters)	None	None	None	None	None
Distance between collocated monitors (meters)		1.5	--	--	--
Unrestricted airflow (degrees)		360	360	360	360
Probe material (Teflon, etc.)		Teflon	Teflon	Teflon	Teflon
Residence time (seconds)	2.5	--	--		2.6
Frequency of flow rate verification for manual PM samplers audit		--	Once a Month	--	--
Frequency of flow rate verification for automated PM analyzers audit		Twice a month	--	--	--
Frequency of one-point QC check (gaseous)		--	--	Twice a month	Twice a month
Last Annual Performance Evaluation (gaseous)	4/11/2012	--	--	4/11/2012	4/11/2012
Last two semi-annual flow rate audits for PM monitors		4/11/2012	4/11/2012	--	--
Changes planned within the next 18 months (Y/N)	Y	Y	Y	Y	Y

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Fresno–Garland (3 of 3)			
Pollutant	**SO_2**	**Toxics**	**Met Parameters**
Parameter code	42401	Many	Many
Spatial scale	Neighborhood	Neighborhood	Regional
Site type	Population	Population	General
Monitor objective	Other	Unknown	Research, timely/public
Monitor type	SLAMS	Many	Many
POC	1	Many	Many
Method code	009	Many	Many
Sampling method (List Instrument)	-	Xontech 924	
Analysis method	Thermo 43	--	
Start date			
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)			
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)		None	None
Distance from trees (meters)	None	None	None
Distance to furnace or incinerator flue (meters)	None	None	None
Distance between collocated monitors (meters)	None	--	--
Unrestricted airflow (degrees)	--	360	360
Probe material (Teflon, etc.)	360	Teflon	Teflon
Residence time (seconds)	Teflon		
Frequency of flow rate verification for manual PM samplers audit	5.9	--	--
Frequency of flow rate verification for automated PM analyzers audit	--	--	--
Frequency of one-point QC check (gaseous)	--	Twice a month	--

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Fresno–Garland (3 of 3) continued			
Pollutant	**SO_2**	**Toxics**	**Met Parameters**
Last Annual Performance Evaluation (gaseous)	Twice a month	09/23/2010	--
Last two semi-annual flow rate audits for PM monitors	4/11/2012	--	--
Changes planned within the next 18 months (Y/N)	N	N	N

In December 2011, CARB moved the Fresno-First air monitoring station to Garland Avenue which is two blocks north of the Fresno-First site.

Site name	Fresno–Pacific
AIRS #	060195025
County	Fresno
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by Ventura County APCD
Site Start Date	1/1/00
Pollutant Parameters	PM2.5 FRM
Meteorological Parameters	None
Address	1716 Winery, Fresno CA 93726
Latitude	N 36.72639
Longitude	W -119.733
Elevation (m)	100
Location	On school roof
Distance to road	62.0 m (north), 52.0 m (east)
Traffic Count	2539
Ground Cover	Roof material

Fresno–Pacific	
Pollutant	**PM2.5 FRM**
Parameter code	88101
Spatial scale	Neighborhood
Site type	Population
Monitor objective	Standards/strategy, research support
Monitor type	SLAMS
POC	1
Method code	120
Sampling method (List Instrument)	Thermo Partisol 2025
Analysis method	GRAVI-METRIC
Start date	1/1/2000
Operation schedule (e.g. 1:1, 1:3)	1:3
Sampling season	ALL YEAR
Probe height (meters)	8.0 m
Distance from supporting structure (meters)	6.0 m
Distance from obstructions on roof	54.5 m
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	76.0 m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	MONTHLY
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	3/1/2012, 3/6/2013
Changes planned within the next 18 months (Y/N)	N

Site name	Fresno–Sky Park
AIRS #	060190242
County	Fresno
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	7/1/86
Pollutant Parameters	Ozone, CO, NO_2
Meteorological Parameters	Wind speed, wind direction, outdoor temperature
Address	4508 Chennault Ave, Fresno CA 93722
Latitude	N 36.84056
Longitude	W -119.874
Elevation (m)	65
Location	Portable building
Distance to road	11.5 m (west)
Traffic Count	100
Ground Cover	Gravel

Fresno–Sky Park				
Pollutant	**Ozone**	**CO**	**NO_2**	**Met Parameters**
Parameter code	44201	42101	42602	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Regional
Site type	Population, regional transport	Population	Population	General
Monitor objective	Timely/public, standards/strategy, research support	Standards/ strategy	Standards/ strategy	Research, timely/public
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
POC	1	1	1	1
Method code	087	054	074	Many
Sampling method (List Instrument)	Teledyne 400E	Thermo 48	Thermo 42I	ITP- BA-512-A-A-3-B, OT- Met One 060A-2, WD- Met One 020C, WS- Met One 010C
Analysis method	UV	IR	CL	____
Start date	7/1/1986	7/1/1986	7/1/1986	7/1/1986
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	4 m	4 m	4 m	5 m
Distance from supporting structure (meters)	____	____	____	____
Distance from obstructions on roof	____	____	____	____
Distance from obstructions not on roof (meters)	5 m / 16 m	5 m / 16 m	5 m / 16 m	5 m / 16 m
Distance from trees (meters)	27 m / 20 m	27 m / 20 m	27 m / 20 m	27 m / 20 m
Distance to furnace or incinerator flue (meters)	____	____	____	____
Distance between collocated monitors (meters)	____	____	____	____
Unrestricted airflow (degrees)	280	280	280	280
Probe material (Teflon, etc.)	TEFLON	TEFLON	TEFLON	____
Residence time (seconds)	10.9	10.9	12.6	____
Frequency of flow rate verification for manual PM samplers audit	____	____	____	____
Frequency of flow rate verification for automated PM analyzers audit	____	____	____	____
Frequency of one-point QC check (gaseous)	1:1	1:1	1:1	____

Fresno–Sky Park (continued)				
Pollutant	**Ozone**	**CO**	**NO_2**	**Met Parameters**
Last Annual Performance Evaluation (gaseous)	3/7/2013	3/7/2013	3/7/2013	3/7/2013
Last two semi-annual flow rate audits for PM monitors	____	____	____	____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Site name	Huron
AIRS #	060192008
County	Fresno
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	10/12/09
Pollutant Parameters	PM2.5 Non-FEM
Meteorological Parameters	Barometric pressure
Address	16875 4th St., Huron, CA 93234
Latitude	N 36.2363
Longitude	W -119.765689
Elevation (m)	112
Location	In school room
Distance to road	202 m (west), 99.5 m (north)
Traffic Count	1205
Ground Cover	Paved/vegetated

Huron		
Pollutant	**PM2.5 Non-FEM**	**Met Parameters**
Parameter code	88502	64101
Spatial scale	Neighborhood	Neighborhood
Site type	Population	Population
Monitor objective	Timely/public	Timely/public
Monitor type	SPM	-
POC	3	1
Method code	731	
Sampling method (List Instrument)	Met One BAM 1020	ITP- Hy-Cal BA-512-A-A-3-B, BP- Met One 092
Analysis method	BETA-ATTENUATION	
Start date	Q3-2009	2/1/2010
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)	4.5 m	
Distance from supporting structure (meters)	1.5 m	
Distance from obstructions on roof	_____	
Distance from obstructions not on roof (meters)	_____	
Distance from trees (meters)	41.5 m	
Distance to furnace or incinerator flue (meters)	_____	
Distance between collocated monitors (meters)	_____	
Unrestricted airflow (degrees)	270	
Probe material (Teflon, etc.)	ALUMINUM	
Residence time (seconds)	N/A	
Frequency of flow rate verification for manual PM samplers audit	_____	
Frequency of flow rate verification for automated PM analyzers audit	BI-WEEKLY	
Frequency of one-point QC check (gaseous)	_____	
Last Annual Performance Evaluation (gaseous)	--	
Last two semi-annual flow rate audits for PM monitors	11/28/2011, 5/8/2012	
Changes planned within the next 18 months (Y/N)	N	N

Site name	Parlier
AIRS #	060194001
County	Fresno
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	1/1/06
Pollutant Parameters	Ozone, NO_2, Speciated VOC, NMHC
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation
Address	9240 S. Riverbend Ave., Parlier CA 93648
Latitude	N 36.59722
Longitude	W -119.504
Elevation (m)	78
Location	Portable building in university field
Distance to road	500 m+ (north)
Traffic Count	8700
Ground Cover	Dirt/vegetated

Parlier (1 of 2)				
Pollutant	**Ozone**	**NO_2**	**Total Speciated VOC**	**NMHC**
Parameter code	44201	42602	43102	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	High concentration, regional transport	Population	Population	Population
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research	Research	Research
Monitor type	PAMS	PAMS	PAMS	PAMS
POC	1	1	1	1
Method code	087	074	164	177
Sampling method (List Instrument)	Teledyne 400 E	Teledyne 200E	Xontech 910A	Baseline 8900
Analysis method	UV	CL	GC	GC
Start date	3/1/1983	3/1/1983	3/1/1983	3/1/83
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	JUN-JUL-AUG	ALL YEAR
Probe height (meters)	9.0 m	9.0 m	7.0 m	9.0 m
Distance from supporting structure (meters)	_____	_____	_____	_____
Distance from obstructions on roof	_____	_____	_____	_____
Distance from obstructions not on roof (meters)	_____	_____	_____	_____
Distance from trees (meters)	_____	_____	12.5 m	_____
Distance to furnace or incinerator flue (meters)	_____	_____	_____	_____
Distance between collocated monitors (meters)	_____	_____	_____	_____
Unrestricted airflow (degrees)	360	360	270	360
Probe material (Teflon, etc.)	TEFLON	TEFLON	S. STEEL	TEFLON
Residence time (seconds)	10.3	11.0	_____	12.9
Frequency of flow rate verification for manual PM samplers audit	_____	_____	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____	_____	_____
Frequency of one-point QC check (gaseous)	1:1	1:1	_____	1:1
Last Annual Performance Evaluation (gaseous)	1/23/2012	1/23/2012	5/10/2010	_____

Parlier (1 of 2) continued				
Pollutant	**Ozone**	**NO_2**	**Speciated VOC**	**NMHC**
Last 2 semi-annual flow rate audits, PM monitors	_____	_____	_____	_____
Changes planned within the next 18 months (Y/N)	N	N	N	Y

Parlier (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	PAMS
POC	1
Method code	Many
Sampling method (List Instrument)	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, RH- Vaisala HMP45D, SRD- Epply Mod.8-48, WD- Met One 020C, WS- Met One 010C
Analysis method	_____
Start date	3/1/83
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	9.5 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	_____
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____

Parlier (2 of 2) continued

Pollutant	Met Parameters
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Tranquillity
AIRS #	060192009
County	Fresno
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	11/9/2009
Pollutant Parameters	Ozone, PM2.5 FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	32650 W. Adams, Tranquillity CA 93668
Latitude	N 36.600833
Longitude	-120.382222
Elevation (m)	59
Location	Portable shed
Distance to road	186 m (south)
Traffic Count	
Ground Cover	Gravel/vegetation

Tranquillity			
Pollutant	**Ozone**	**PM2.5 FEM**	**Met Parameters**
Parameter code	44201		Many
Spatial scale	Urban	Urban	Urban
Site type	Population	Population	Population
Monitor objective	Timely/public	Timely/public	Timely/public
Monitor type	SPM	SPM	
POC	1	3	1
Method code	087	170	Many
Sampling method (List Instrument)	Teledyne 400 E(IZS)	Met One BAM 1020	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS- Met One 010C
Analysis method	UV	BETA-ATTENUATION	
Start date	10/30/2009	10/30/2009	10/30/2009
Operation schedule (e.g. 1:1, 1:3)	1:1	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	4 m	4 m	10 m
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)			
Distance from trees (meters)	102 m	102 m	102 m
Distance to furnace or incinerator flue (meters)	97.5 m	97.5 m	97.5 m
Distance between collocated monitors (meters)			
Unrestricted airflow (degrees)	360	360	360
Probe material (Teflon, etc.)	TEFLON	ALUMINUM	
Residence time (seconds)	6.7	N/A	
Frequency of flow rate verification for manual PM samplers audit			
Frequency of flow rate verification for automated PM analyzers audit		BI-WEEKLY	
Frequency of one-point QC check (gaseous)	1:1		
Last Annual Performance Evaluation (gaseous)	5/8/2012		
Last 2 semi-annual flow rate audits, PM monitors		11/30/2011, 5/8/2012	
Changes planned within the next 18 months (Y/N)	N		

Site name	Arvin–Di Giorgio
AIRS #	060295002
County	Kern
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	11/16/2009
Pollutant Parameters	Ozone
Meteorological Parameters	Outdoor temperature
Address	19405 Buena Vista Blvd, Arvin CA 93203
Latitude	N 35° 14' 21"
Longitude	W -118° 47' 18.6"
Elevation (m)	107
Location	
Distance to road	10 m
Traffic Count	500
Ground Cover	Dirt

Arvin–Di Giorgio	
Pollutant	**Ozone**
Parameter code	44201
Spatial scale	Neighborhood
Site type	
Monitor objective	Population Exposure
Monitor type	Maximum concentration
POC	1
Method code	087
Sampling method (List Instrument)	
Analysis method	UV
Start date	11/16/2009
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	
Distance from supporting structure (meters)	____
Distance from obstructions on roof	____
Distance from obstructions not on roof (meters)	____
Distance from trees (meters)	
Distance to furnace or incinerator flue (meters)	____
Distance between collocated monitors (meters)	____
Unrestricted airflow (degrees)	350
Probe material (Teflon, etc.)	TEFLON
Residence time (seconds)	8.0
Frequency of flow rate verification for manual PM samplers audit	____
Frequency of flow rate verification for automated PM analyzers audit	____
Frequency of one-point QC check (gaseous)	1:1
Last Annual Performance Evaluation (gaseous)	10/16/2012
Last two semi-annual flow rate audits for PM monitors	____
Changes planned within the next 18 months (Y/N)	Y

Site name	Bakersfield–Planz
AIRS #	060290016
County	Kern
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by Ventura County APCD
Site Start Date	9/19/00
Pollutant Parameters	PM2.5 FRM
Meteorological Parameters	None
Address	401 E. Planz Rd., Bakersfield CA 93307
Latitude	N 36° 19' 52"
Longitude	W 118° 59' 59"
Elevation (m)	145
Location	
Distance to road	500 m
Traffic Count	1000
Ground Cover	Asphalt

Bakersfield–Planz	
Pollutant	**PM2.5 FRM**
Parameter code	88101
Spatial scale	Neighborhood
Site type	Population
Monitor objective	Population Exposure
Monitor type	SLAMS
POC	1
Method code	120
Sampling method (List Instrument)	R&P 2025
Analysis method	Gravimetric
Start date	
Operation schedule (e.g. 1:1, 1:3)	1:3
Sampling season	ALL YEAR
Probe height (meters)	
Distance from supporting structure (meters)	
Distance from obstructions on roof	
Distance from obstructions not on roof (meters)	None
Distance from trees (meters)	None
Distance to furnace or incinerator flue (meters)	None
Distance between collocated monitors (meters)	None
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	Teflon
Residence time (seconds)	NA
Frequency of flow rate verification for manual PM samplers audit	Once a month
Frequency of flow rate verification for automated PM analyzers audit	--
Frequency of one-point QC check (gaseous)	--
Last Annual Performance Evaluation (gaseous)	--
Last two semi-annual flow rate audits for PM monitors	10/26/2011, 4/18/2012
Changes planned within the next 18 months (Y/N)	Y

Site name	Bakersfield–California	
AIRS #	060290014	
County	Kern	
Collecting (Operating) Agency	Equipment operated by CARB: PM10 FRM, PM2.5 FRM, PM2.5 Non-FEM, NO_2, Toxics, Meteorology	Equipment operated by SJVAPCD: Temporary PM10 FEM, Moved to Bak-Muni
Reporting Agency	Data reported by CARB: PM10 FRM, PM2.5 FRM, NO_2, Toxics, Meteorology	
Site Start Date	3/1/94	
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 Non-FEM, NO_2, Toxics	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure	
Address	5558 California Ave., Bakersfield CA 93309	
Latitude	N 35° 21' 24"	
Longitude	N 119° 3' 46"	
Elevation (m)	117	
Location		
Distance to road	300 m	
Traffic Count	10000	
Ground Cover	Roof	

Bakersfield–California (1 of 2)					
Pollutant	**Ozone**	**PM10 FRM**	**PM10 FRM**	**PM2.5 FRM**	**PM2.5 FRM**
Parameter code	44201	81102	81102	88101	88101
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population		Population	Population
Monitor objective	Unknown	Unknown	Unknown	Population Exposure	Other
Monitor type	SLAMS	SLAMS	Other (Collocated)	SLAMS (Primary)	SLAMS (Collocated)
POC	1	1	2	1	2
Method code	087	063	063	118	118
Sampling method (List Instrument)	API/Teledyne 400	SA/GMW 1200	SA/GMW 1200	R&P 2025	R&P 2025
Analysis method	UV	Gravimetric	Gravimetric	Sequential	Sequential
Start date		4/1/1994	1/3/2003	1/1/1999	1/1/1999
Operation schedule (e.g. 1:6, Daily, etc.)	1:1	1:6	1:6	Daily	1:6
Sampling season					
Probe height (meters)				7.3	
Distance from supporting structure (meters)					
Distance from obstructions on roof					
Distance from obstructions not on roof (meters)	None	None		None	None
Distance from trees (meters)	None	None		None	None
Distance to furnace or incinerator flue (meters)	None	None		None	None
Distance between collocated monitors (meters)	--	3.0		3.0	3.0
Unrestricted airflow (degrees)	360	360		360	360
Probe material (Teflon, etc.)	Teflon	Teflon		Teflon	Teflon
Residence time (seconds)	10.0	--		--	--
Frequency of flow rate verification for manual PM samplers audit	--	Once per month		Once per month	Once per month

Bakersfield–California (1 of 2) continued					
Pollutant	**Ozone**	**PM10 FRM**	**PM10 FRM**	**PM2.5 FRM**	**PM2.5 FRM**
Frequency of flow rate verification for automated PM analyzers audit	--	--		--	--
Frequency of one-point QC check (gaseous)	Twice per month	--		--	--
Last Annual Performance Evaluation (gaseous)	4/17/2012	--		--	--
Last two semi-annual flow rate audits for PM monitors	--	10/25/2011, 4/17/2012	10/25/2011, 4/17/2012	10/25/2011, 4/17/2012	10/25/2011, 4/17/2012
Changes planned within the next 18 months (Y/N)	N	N		N	N

Bakersfield–California (2 of 2)					
Pollutant	**PM2.5 Non-FEM**	**PM2.5 Non-FEM**	**NO_2**	**Toxics**	**Met Parameters**
Parameter code	88501	88501	42602	Many	Many
Spatial scale	Neighborhood		Neighborhood	Neighborhood	Regional
Site type	Population		Population	Population	General
Monitor objective	Other	Other	Unknown	Unknown	Research, Timely/public
Monitor type	SPM Non-Regulatory (Primary)	SPM Non-Regulatory (Collocated)	SLAMS	Many	Many
POC	3	4	1	Many	Many
Method code	731	731	074	Many	Many
Sampling method (List Instrument)	Met One BAM 1020	Met One BAM 1020	API 200A	Xontech 924	
Analysis method	PM2.5 SCC Beta	PM2.5 SCC Beta	CL		
Start date	12/1/2001	12/1/2001			
Operation schedule (e.g. 1:1, 1-Hour)	1-Hour	1-Hour	1:1	1:1	1:1
Sampling season					
Probe height (meters)	2.0	2.0			
Distance from supporting structure (meters)					

Bakersfield–California (2 of 2) continued					
Pollutant	**PM2.5 Non-FEM**	**PM2.5 Non-FEM**	**NO_2**	**Toxics**	**Met Parameters**
Distance from obstructions not on roof (meters)	None	None	None	None	None
Distance from trees (meters)	None	None	None	None	None
Distance to furnace or incinerator flue (meters)	None	None	None	None	None
Distance between collocated monitors (meters)	3.0		--		--
Unrestricted airflow (degrees)	360	360	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon	Teflon	Teflon
Residence time (seconds)	--	--	14.7	--	--
Frequency of flow rate verification for manual PM samplers audit	--	--	--	--	--
Frequency of flow rate verification for automated PM analyzers audit	Twice per month	Twice per month	--	--	--
Frequency of one-point QC check (gaseous)	--	--	Twice per month	Twice per month	--
Last Annual Performance Evaluation (gaseous)	--	--	4/17/2012	12/13/2009	--
Last two semi-annual flow rate audits for PM monitors	10/25/2011, 4/17/2012	10/25/2011, 4/17/2012	--	--	--
Changes planned within the next 18 months (Y/N)	N	N	N	N	N

Site name	Bakersfield-Muni
AIRS #	060292012
County	Kern
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	Speciated VOC PAMS equipment 6/2012; PM10 and PM2.5 equipment, and Met Parameters 7/2012; NMHC PAMS 10/2012
Pollutant Parameters	Ozone, CO, NO_2, Speciated-VOC for PAMS program, NMHC (PAMS), PM10 FEM, PM2.5 FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation
Address	2000 South Union Ave., Bakersfield, CA 93307
Latitude	N 35.33132
Longitude	W -119.000044
Elevation (m)	116 m
Location	Portable building in lot
Distance to road	305 m + (west)
Traffic Count	71000
Ground Cover	Paved

The Bakersfield-Golden State AMS was closed in December 2009 and was relocated to the Bakersfield- Municipal Airport (Bakersfield-Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield-Muni from July 2012 until late February 2013. See Appendix C for details.

Bakersfield-Muni (1 of 3)					
Pollutant	**Ozone**	**PM10 STP FEM**	**PM10 LC FEM**	**PM2.5 FRM**	**PM2.5 Non-FEM (Non-regulatory)**
Parameter Code	44201	81102	85101	88101	88502
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	High Concentration	High Concentration	High Concentration	High Concentration	High Concentration
Monitor objective	Standards/Strategy, Research Support, Timely/Public	Standards/Strategy, Research support	Research support	Standards/Strategy, Research Support, Timely/Public	Population Exposure
Monitor type	SLAMS				
POC (or primary monitor for PM2.5 and PM10)	1	1	1	1	3
Method code	087	079	079	145	170
Sampling method (List Instrument)	Teledyne 400 E	Met One BAM 1020	Met One BAM 1020	Thermo Partisol 2025i	Met One BAM 1020
Analysis method		BETA ATTENUATION	BETA ATTENUATION	Gravimetric	BETA ATTENUATION
Start date	6/2012	7/2012	7/2012	7/2012	7/2012
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	Seasonal	ALL YEAR
Probe height (meters)					
Distance from supporting structure (meters)					
Distance from obstructions on roof					
Distance from obstructions not on roof (meters)					

The Bakersfield-Golden State AMS was closed in December 2009 and was relocated to the Bakersfield- Municipal Airport (Bakersfield-Muni) AMS in 2012. The PM10 and PM2.5 monitors were operational at Bakersfield-Muni from July 2012 until late February 2013. See Appendix C for details. Site information is still being compiled for Bakersfield-Muni.

Bakersfield-Muni (1 of 3) continued					
Pollutant	**Ozone**	**PM10 STP FEM**	**PM10 LC FEM**	**PM2.5 FRM**	**PM2.5 BAM/Non-FEM**
Distance from trees (meters)					
Distance to furnace or incinerator flue (meters)					
Unrestricted airflow (degrees)					
Probe material (Teflon, etc.)					
Residence time (seconds)	11.4				
Frequency of flow rate verification for manual PM samplers audit	_____				_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____			
Last Annual Performance Evaluation (gaseous)	12/4/2012	_____			_____
Last two semi-annual flow rate audits for PM monitors	_____				
Changes planned within the next 18 months (Y/N))	N	N	N	N	N

Bakersfield-Muni (2 of 3)				
Pollutant	**CO**	**NO_2**	**Speciated-VOC (PAMS)**	**NMHC (PAMS)**
Parameter code	42101	42602	Many	43102
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	High concentration	High Concentration	Population
Monitor objective	Standards/strategy	Standards/strategy, research	Research	Research

Bakersfield-Muni (2 of 3) continued				
Pollutant	**CO**	**NO_2**	**Speciated-VOC (PAMS)**	**NMHC (PAMS)**
Monitor type	SLAMS	PAMS	PAMS	PAMS
POC	1	1	1	1
Sampling method (List Instrument)	Thermo 48i TLE	Teledyne 200E	Xontech 910 Xontech 925	Thermo 48i TLE
Method code	054	074	011	164
Analysis method				
Start date	7/2012	7/2012	6/2012	Scheduled for 10/2012
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	JUN-JUL-AUG	ALL YEAR
Probe height (meters)				
Distance from supporting structure (meters)				
Distance from obstructions on roof				
Distance from obstructions not on roof (meters)				
Distance from trees (meters)				
Distance to furnace or incinerator flue (meters)				
Unrestricted airflow (degrees)				
Probe material (Teflon, etc.)				
Residence time (seconds)	12.6	13.0	_____	_____
Frequency of flow rate verification for manual PM samplers audit	_____	_____	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____	_____	_____
Frequency of one-point QC check (gaseous)				
Last Annual Performance Evaluation (gaseous)	12/4/2012	12/4/2012		
Last two semi-annual flow rate audits for PM monitors				
Changes planned within the next 18 months (Y/N)	N	N	N	N

Site information is still being compiled for Bakersfield-Muni.

Bakersfield-Muni (3 of 3)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, Timely/Public
Monitor type	PAMS
POC	1
Method code	Many
Sampling method (List Instrument)	
Analysis method	
Start date	7/2012
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	
Distance from supporting structure (meters)	
Distance from obstructions on roof	
Distance from obstructions not on roof (meters)	
Distance from trees (meters)	
Distance to furnace or incinerator flue (meters)	
Distance between collocated monitors (meters)	
Unrestricted airflow (degrees)	
Probe material (Teflon, etc.)	
Residence time (seconds)	
Frequency of flow rate verification for manual PM samplers audit	
Frequency of flow rate verification for automated PM analyzers audit	
Frequency of one-point QC check (gaseous)	
Last Annual Performance Evaluation (gaseous)	
Last two semi-annual flow rate audits for PM monitors	
Changes planned within the next 18 months (Y/N)	N

Site name	Edison
AIRS #	060290007
County	Kern
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	1/1/80
Pollutant Parameters	Ozone, NO_2
Meteorological Parameters	Wind speed, wind direction, outdoor temperature
Address	Johnson Farm-Shed Rd, Edison CA 93320
Latitude	N 35° 20' 45"
Longitude	N 119° 51' 6"
Elevation (m)	172
Location	
Distance to road	450
Traffic Count	50000
Ground Cover	Dirt

Edison			
Pollutant	**Ozone**	**NO_2**	**Met Parameters**
Parameter code	44201	42602	Many
Spatial scale	Neighborhood	Neighborhood	Regional
Site type	High concentration, regional transport	Population	General
Monitor objective	Unknown	Unknown	Research, timely/public
Monitor type	SLAMS	SLAMS	Other
POC	1	1	1
Method code	087	074	Many
Sampling method (List Instrument)	API/Teledyne 400	API 200 A	
Analysis method	UV	CL	
Start date			
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)			
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)	None	None	None
Distance from trees (meters)	18.5	18.5	18.5
Distance to furnace or incinerator flue (meters)	None	None	None
Distance between collocated monitors (meters)	--	--	--
Unrestricted airflow (degrees)	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon
Residence time (seconds)	9.4	8.5	--
Frequency of flow rate verification for manual PM samplers audit	--	--	--
Frequency of flow rate verification for automated PM analyzers audit	--	--	--
Frequency of one-point QC check (gaseous)	Twice a month	Twice a month	--
Last Annual Performance Evaluation (gaseous)	4/18/2012	4/18/2012	--
Last two semi-annual flow rate audits for PM monitors	--	--	--
Changes planned within the next 18 months (Y/N)	N	N	N

Site name	Lebec
AIRS #	060292009
County	Kern
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	1/20/2009
Pollutant Parameters	PM2.5 Non-FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	1277 Beartrap Road, Lebec, CA 93243
Latitude	34.8415
Longitude	-118.861
Elevation (m)	1063
Location	
Distance to road	
Traffic Count	67000
Ground Cover	Dirt, vegetated

Lebec			
Pollutant	**PM2.5 Non-FEM**	**Met Parameters**	
Parameter code	88502	Many	
Spatial scale	Neighborhood	Regional	
Site type	Population	General	
Monitor objective	Timely/public	Research, timely/public	
Monitor type	SPM	SPM	
POC	3	1	
Method code	731	Many	
Sampling method (List Instrument)	Met One BAM 1020	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP-Met One 092, WD- Met One 020C, WS-Met One 010C	
Analysis method	BETA-ATTENUATION		
Start date	1/27/2009	Outdoor temperature, wind speed, wind direction 12/9/2009	Barometric pressure 1/28/2010
Operation schedule (e.g. 1:1, 1-Hour)	1-Hour	1:1	
Sampling season	ALL YEAR	ALL YEAR	
Probe height (meters)	5.5 m	9.6 m	
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)			
Distance from trees (meters)			
Distance to furnace or incinerator flue (meters)			
Distance between collocated monitors (meters)			
Unrestricted airflow (degrees)	360	360	
Probe material (Teflon, etc.)	ALUMINUM		
Residence time (seconds)	N/A		
Frequency of flow rate verification for manual PM samplers audit			
Frequency of flow rate verification for automated PM analyzers audit	BI-WEEKLY		
Frequency of one-point QC check (gaseous)	--		
Last Annual Performance Evaluation (gaseous)	10/25/2011, 4/10/2012		
Last two semi-annual flow rate audits for PM monitors			
Changes planned within the next 18 months (Y/N))	N		

Site name	Maricopa
AIRS #	060290008
County	Kern
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	7/1/87
Pollutant Parameters	Ozone
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	755 Stanislaus St., Maricopa CA 93352
Latitude	35.05139
Longitude	W -119.403
Elevation (m)	289
Location	In old school building
Distance to road	500 m + (north)
Traffic Count	0
Ground Cover	Gravel

Maricopa		
Pollutant	**Ozone**	**Met Parameters**
Parameter code	44201	Many
Spatial scale	Neighborhood	Regional
Site type	Regional transport	General
Monitor objective	Timely/public, standards/strategy, research support	Research, timely/public
Monitor type	SLAMS	SLAMS
POC	1	1
Method code	087	Many
Sampling method (List Instrument)	Teledyne 400 E	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS-Met One 010C
Analysis method	UV	_____
Start date	7/1/1987	7/1/1987
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)	5 m	5 m
Distance from supporting structure (meters)	_____	2.7 m (OT)
Distance from obstructions on roof	_____	5 m (BP) 1.5 m (OT)
Distance from obstructions not on roof (meters)	_____	_____
Distance from trees (meters)	_____	_____
Distance to furnace or incinerator flue (meters)	_____	_____
Distance between collocated monitors (meters)	_____	_____
Unrestricted airflow (degrees)	360	360 (WD,WS, BP), 270 (OT)
Probe material (Teflon, etc.)	TEFLON	_____
Residence time (seconds)	6.2	_____
Frequency of flow rate verification for manual PM samplers audit	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____
Frequency of one-point QC check (gaseous)	1:1	_____
Last Annual Performance Evaluation (gaseous)	10/16/2012	_____
Last two semi-annual flow rate audits for PM monitors	_____	_____
Changes planned within the next 18 months (Y/N)	N	N

Site name	Oildale
AIRS #	060290232
County	Kern
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	1/1/80
Pollutant Parameters	Ozone, PM10 FRM
Meteorological Parameters	None
Address	3311 Manor St, Oildale CA 93308
Latitude	N 35° 28'17"
Longitude	N 119° 1' 0"
Elevation (m)	183
Location	
Distance to road	150 m
Traffic Count	10000
Ground Cover	Dirt

Oildale		
Pollutant	**Ozone**	**PM10 FRM**
Parameter code	44201	81102
Spatial scale	Neighborhood	Neighborhood
Site type	Regional transport	Population
Monitor objective	Highest Concentration	Unknown
Monitor type	SLAMS	SLAMS
POC	1	2
Method code	087	063
Sampling method (List Instrument)	API/Teledyne 400	Sierra Anderson 1200
Analysis method	UV	Gravimetric
Start date		
Operation schedule (e.g. 1:1, 1:3)	1:1	1:6
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)		
Distance from supporting structure (meters)		
Distance from obstructions on roof		
Distance from obstructions not on roof (meters)	None	None
Distance from trees (meters)	None	None
Distance to furnace or incinerator flue (meters)	None	None
Distance between collocated monitors (meters)	--	--
Unrestricted airflow (degrees)	360	360
Probe material (Teflon, etc.)	Teflon	Teflon
Residence time (seconds)	10.4	--
Frequency of flow rate verification for manual PM samplers audit	--	Once a month
Frequency of flow rate verification for automated PM analyzers audit	--	--
Frequency of one-point QC check (gaseous)	Twice a month	--
Last Annual Performance Evaluation (gaseous)	4/19/2012	
Last two semi-annual flow rate audits for PM monitors	--	10/24/2011, 4/19/2012
Changes planned within the next 18 months (Y/N)	N	N

Site name	Shafter	
AIRS #	060296001	
County	Kern	
Collecting (Operating) Agency	Equipment operated by CARB: Ozone, NO_2	Equipment operated by SJVAPCD: Meteorology, Speciated VOC, NMHC
Reporting Agency	Data reported by CARB: Ozone, NO_2	Data reported by SJVAPCD: Speciated VOC, NMHC, Meteorology
Site Start Date	1/1/89	
Pollutant Parameters	Ozone, NO_2, Speciated VOC, NMHC	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, solar radiation	
Address	578 Walker St, Shafter CA 93263	
Latitude	N 35° 30'13"	
Longitude	N 119° 16' 21"	
Elevation (m)	126	
Location	DMV building	
Distance to road	10 m	
Traffic Count		
Ground Cover	Asphalt	

Shafter (1 of 2)				
Pollutant	**Ozone**	**NO_2**	**Total Speciated VOC**	**NMHC**
Parameter code	44201	42602	43102	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	General/background	Population	Population	Population
Monitor objective	Population Exposure	Population Exposure	Research	Research
Monitor type	PAMS	PAMS	PAMS	PAMS
POC	1	1	1	1
Method code	087	074	164	177
Sampling method (List Instrument)	Teledyne 400E (ARB)	Thermo TECO 42, 42C, 42i	Xontech 910A	Thermo TECO 55C
Analysis method	UV	CL	GC	GC
Start date	1/1/1989	1/1/1989	7/1/1994	7/1/1994
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	JUN-JUL-AUG	ALL YEAR
Probe height (meters)	10.0 m	10.0 m	7.0 m	7.0 m
Distance from supporting structure (meters)	____	____	____	____
Distance from obstructions on roof	____	____	____	____
Distance from obstructions not on roof (meters)	____	____	____	____
Distance from trees (meters)	____	____	____	____
Distance to furnace or incinerator flue (meters)	____	____	10.5 m	11.0 m
Distance between collocated monitors (meters)	____	____	____	____
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	TEFLON	TEFLON	S. STEEL	TEFLON
Residence time (seconds)	15.7	19.1	____	9.6
Frequency of flow rate verification for manual PM samplers audit	____	____	____	____
Frequency of flow rate verification for automated PM analyzers audit	____	____	____	____
Frequency of one-point QC check (gaseous)	1:1	1:1	____	1:1
Last Annual Performance Evaluation (gaseous)	10/17/2012	10/17/2012	5/10/2010	____
Last two semi-annual flow rate audits for PM monitors	____	____	____	____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Shafter (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	Other
POC	1
Method code	Many
Sampling method (List Instrument)	ITP- Hy-Cal BA512AA3BB, OT- Met One 060A-2, SRD- Epply Mod. 8-48, WD- Met One 020B, WS- Met One 010C, BP- Met One 092
Analysis method	____
Start date	1/1/1989
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	10.0 m
Distance from supporting structure (meters)	____
Distance from obstructions on roof	____
Distance from obstructions not on roof (meters)	____
Distance from trees (meters)	____
Distance to furnace or incinerator flue (meters)	____
Distance between collocated monitors (meters)	____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	____
Residence time (seconds)	____
Frequency of flow rate verification for manual PM samplers audit	____
Frequency of flow rate verification for automated PM analyzers audit	____
Frequency of one-point QC check (gaseous)	____
Last Annual Performance Evaluation (gaseous)	____
Last two semi-annual flow rate audits for PM monitors	____
Changes planned within the next 18 months (Y/N)	N

Site name	Corcoran–Patterson		
AIRS #	060310004		
County	Kings		
Collecting (Operating) Agency	All equipment operated by SJVAPCD		
Reporting Agency	Data reported by SJVAPCD: PM2.5 FEM, PM10 FEM, Meteorology	Data reported by Ventura County APCD: PM2.5 FRM	
Site Start Date	10/1/96		
Pollutant Parameters	PM10 FEM, PM2.5 FRM		
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure		
Address	1520 Patterson Ave, Corcoran CA 93212		
Latitude	N 36.10222		
Longitude	W -119.566		
Elevation (m)	62		
Location	Portable building		
Distance to road	35.0 (east), 38.5 (south)		
Traffic Count	1035		
Ground Cover	Gravel		

Corcoran–Patterson (1 of 2)		
Pollutant	**PM10 FEM**	**PM2.5 FRM**
Parameter code	81102	88101
Spatial scale	Neighborhood	Neighborhood
Site type	High concentration	High concentration
Monitor objective	Timely/public	Standards/strategy, research support
Monitor type	SLAMS	SLAMS
POC	7	1
Method code	079	145
Sampling method (List Instrument)	Thermo TEOM 1400	Thermo Partisol 2025i
Analysis method	TAPERED ELEMENT	Gravimetric
Start date	10/1/1996	9/6/2012
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1-Hour	1:3
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)		
Distance from supporting structure (meters)	_____	_____
Distance from obstructions on roof	_____	_____
Distance from obstructions not on roof (meters)	_____	_____
Distance from trees (meters)	48.0 m	50.0 m
Distance to furnace or incinerator flue (meters)	_____	_____
Distance between collocated monitors (meters)		
Unrestricted airflow (degrees)	360	360
Probe material (Teflon, etc.)	TEFLON	_____
Residence time (seconds)	_____	_____
Frequency of flow rate verification for manual PM samplers audit	_____	
Frequency of flow rate verification for automated PM analyzers audit	BI-WEEKLY	_____
Frequency of one-point QC check (gaseous)	_____	_____
Last Annual Performance Evaluation (gaseous)	_____	_____
Last two semi-annual flow rate audits for PM monitors	1/26/2011, 11/19/2012	1/26/2011, 11/19/2012
Changes planned within the next 18 months (Y/N)	N	N

Corcoran–Patterson (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	Many
POC	Many
Method code	Many
Sampling method (List Instrument)	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 090D2, WD- Met One 020C, WS-Met One 010C ITP - 110-50HV, OT-06A-2, BP-090D, WD-020C, WS-010B
Analysis method	_____
Start date	10/1/1996
Operation schedule (e.g. 1:1, 1-Hour)	1:1
Sampling season	ALL YEAR
Probe height (meters)	9.6 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	51.5 m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Hanford–Irwin	
AIRS #	060311004	
County	Kings	
Collecting (Operating) Agency	All equipment operated by SJVAPCD	
Reporting Agency	Data reported by SJVAPCD: Ozone, PM10 FEM, PM2.5 FEM, NO_2, Meteorology	Data reported by CARB: PM10 FRM
Site Start Date	10/11/93	
Pollutant Parameters	Ozone, PM10 FRM, PM10 FEM, PM2.5 FEM, NO_2	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure	
Address	807 S Irwin St, Hanford CA 93230	
Latitude	N 36.31472	
Longitude	W -119.644	
Elevation (m)	82	
Location	School roof	
Distance to road	158 m (south)	
Traffic Count	3383	
Ground Cover	Vegetation/roof material	

Hanford–Irwin (1 of 2)			
Pollutant	**Ozone**	**PM10 FRM**	**PM10 FEM**
Parameter code	44201	81102	81102
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research support	Standards/strategy, research support
Monitor type	SLAMS	SLAMS	SLAMS
POC	1	1	3
Method code	087	063	079
Sampling method (List Instrument)	Teledyne 400 E	Sierra Andersen SSI	Thermo TEOM 1400
Analysis method	UV	Gravimetric	Tapered Element
Start date	2/25/2010	10/11/1993	7/14/2010
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1:1	1:6	1-Hour
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	5.5 m	5.5 m	5.5 m
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)			
Distance from trees (meters)			
Distance to furnace or incinerator flue (meters)			
Distance between collocated monitors (meters)			
Unrestricted airflow (degrees)	360	360	
Probe material (Teflon, etc.)	TEFLON		
Residence time (seconds)	13.2		
Frequency of flow rate verification for manual PM samplers audit		QUARTERLY	
Frequency of flow rate verification for automated PM analyzers audit			
Frequency of one-point QC check (gaseous)	1:1		
Last Annual Performance Evaluation (gaseous)	1/25/2012		
Last two semi-annual flow rate audits for PM monitors		1/24/2011, 1/25/2012	1/24/2011, 1/25/2012
Changes planned within the next 18 months (Y/N)	N	N	N

Hanford–Irwin (2 of 2)			
Pollutant	**PM2.5 FEM (Regulatory)**	**NO_2**	**Met Parameters**
Parameter code	88101	42602	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population
Monitor objective	Research Support Timely/Public	Timely/public, standards/strategy, research support	Timely/public, Sandards/strategy, research support
Monitor type	SPM	SLAMS	Many
POC	3	1	Many
Method code	170	074	Many
Sampling method (List Instrument)	Met One BAM 1020	Teledyne 200 E	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS-Met One 010C
Analysis method	BETA	CL	
Start date	2/25/2010	2/25/2010	2/25/2010
Operation schedule (e.g. 1:1, 1-Hour)	1-Hour	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	5.5 m	5.5 m	9.6 m
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)			
Distance from trees (meters)			
Distance to furnace or incinerator flue (meters)			
Distance between collocated monitors (meters)			
Unrestricted airflow (degrees)	360	360	360
Probe material (Teflon, etc.)	ALUMINUM	TEFLON	
Residence time (seconds)		14.5	
Frequency of flow rate verification for manual PM samplers audit			
Frequency of flow rate verification for automated PM analyzers audit	BI-WEEKLY		
Frequency of one-point QC check (gaseous)		1:1	

Hanford–Irwin (2 of 2) continued			
Pollutant	**PM2.5 FEM (Regulatory)**	**NO_2**	**Met Parameters**
Last Annual Performance Evaluation (gaseous)		1/25/2012	
Last two semi-annual flow rate audits for PM monitors	1/24/2011, 1/25/2012		
Changes planned within the next 18 months (Y/N)	N	N	N

Site name	Madera–City
AIRS #	060392010
County	Madera
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	6/1/2010
Pollutant Parameters	Ozone, PM10 FEM, PM2.5 FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation
Address	28261 Avenue 14, Madera CA 93638
Latitude	N 36.953282
Longitude	-120.03421
Elevation (m)	84
Location	Portable building
Distance to road	686 m
Traffic Count	
Ground Cover	Asphalt

Madera—City				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 FEM**	**Met Parameters**
Parameter code	44201	85101	88101	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	General/background	Population	Population	General/background
Monitor objective	Timely/public, standards/strategy, research support	Timely/public	Timely/public	Timely/public, standards/strategy, research support
Monitor type	SLAMS	SLAMS	SPM	SLAMS
POC	1	3	3	1
Method code	087	079	170	Many
Sampling method (List Instrument)	Teledyne 400 E (IZS)	Thermo TEOM 1400	Met One BAM 1020	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS- Met One 010C
Analysis method	UV	TAPERED ELEMENT	BETA	
Start date	6/1/2010	6/1/2010	6/1/2010	
Operation schedule (e.g. 1:1, 1-Hour)	1:1	1-Hour	1-Hour	
Sampling season	ALL YEAR	ALL YEAR		
Probe height (meters)	5.5 m	5.5 m	5.5 m	
Distance from supporting structure (meters)	0.1 m	0.5 m	0.5 m	
Distance from obstructions on roof				
Distance from obstructions not on roof (meters)	39 m	35 m	37.5 m	
Distance from trees (meters)	13 m	15.5 m	14.5 m	
Distance to furnace or incinerator flue (meters)	48 m	43.5 m	45 m	
Distance between collocated monitors (meters)				
Unrestricted airflow (degrees)	360	360	360	
Probe material (Teflon, etc.)	TEFLON	STAINLESS STEEL	ALUMINUM	

Madera—City (continued)				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 FEM**	**Met Parameters**
Residence time (seconds)	10.2			
Frequency of flow rate verification for manual PM samplers audit				
Frequency of flow rate verification for automated PM analyzers audit		BI-WEEKLY	BI-WEEKLY	
Frequency of one-point QC check (gaseous)	1:1			
Last Annual Performance Evaluation (gaseous)	5/8/2012			
Last two semi-annual flow rate audits for PM monitors		12/1/2011, 5/8/2012	12/1/2011, 5/8/2012	
Changes planned within the next 18 months (Y/N)	N	N	N	N

Site name	Madera–Pump Yard
AIRS #	060390004
County	Madera
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	10/1/99
Pollutant Parameters	Ozone, NO_2, Speciated VOC, NMHC, Carbonyls
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation
Address	Av 8 and Road 29 1/2, Madera CA 93637
Latitude	N 36.86722
Longitude	W -120.01
Elevation (m)	85
Location	Portable building, outside school
Distance to road	16.0 m (west)
Traffic Count	0
Ground Cover	Dirt, paved

Madera–Pump Yard (1 of 2)				
Pollutant	**Ozone**	**NO_2**	**Speciated VOC**	**NMHC**
Parameter code	44201	42602	43102	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	General/background	Population	Population	Population
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research	Research	Research
Monitor type	PAMS	PAMS	PAMS	PAMS
POC	1	1	1	1
Method code	087	074	164	177
Sampling method (List Instrument)	Teledyne 400E	Thermo 42i	Xontech 910A	Thermo TECO 55C
Analysis method	UV	CL	GC	GC
Start date	10/1/1999	10/1/1999	10/1/1999	10/1/1999
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:3	1:1
Sampling season	ALL YEAR	ALL YEAR	JUN-JUL-AUG	ALL YEAR
Probe height (meters)	9.0 m	9.0 m	6.0 m	6.0 m
Distance from supporting structure (meters)	_____	_____	_____	_____
Distance from obstructions on roof	_____	_____	_____	_____
Distance from obstructions not on roof (meters)	_____	_____	_____	_____
Distance from trees (meters)	41.0 m	41.0 m	41.5 m	41.5 m
Distance to furnace or incinerator flue (meters)	_____	_____	_____	_____
Distance between collocated monitors (meters)	_____	_____	_____	_____
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	TEFLON	TEFLON	S. STEEL	TEFLON
Residence time (seconds)	14.3	14.9		16.9
Frequency of flow rate verification for manual PM samplers audit	_____	_____	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	_____	_____	_____
Frequency of one-point QC check (gaseous)	1:1	1:1	_____	1:1
Last Annual Performance Evaluation (gaseous)	11/1/2012	11/1/2012	5/10/2010	_____
Last two semi-annual flow rate audits for PM monitors	_____	_____	_____	_____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Madera–Pump Yard (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	Many
POC	Many
Method code	Many
Sampling method (List Instrument)	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, RH- Vaisala HMP45D, SRD- Epply Mod. 8-48, WD- Met One 020C, WS-Met One 010C
Analysis method	_____
Start date	10/1/1999
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	9.0 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	41.0 m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Merced–Coffee
AIRS #	060470003
County	Merced
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	10/1/91
Pollutant Parameters	Ozone, PM2.5 FEM, NO_2
Meteorological Parameters	Wind speed, wind direction, outdoor temperature
Address	385 S. Coffee St., Merced CA 95340
Latitude	37.28167
Longitude	-120.434
Elevation (m)	86
Location	Portable building, residential area
Distance to road	20 m (east)
Traffic Count	0
Ground Cover	Dirt, vegetated

Merced–Coffee				
Pollutant	**Ozone**	**PM2.5 FEM**	**NO_2**	**Met Parameters**
Parameter code	44201	88101	42602	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Regional
Site type	Population	Population	Population	General
Monitor objective	Timely/public, standards/strategy, research support	Timely/public	Standards/strategy	Research, timely/public
Monitor type	SLAMS	SPM	SLAMS	Other
POC	1	3	1	Many
Method code	087	170	074	Many
Sampling method (List Instrument)	Teledyne 400E	Met One BAM 1020	Thermo TECO 42C	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, WD- Met One 020C, WS-Met One 010C
Analysis method	UV	BETA	CL	____
Start date	10/1/1991		10/1/1991	10/1/1991
Operation schedule (e.g. 1:1, 1-Hour)	1:1	1-Hour	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	5.0 m	5.5 m	5.0 m	8.0 m
Distance from supporting structure (meters)	____		____	____
Distance from obstructions on roof	____		____	____
Distance from obstructions not on roof (meters)	____		____	____
Distance from trees (meters)	13.5 m	13.5 m	13.5 m	13.5 m
Distance to furnace or incinerator flue (meters)	____		____	____
Distance between collocated monitors (meters)	____		____	____
Unrestricted airflow (degrees)	345	345	345	345
Probe material (Teflon, etc.)	TEFLON	ALUMINUM	TEFLON	____
Residence time (seconds)	12.0		14.1	____
Frequency of flow rate verification for manual PM samplers audit	____		____	____
Frequency of flow rate verification for automated PM analyzers audit	____	BI-WEEKLY	____	____
Frequency of one-point QC check (gaseous)	1:1		1:1	____
Last Annual Performance Evaluation (gaseous)	11/15/2012		11/15/2012	____

Merced–Coffee (continued)				
Pollutant	**Ozone**	**PM2.5 FEM**	**NO_2**	**Met Parameters**
Last two semi-annual flow rate audits for PM monitors	____	4/25/2011, 11/15/2012	____	____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Site name	Merced—M Street	
AIRS #	060472510	
County	Merced	
Collecting (Operating) Agency	All equipment operated by SJVAPCD	
Reporting Agency	Data reported by CARB: PM10 FRM	Data reported by Ventura County APCD: PM2.5 FRM
Site Start Date	4/1/99	
Pollutant Parameters	PM10 FRM, PM2.5 FRM	
Meteorological Parameters	None	
Address	2334 M Street, Merced CA 95340	
Latitude	37.30861	
Longitude	-120.48	
Elevation (m)	35	
Location	Roof, post office	
Distance to road	100 m (railroad, east); PM10: 66 m (north) & 72.5 m (south); PM2.5: 52.5 m (north), 87 m (south)	
Traffic Count	22400	
Ground Cover	Gravel	

Merced—M Street		
Pollutant	**PM10 FRM**	**PM2.5 FRM**
Parameter code	81102	88101
Spatial scale	Neighborhood	Neighborhood
Site type	High Concentration/Population	High Concentration/Population
Monitor objective	Standards/strategy, research support	Standards/strategy, research support
Monitor type	SLAMS	SLAMS
POC	1	1
Method code	063	120
Sampling method (List Instrument)	Sierra Andersen SSI	Thermo Partisol 2025
Analysis method	GRAVI-METRIC	GRAVI-METRIC
Start date	4/1/1999	4/1/1999
Operation schedule (e.g. 1:1, 1:3)	1:6	1:3
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)	8.7 m	8.7 m
Distance from supporting structure (meters)	_____	_____
Distance from obstructions on roof	_____	_____
Distance from obstructions not on roof (meters)	_____	_____
Distance from trees (meters)	_____	_____
Distance to furnace or incinerator flue (meters)	38.5 m	45.0 m
Distance between collocated monitors (meters)	_____	_____
Unrestricted airflow (degrees)	360	360
Probe material (Teflon, etc.)	_____	_____
Residence time (seconds)	_____	_____
Frequency of flow rate verification for manual PM samplers audit	QUARTERLY	MONTHLY
Frequency of flow rate verification for automated PM analyzers audit	_____	_____
Frequency of one-point QC check (gaseous)	_____	_____
Last Annual Performance Evaluation (gaseous)	_____	_____
Last two semi-annual flow rate audits for PM monitors	11/16/2011, 5/1/2012	11/16/2011, 5/1/2012
Changes planned within the next 18 months (Y/N)	N	N

Site name	Manteca
AIRS #	060772010
County	San Joaquin
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	11/16/10
Pollutant Parameters	PM2.5 FEM; PM10 FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	530 Fishback Rd., Manteca CA 95337
Latitude	37.7933804512
Longitude	-121.24778867
Elevation (m)	11
Location	Portable building, cement pad, dirt, corner near school
Distance to road	12 M to Fishback Rd
Traffic Count	
Ground Cover	Sidewalk, dirt, grass

Manteca			
Pollutant	**PM2.5 FEM**	**PM10 FEM**	**Met Parameters**
Parameter code	88101	85101	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population
Monitor objective	Standards/Strategy Research Support	Standards/Strategy Research Support	Standards/Strategy Research Support
Monitor type	SLAMS	SPM	Non-regulatory
POC	3	3	1
Method code	170	079	Many
Sampling method (List Instrument)	Met One BAM 1020	Thermo TEOM 1400	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS- Met One 010C
Analysis method			
Start date	11/16/10	5/2/11	11/16/10
Operation schedule (e.g. 1:1, 1-Hour)	1-Hour	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	6M	6M	10M
Distance from supporting structure (meters)	1.5 M	1.5 M	
Distance from obstructions on roof	0	0	
Distance from obstructions not on roof (meters)	87.5 M	87.5 M	87.5 M
Distance from trees (meters)	53.5 M	53.5 M	53.5 M
Distance to furnace or incinerator flue (meters)	n/a	n/a	n/a
Distance between collocated monitors (meters)	n/a	n/a	n/a
Unrestricted airflow (degrees)	360	360	360
Probe material (Teflon, etc.)	Aluminum	Teflon	
Residence time (seconds)			
Frequency of flow rate verification for manual PM samplers audit			
Frequency of flow rate verification for automated PM analyzers audit	Bi-weekly	Bi-Weekly	
Frequency of one-point QC check (gaseous)	n/a	n/a	n/a

Manteca (continued)			
Pollutant	**PM2.5 FEM**	**PM10 FEM**	**Met Parameters**
Last Annual Performance Evaluation (gaseous)	n/a	n/a	n/a
Last two semi-annual flow rate audits for PM monitors	12/13/2011, 5/31/2012	12/13/2011, 5/31/2012	
Changes planned within the next 18 months (Y/N)	N	N	N

Site name	Stockton–Hazelton
AIRS #	060771002
County	San Joaquin
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	
Pollutant Parameters	Ozone, PM10 FRM, PM2.5FRM, PM2.5 FEM, CO, NO_2, Toxics
Meteorological Parameters	Outdoor temperature
Address	1593 E. Hazelton St., Stockton CA 95205
Latitude	N 37° 57' 6"
Longitude	N 121° 16' 8"
Elevation (m)	4
Location	
Distance to road	62 m
Traffic Count	1000
Ground Cover	Roof

Stockton–Hazelton (1 of 2)			
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FEM**
Parameter code	44201	81102	88101
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population
Monitor objective	Unknown	Highest Concentration	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS
POC	1	2	3
Method code	087	063	170
Sampling method (List Instrument)	API/Teledyne 400	Sierra Anderson 1200	Met One 1020
Analysis method	UV	Gravimetric	Beta Attenuation
Start date			
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1:1	1:6	1-Hour
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)			
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)	None	None	None
Distance from trees (meters)	0.0	0.0	0.0
Distance to furnace or incinerator flue (meters)	None	None	None
Distance between collocated monitors (meters)	--	--	--
Unrestricted airflow (degrees)	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon
Residence time (seconds)	8.5	--	--
Frequency of flow rate verification for manual PM samplers audit	--	3/21/2012, 2/13/2013	3/21/2012, 2/13/2013
Frequency of flow rate verification for automated PM analyzers audit	--	3/21/2012, 2/13/2013	3/21/2012, 2/13/2013
Frequency of one-point QC check (gaseous)	Twice a month	--	--
Last Annual Performance Evaluation (gaseous)	3/21/2012	--	--
Last two semi-annual flow rate audits for PM monitors	--	02/13/2013	02/13/2013
Changes planned within the next 18 months (Y/N)	N	N	N

Stockton–Hazelton (2 of 2)					
Pollutant	**NO_2**	**CO**	**Toxics SN20021014**	**Toxics SN20021016**	**Met Parameters**
Parameter code	42602	42101	Many	Many	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Regional
Site type	Population	Population	Population	Population	General
Monitor objective	Unknown	Population Exposure	Unknown	Unknown	Research, timely/public
Monitor type	SLAMS	SLAMS	Many	Many	Many
POC	2	1	Many	Many	Many
Method code	074	593	Many	Many	Many
Sampling method (List Instrument)	Thermo Teco 42, 42C, 42i	API 300 EU	Xontech 924	Xontech 924	
Analysis method	CL	IR			
Start date					
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	1:1	1:1	1:1
Sampling season	ALL YEAR	All year	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)					
Distance from supporting structure (meters)					
Distance from obstructions on roof					
Distance from obstructions not on roof (meters)	None	None	None	None	None
Distance from trees (meters)	0.0	0.0	0.0.	0.0.	0.0.
Distance to furnace or incinerator flue (meters)	None	None	None	None	None
Distance between collocated monitors (meters)	--	--	2	2	--
Unrestricted airflow (degrees)	360	360	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon	Teflon	Teflon
Residence time (seconds)	9.2	7.9	--	--	--
Frequency of flow rate verification for manual PM samplers audit					
Frequency of flow rate verification for automated PM analyzers audit					
Frequency of one-point QC check (gaseous)					
Last Annual Performance Evaluation (gaseous)	3/21/2012	10/25/2010	10/26/2010	10/26/2010	

Stockton–Hazelton (2 of 2) continued					
Pollutant	**NO_2**	**CO**	**Toxics SN20021014**	**Toxics SN20021016**	**Met Parameters**
Last two semi-annual flow rate audits for PM monitors		3/21/2012, 2/13/2013			
Changes planned within the next 18 months (Y/N)	N	N	N	N	N

Site name	Stockton–Wagner/Holt
AIRS #	060773010
County	San Joaquin
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by CARB
Site Start Date	10/1/96
Pollutant Parameters	PM10 FRM
Meteorological Parameters	None
Address	8778 Brattle Pl., Stockton CA 95209
Latitude	38.02972
Longitude	-121.353
Elevation (m)	7
Location	On school roof
Distance to road	30 m (north), 60 m (west)
Traffic Count	0
Ground Cover	Felt/rubber

Stockton–Wagner/Holt	
Pollutant	**PM10 FRM**
Parameter code	81102
Spatial scale	Neighborhood
Site type	Population
Monitor objective	Standards/strategy, research support
Monitor type	SLAMS
POC	1
Method code	063
Sampling method (List Instrument)	Sierra Anderson SSI
Analysis method	GRAVI-METRIC
Start date	10/1/1996
Operation schedule (e.g. 1:1, 1:3)	1:6
Sampling season	ALL YEAR
Probe height (meters)	10 m
Distance from supporting structure (meters)	1.5 m
Distance from obstructions on roof	11.8 m
Distance from obstructions not on roof (meters)	____
Distance from trees (meters)	12.5 m
Distance to furnace or incinerator flue (meters)	____
Distance between collocated monitors (meters)	____
Unrestricted airflow (degrees)	280
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	QUARTERLY
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	3/21/2012, 2/13/2013
Changes planned within the next 18 months (Y/N)	Y

Site name	Tracy–Airport
AIRS #	060773005
County	San Joaquin
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	1/11/05
Pollutant Parameters	Ozone, PM10 FEM, PM2.5 Non-FEM, NO_2
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure, radio acoustic sounding system (RASS)
Address	5749 S. Tracy Blvd., Tracy CA 95376
Latitude	37.682682
Longitude	-121.442393
Elevation (m)	30
Location	Municipal airport yard
Distance to road	685.7 m
Traffic Count	868
Ground Cover	Gravel

Tracy–Airport (1 of 2)				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 Non-FEM**	**NO_2**
Parameter code	44201	81102	88502	42602
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Regional transport	Regional transport	Regional transport	Population
Monitor objective	Timely/public, standards/strategy, research support	Timely/public	Timely/public	Standards/strategy
Monitor type	SLAMS	SPM	SPM	SLAMS
POC	1	3	3	1
Method code	087	079	731	074
Sampling method (List Instrument)	Teledyne 400E	Thermo TEOM 1400	Met One BAM 1020	Thermo 200E
Analysis method	UV	TAPERED ELEMENT	BETA-ATTENUATION	CL
Start date	1/11/2005	10/25/2005	1/11/2005	1/11/2005
Operation schedule (e.g. 1:1, 1-Hour)	1:1	1-Hour	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	7.0 m	6.5 m	6.5 m	7.0 m
Distance from supporting structure (meters)	_____	_____	_____	
Distance from obstructions on roof	_____	_____	_____	
Distance from obstructions not on roof (meters)	42.7 m	42.7 m	42.7 m	42.7 m
Distance from trees (meters)	41.5 m	41.5 m	41.5 m	41.5 m
Distance to furnace or incinerator flue (meters)	_____	_____	_____	
Distance between collocated monitors (meters)	_____	3.5m	3.5m	
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	TEFLON	TEFLON	ALUMINUM	TEFLON
Residence time (seconds)	10.1	_____	_____	16.2
Frequency of flow rate verification for manual PM samplers audit	_____	_____	_____	_____
Frequency of flow rate verification for automated PM analyzers audit	_____	BI-WEEKLY	BI-WEEKLY	_____
Frequency of one-point QC check (gaseous)	1:1	_____	_____	1:1
Last Annual Performance Evaluation (gaseous)	5/3/2012	_____	_____	5/3/2012

Tracy–Airport (1 of 2) continued				
Pollutant	**Ozone**	**PM10 FEM**	**PM2.5 Non-FEM**	**NO_2**
Last two semi-annual flow rate audits for PM monitors	_____	4/6/2011, 5/3/2012	4/6/2011, 5/3/2012	_____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Tracy–Airport (2 of 2)	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	SLAMS
POC	Many
Method code	Many
Sampling method (List Instrument)	I ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS-Met One 010C
Analysis method	_____
Start date	1/11/2005
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	10 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	48.7m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	360
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____

Tracy–Airport (2 of 2) continued	
Pollutant	**Met Parameters**
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Modesto–14th Street
AIRS #	060990005
County	Stanislaus
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	1/1/81
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 FEM, CO
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	814 14th Street, Modesto CA 95354
Latitude	N 37° 38' 31"
Longitude	W 120° 59' 39"
Elevation (m)	27
Location	
Distance to road	13 m
Traffic Count	10000
Ground Cover	Roof

Modesto–14th Street (1 of 2)				
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FRM**	**PM2.5 FEM**
Parameter code	44201	81102	88101	88101
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population	Population
Monitor objective	Unknown	Unknown	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
POC	1	3	1	3
Method code	087	063	118	170
Sampling method (List Instrument)	API/Teledyne 400	Sierra Anderson 1200	R&P 2025	Met One 1020
Analysis method	UV	Gravimetric	Gravimetric	Beta Attenuation
Start date				
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1:1	1:6	1:3	1-Hour
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)				
Distance from supporting structure (meters)				
Distance from obstructions on roof				
Distance from obstructions not on roof (meters)	None	None	None	None
Distance from trees (meters)	None	None	None	None
Distance to furnace or incinerator flue (meters)	None	None	None	None
Distance between collocated monitors (meters)	--	--	--	--
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon	Teflon
Residence time (seconds)	--	--	--	--
Frequency of flow rate verification for manual PM samplers audit	--	Once a month	Once a month	--
Frequency of flow rate verification for automated PM analyzers audit	--	--	--	Twice a month
Frequency of one-point QC check (gaseous)	Twice a month	--	--	--
Last Annual Performance Evaluation (gaseous)	5/31/2012	--	--	--
Last two semi-annual flow rate audits for PM monitors	--	11/18/2011, 5/31/2012	11/18/2011, 5/31/2012	11/18/2011, 5/31/2012
Changes planned within the next 18 months (Y/N)	N	N	N	N

Modesto–14th Street (2 of 2)			
Pollutant	**CO**	**PM2.5 Speciation**	**Met Parameters**
Parameter code	42101	Many	Many
Spatial scale	Neighborhood	Neighborhood	Regional
Site type	Population		General
Monitor objective	Unknown		
Monitor type	SLAMS	Supplemental speciation	SLAMS
POC	1	5	Many
Method code	067	811/812	Many
Sampling method (List Instrument)	Dasibi 3008		
Analysis method	IR	Gravimetric	
Start date			
Operation schedule (e.g. 1:1, 1:3)	1:1		1:1
Sampling season	ALL YEAR		ALL YEAR
Probe height (meters)			
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)	None		None
Distance from trees (meters)	None		None
Distance to furnace or incinerator flue (meters)	None		None
Distance between collocated monitors (meters)	--		--
Unrestricted airflow (degrees)	360		360
Probe material (Teflon, etc.)	Teflon		Teflon
Residence time (seconds)	--		--
Frequency of flow rate verification for manual PM samplers audit	--		--
Frequency of flow rate verification for automated PM analyzers audit	--		--

Modesto–14th Street (2 of 2) continued			
Pollutant	**CO**	**PM2.5 Speciation**	**Met Parameters**
Frequency of one-point QC check (gaseous)	Twice a month		--
Last Annual Performance Evaluation (gaseous)	5/31/2012		--
Last two semi-annual flow rate audits for PM monitors	--		--
Changes planned within the next 18 months (Y/N)	N	N	N

Site name	Turlock	
AIRS #	060990006	
County	Stanislaus	
Collecting (Operating) Agency	All equipment operated by SJVAPCD	
Reporting Agency	Data reported by SJVAPCD: Ozone, PM2.5 FEM, CO, NO_2, Meteorology	Data reported by CARB: PM10 FRM
Site Start Date	1994	
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 FEM, CO, NO_2	
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure	
Address	1034 S. Minaret St., Turlock CA 95380	
Latitude	37.48806	
Longitude	-120.836	
Elevation (m)	30	
Location	Portable building – neighborhood	
Distance to road	32 m (east), 4 m (north)	
Traffic Count	670	
Ground Cover	Gravel	

Turlock (1 of 2)				
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FEM**	**CO**
Parameter code	44201	81102	88101	42101
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population	Population
Monitor objective	Timely/public, standards/strategy, research support	Standards/strategy, research support	Timely/public	Standards/strategy
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
POC	1	1	3	1
Method code	087	063	170	054
Sampling method (List Instrument)	Teledyne 400E	Sierra Andersen SSI	Met One BAM 1020	Thermo TECO 48C
Analysis method	UV	GRAVIMETRIC	Beta Attenuation	IR
Start date	4/1/2000	9/14/2006	9/14/2006	4/1/2000
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1:1	1:6	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	7 m	6.5 m	5.4 m	7 m
Distance from supporting structure (meters)	____	____	____	____
Distance from obstructions on roof	____	____	____	____
Distance from obstructions not on roof (meters)	____	____	____	____
Distance from trees (meters)	37.5 m	37.5 m	37.5 m	37.5 m
Distance to furnace or incinerator flue (meters)	48.0 m	48.0 m	48.0 m	48.0 m
Distance between collocated monitors (meters)	____	____	____	____
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	TEFLON	____	ALUMINUM	TEFLON
Residence time (seconds)	14.5	____	____	14.7
Frequency of flow rate verification for manual PM samplers audit	____	QUARTERLY	____	____
Frequency of flow rate verification for automated PM analyzers audit	____	____	BI-WEEKLY	____
Frequency of one-point QC check (gaseous)	1:1	____	____	1:1
Last Annual Performance Evaluation	5/1/2012	____	____	5/1/2012

(gaseous)				
Turlock (1 of 2) continued				
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FEM**	**CO**
Last two semi-annual flow rate audits for PM monitors	____	11/17/2011, 5/1/2012	11/17/2011, 5/1/2012	____
Changes planned within the next 18 months (Y/N)	N	N	N	N

Turlock (2 of 2)			
Pollutant	**NO_2**	**Met Parameters**	
Parameter code	42602	Many	
Spatial scale	Neighborhood	Regional	
Site type	Population	General	
Monitor objective	Standards/strategy	Research, timely/public	
Monitor type	SLAMS	Other	
POC	1	1	
Method code	074	Many	
Sampling method (List Instrument)	Teledyne 200 E	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS-Met One 010C	
Analysis method	CL	____	
Start date	4/1/2000	Wind speed and wind direction 4/1/2000	Outdoor temperature and barometric pressure 9/3/2008
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1	
Sampling season	ALL YEAR	ALL YEAR	
Probe height (meters)	7 m	7.7 m	7 m (OT)
Distance from supporting structure (meters)	____	____	
Distance from obstructions on roof	____	____	
Distance from obstructions not on roof (meters)	____	____	
Distance from trees (meters)	37.5 m	37.5 m	
Distance to furnace or incinerator flue (meters)	48.0 m	48.0 m	
Distance between collocated monitors (meters)	____	____	
Unrestricted airflow (degrees)	360	360	
Probe material (Teflon, etc.)	TEFLON	____	
Residence time (seconds)	14.5	____	

Turlock (2 of 2) continued		
Pollutant	**NO_2**	**Met Parameters**
Frequency of flow rate verification for manual PM samplers audit	____	____
Frequency of flow rate verification for automated PM analyzers audit	____	____
Frequency of one-point QC check (gaseous)	1:1	____
Last Annual Performance Evaluation (gaseous)	5/1/2012	____
Last two semi-annual flow rate audits for PM monitors	____	____
Changes planned within the next 18 months (Y/N)	N	N

Site name	Porterville
AIRS #	061072010
County	Tulare
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	3/8/2010
Pollutant Parameters	Ozone, PM2.5 FEM
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	1839 S. Newcomb St., Porterville CA 93257
Latitude	N 36.031031
Longitude	W -119.055018
Elevation (m)	41
Location	Portable building on parking lot
Distance to road	160 m (east)
Traffic Count	
Ground Cover	Paved

Porterville			
Pollutant	**Ozone**	**PM2.5 FEM**	**Met Parameters**
Parameter code	44201	88101	Many
Spatial scale	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population
Monitor objective	Timely/public, standards/strategy, research support	Timely/public	Timely/public
Monitor type	SLAMS	SPM	SLAMS
POC	1	3	1
Method code	087	731	Many
Sampling method (List Instrument)	Teledyne 400 E (IZS)	Met One BAM 1020	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, WD- Met One 020C, WS-Met One 010C
Analysis method	UV	BETA-ATTENUATION	
Start date	3/8/2010	3/8/2010	3/8/2010
Operation schedule (e.g. 1:1, 1:3, 1-Hour)	1:1	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	5.4 m	5.4 m	9.6 m
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)	10 m	10 m	
Distance from trees (meters)			
Distance to furnace or incinerator flue (meters)			
Distance between collocated monitors (meters)			
Unrestricted airflow (degrees)	345	345	345
Probe material (Teflon, etc.)	TEFLON	ALUMINUM	
Residence time (seconds)	15.1		
Frequency of flow rate verification for manual PM samplers audit			
Frequency of flow rate verification for automated PM analyzers audit		BI-WEEKLY	
Frequency of one-point QC check (gaseous)	1:1		
Last Annual Performance Evaluation (gaseous)	5/9/2012		

Porterville (continued)			
Pollutant	**Ozone**	**PM2.5 FEM**	**Met Parameters**
Last two semi-annual flow rate audits for PM monitors		11/29/2011, 5/9/2012	
Changes planned within the next 18 months (Y/N)	N	N	N

Site name	Sequoia–Ash Mountain
AIRS #	061070009
County	Tulare
Collecting (Operating) Agency	All equipment operated by NPS
Reporting Agency	All data reported by NPS
Site Start Date	1/1/00
Pollutant Parameters	Ozone, PM2.5 FRM, PM2.5 FEM, CASTnet (dry deposition)
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, solar radiation
Address	Ash Mountain, Sequoia National Park CA
Latitude	N 36.48944
Longitude	-118.829
Elevation (m)	535
Location	
Distance to road	122 m
Traffic Count	1000
Ground Cover	Dirt

Sequoia–Ash Mountain				
Pollutant	**Ozone**	**PM2.5 FRM**	**PM2.5 FEM**	**Met Parameters**
Parameter code	44201	88501	88502	Many
Spatial scale	Regional	Regional	Regional	Regional
Site type	Regional transport	Regional transport	Regional transport	General
Monitor objective	Timely/public, standards/strategy, research support	Research support	Timely/public	Research, timely/public
Monitor type	Non-EPA Federal	Non-EPA Federal	Non-EPA Federal	Non-EPA Federal
POC	1	1	1	1
Method code	047	750	707	Many
Sampling method (List Instrument)	Thermo TECO 49, 49C			
Analysis method	UV	Gravimetric	Beta Attenuation	
Start date	2000	1992	2007	
Operation schedule (e.g. Hourly, 1:1, 1:3, 1-Hour)	1:1	1:6	1-Hour	1:1
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)	10	5	4	
Distance from supporting structure (meters)	3	2	1.5	
Distance from obstructions on roof	5			
Distance from obstructions not on roof (meters)	--			
Distance from trees (meters)	15 – 20	10 - 20	15 – 20	
Distance to furnace or incinerator flue (meters)	305	305	305	
Distance between collocated monitors (meters)	3	3	3	
Unrestricted airflow (degrees)	360	360	360	
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon	
Residence time (seconds)	13.4			
Frequency of flow rate verification for manual PM samplers audit				
Frequency of flow rate verification for automated PM analyzers audit				
Frequency of one-point QC check (gaseous)				
Last Annual Performance Evaluation (gaseous)	7/17/2012			
Last two semi-annual flow rate audits for PM monitors		10/5/2011, 7/17/2012	10/5/2011, 7/17/2012	
Changes planned within the next 18 months (Y/N)	N	N	N	N

Site name	Sequoia–Lower Kaweah
AIRS #	061070006
County	Tulare
Collecting (Operating) Agency	All equipment operated by NPS
Reporting Agency	All data reported by NPS
Site Start Date	4/1/1981
Pollutant Parameters	Ozone, NADP (wet deposition)
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, solar radiation
Address	Lower Kaweah Campground, Sequoia National Park, CA
Latitude	N 36.56611
Longitude	-118.7776
Elevation (m)	1890
Location	
Distance to road	1500 m
Traffic Count	5000
Ground Cover	Dirt

Sequoia–Lower Kaweah		
Pollutant	**Ozone**	**Met Parameters**
Parameter code	44201	Many
Spatial scale	Regional	Regional
Site type	Regional transport	General
Monitor objective	Timely/public, standards/strategy, research support	Research, timely/public
Monitor type	Non-EPA Federal	Non-EPA Federal
POC	1	1
Method code	087	Many
Sampling method (List Instrument)	Thermo TECO 49, 49C	
Analysis method		
Start date	1982	
Operation schedule (e.g. 1:1, 1:3)	1:1	1:1
Sampling season	ALL YEAR	ALL YEAR
Probe height (meters)	10	
Distance from supporting structure (meters)		
Distance from obstructions on roof		
Distance from obstructions not on roof (meters)		
Distance from trees (meters)	15 – 20	
Distance to furnace or incinerator flue (meters)	750	
Distance between collocated monitors (meters)		
Unrestricted airflow (degrees)		
Probe material (Teflon, etc.)	Teflon	
Residence time (seconds)	13.9	
Frequency of flow rate verification for manual PM samplers audit		
Frequency of flow rate verification for automated PM analyzers audit		
Frequency of one-point QC check (gaseous)		
Last Annual Performance Evaluation (gaseous)	10/3/2012	
Last two semi-annual flow rate audits for PM monitors		
Changes planned within the next 18 months (Y/N)	N	N

Site name	Visalia–Airport
AIRS #	061073000
County	Tulare
Collecting (Operating) Agency	All equipment operated by SJVAPCD
Reporting Agency	All data reported by SJVAPCD
Site Start Date	September 2000
Pollutant Parameters	None
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, relative humidity, barometric pressure, solar radiation, radio acoustic sounding system (RASS)
Address	9501 West Airport Drive, Visalia, CA 93277
Latitude	N 39.326683
Longitude	W -119.398406
Elevation (m)	90
Location	Municipal airport yard
Distance to road	81 m (west), 29.5 (parking lot)
Traffic Count	32000
Ground Cover	Vegetated

Visalia–Airport	
Pollutant	**Met Parameters**
Parameter code	Many
Spatial scale	Regional
Site type	General
Monitor objective	Research, timely/public
Monitor type	PAMS
POC	1
Method code	Many
Sampling method (List Instrument)	ITP- Hy-Cal 512AA3B, OT- Met One 060A-2, BP- Met One 092, RH- Vaisala HMP45D, SRD- Epply Mod. 8-48WD- Met One 020C, WS-Met One 010C
Analysis method	_____
Start date	10/1/1999
Operation schedule (e.g. 1:1, 1:3)	1:1
Sampling season	ALL YEAR
Probe height (meters)	10 m
Distance from supporting structure (meters)	_____
Distance from obstructions on roof	_____
Distance from obstructions not on roof (meters)	_____
Distance from trees (meters)	8 m
Distance to furnace or incinerator flue (meters)	_____
Distance between collocated monitors (meters)	_____
Unrestricted airflow (degrees)	270
Probe material (Teflon, etc.)	_____
Residence time (seconds)	_____
Frequency of flow rate verification for manual PM samplers audit	_____
Frequency of flow rate verification for automated PM analyzers audit	_____
Frequency of one-point QC check (gaseous)	_____
Last Annual Performance Evaluation (gaseous)	_____
Last two semi-annual flow rate audits for PM monitors	_____
Changes planned within the next 18 months (Y/N)	N

Site name	Visalia—Church
AIRS #	061072002
County	Tulare
Collecting (Operating) Agency	All equipment operated by CARB
Reporting Agency	All data reported by CARB
Site Start Date	7/1/79
Pollutant Parameters	Ozone, PM10 FRM, PM2.5 FRM, PM2.5 FEM, NO
Meteorological Parameters	Wind speed, wind direction, outdoor temperature, barometric pressure
Address	310 N. Church St., Visalia CA 93291
Latitude	N 36° 19' 57"
Longitude	W 119° 17' 27"
Elevation (m)	97
Location	Portable building
Distance to road	23 m
Traffic Count	10000
Ground Cover	Roof

Visalia—Church (1 of 2)				
Pollutant	**Ozone**	**PM10 FRM**	**PM2.5 FRM**	**PM2.5 Non-FEM**
Parameter code	44201	81102	88101	88501
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Site type	Population	Population	Population	Regional transport
Monitor objective	Unknown	Unknown	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS	Non-regulatory
POC	1	2	1	3
Method code	087	063	118	731
Sampling method (List Instrument)	API/Teledyne 400	Sierra Anderson 1200	R&P 2025	Met One 1020
Analysis method	UV	Gravimetric	Gravimetric	Beta attenuation
Start date				
Operation schedule (e.g. 1:1, 1:3)	1:1	1:6	1:3	1-Hour
Sampling season	ALL YEAR	ALL YEAR	ALL YEAR	ALL YEAR
Probe height (meters)				
Distance from supporting structure (meters)				
Distance from obstructions on roof				
Distance from obstructions not on roof (meters)	None	None	None	None
Distance from trees (meters)	None	None	None	None
Distance to furnace or incinerator flue (meters)	None	None	None	None
Distance between collocated monitors (meters)	--	--	--	--
Unrestricted airflow (degrees)	360	360	360	360
Probe material (Teflon, etc.)	Teflon	Teflon	Teflon	Teflon
Residence time (seconds)	13.9	--	--	--
Frequency of flow rate verification for manual PM samplers audit	--	Once a month	Once a month	--
Frequency of flow rate verification for automated PM analyzers audit	--	--	--	Twice a month
Frequency of one-point QC check (gaseous)	Twice a month	--	--	--
Last Annual Performance Evaluation (gaseous)	1/24/2012	--	--	--
Last two semi-annual flow rate audits for PM monitors	--	1/25/2011, 1/24/2012	1/25/2011, 1/24/2012	1/25/2011, 1/24/2012
Changes planned within the next 18 months (Y/N)	N	N	N	N

Visalia—Church (2 of 2)			
Pollutant	**NO_2**	**Met Parameters**	**PM2.5 Speciation**
Parameter code	42602	Many	Many
Spatial scale	null	Regional	Neighborhood
Site type	Unknown	General	
Monitor objective	Unknown	Research, timely/public	
Monitor type	SLAMS	Many	Supplemental speciation
POC	1	1	5
Method code		Many	811/812
Sampling method (List Instrument)			
Analysis method			Gravimetric
Start date			
Operation schedule (e.g. 1:1, 1:3)		1:1	
Sampling season		ALL YEAR	
Probe height (meters)			
Distance from supporting structure (meters)			
Distance from obstructions on roof			
Distance from obstructions not on roof (meters)		None	
Distance from trees (meters)		None	
Distance to furnace or incinerator flue (meters)		None	
Distance between collocated monitors (meters)		--	
Unrestricted airflow (degrees)		360	
Probe material (Teflon, etc.)		Teflon	
Residence time (seconds)	14.0	--	
Frequency of flow rate verification for manual PM samplers audit		--	
Frequency of flow rate verification for automated PM analyzers audit		--	
Frequency of one-point QC check (gaseous)		--	
Last Annual Performance Evaluation (gaseous)		--	
Last two semi-annual flow rate audits for PM monitors		--	
Changes planned within the next 18 months (Y/N)		N	N

APPENDIX C:

Bakersfield-Golden AMS Closure and Replacement

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In December 2009, the District was forced to close the Bakersfield-Golden State Highway (Bakersfield-Golden) air monitoring site (AMS) due to the expansion of Golden State Highway (compromising the siting criteria for proper distance from a roadway) and subsequent loss of the air monitoring site lease at the request of the landowner. This Appendix provides further information regarding the relocation, as outlined under 40 CFR Part 58.

40 CFR Part 58.14 paragraphs (c), and (c)(6), state that requests for discontinuation of a SLAMS monitoring station may be approved on a case-by-case basis if it does not compromise the data collection needed for comparison to the NAAQS and that the requirements listed in Appendix D of 40 CFR Part 58 continue to be met. A SLAMS monitor that is not eligible for removal under any of the criteria listed in 40 CFR Part 58, can be moved if logistical problems beyond the State's control make it impossible to continue operating at the current site. When that is the case, the SLAMS monitor may be moved to a nearby location with the same scale of representation. The District has met both of these conditions in the closure of Bakersfield-Golden.

The Bakersfield-Golden site was shut down due to termination of the lease by the landowner and highway expansion which would directly impact the siting criteria for the station. The District notified and kept EPA and CARB fully informed throughout the entire siting and relocation process via telephone calls and in the appropriate Network Plans. After an exhaustive effort, the Bakersfield-Golden monitoring site was relocated to the Bakersfield-Municipal Airport (Bakersfield-Muni) location.

The Bakersfield-Golden monitoring site operated from June 1994 until December 2009 and served primarily as a PAMS Type 2 site. PM10 equipment was installed in 1994 and PM2.5 equipment was installed in 1999. As Table 1 below shows, over the past five years, this site is not the design value site for ozone, PM2.5, or PM10 for the Bakersfield MSA which comprises the entire county of Kern. Additionally, the District is able to meet or exceed minimum NAAQS monitoring requirements for each of those pollutants without this site being operational as shown in Table 2. [1]

[1] Monitors from both the District and the Eastern Kern County Air Pollution Control District can be counted in determining compliance with minimum monitoring requirements for the Bakersfield MSA. However, only monitors located within the District's boundaries are included in this network plan.

Table 1 Design Value Comparisons for Kern County

1-hour Ozone Design Values (ppb)					
Monitoring Site	**2005-2007**	**2006-2008**	**2007-2009**	**2008-2010**	**2009-2011**
Arvin-Di Giorgio	-	-	-	120	118
Arvin-Bear Mountain	131	135	135	139	
Bakersfield- California Ave	117	120	117	114	111
Bakersfield-Golden State	108	110	-	-	-
Edison	135	136	135	134	124
Maricopa	100	97	97	97	102
Oildale	112	114	112	110	102
Shafter	105	106	106	106	102
8-hour Ozone Design Values (ppb)					
Monitoring Site	**2005-2007**	**2006-2008**	**2007-2009**	**2008-2010**	**2009-2011**
Arvin-Di Giorgio	-	-	-	-	73
Arvin-Bear Mountain	107	108	105	104	-
Bakersfield-California Ave	97	97	90	93	88
Bakersfield-Golden State	86	88	87	-	-
Edison	99	102	99	101	96
Maricopa	88	86	85	85	88
Oildale	95	98	93	94	89
Shafter	88	89	85	88	85
24-hour PM10 Design Values ($\mu g/m^3$)					
Monitoring Site	**2005-2007**	**2006-2008**	**2007-2009**	**2008-2010**	**2009-2011**
Bakersfield-California Ave	115	122	94.5	99	108
Bakersfield-Golden State	103	142	104	-	-
Oildale	104	107	117.5	88.6	100.2
24-hour PM2.5 Design Values ($\mu g/m^3$)					
Monitoring Site	**2005-2007**	**2006-2008**	**2007-2009**	**2008-2010**	**2009-2011**
Bakersfield-Golden	69	64	66	-	-
Bakersfield-California Ave	66	66	68	62	62
Bakersfield-Planz	68	70	70	65	55
Annual PM2.5 Design Values ($\mu g/m^3$)					
Monitoring Site	**2005-2007**	**2006-2008**	**2007-2009**	**2008-2010**	**2009-2011**
Bakersfield-Golden	19.2	18.8	19.3	-	-
Bakersfield-California Ave	19.6	20.9	21	18.4	16.5
Bakersfield-Planz	20.3	21.5	22.6	21.2	18.2

Table 2 Summary of Monitoring Requirements and Current Monitoring Sites in the District portion of Kern County

Pollutant/Program	Required # of Sites	Current # of Sites
State and Local Air Monitoring Stations (SLAMS)		
Ozone	2	6
PM10	2-4	2
PM2.5	2	2

The Bakersfield-Muni site is intended to be a long term site that will serve as the replacement PAMS Type 2 site for Bakersfield-Golden (measuring ozone, NO2, and other PAMS compounds). PAMS stations can be used to meet minimum monitoring requirements, if the site meets NAAQS siting criteria for that pollutant. The ozone, carbon monoxide, and nitrogen dioxide analyzers required as part of the PAMS program may be used for regulatory purposes after two years of operation provided the site meets NAAQS siting criteria for each of pollutants. Currently, the site does not meet NAAQS siting criteria for CO (near-road) and it does not meet NAAQS siting criteria for NO2 (area-wide, near-road, or RA40).

Finding an appropriate replacement location took a considerable amount of time and staff effort (approximately two years) and proved very difficult. The District was unsuccessful in finding a location within a couple of kilometers of the Bakersfield-Golden site, so the siting radius was expanded which enabled the District to find a suitable location approximately 6 km away. The Bakersfield-Muni site is located at the northern end of the Municipal Airport in a light commercial/industrial area downwind from freeways, which is similar to the Bakersfield-Golden site's location.

Construction of the site was also delayed in order to obtain the proper operating permits from the Federal Aviation Administration (FAA), approval from the City of Bakersfield, and electrical power installed. Once power was installed, construction of the platform to support the air quality monitoring equipment commenced and installation of the necessary equipment both inside the shelter and on the platform followed. Since the structure and power at Bakersfield-Golden have been removed and the site is closed, it is impossible to conduct parallel monitoring. As more data becomes available at the new Bakersfield-Muni site, the District will conduct ongoing comparative evaluation of the various Bakersfield monitoring sites.

PAMS Program

EPA's PAMS program is designed to provide enhanced information of ozone and its precursors to aid in modeling and development control strategies for Serious, Severe, and Extreme non-attainment areas. The speciated VOC equipment for PAMS and the PAMS related meteorological equipment became operational at Bakersfield-Muni AMS in June 2012. The station's carbonyl and meteorological equipment for PAMS began operating in July 2012. The NMHC equipment was installed in October 2012. Table 3 below compares the PAMS PAMS Type 2 equipment at the Bakersfield-Golden site to the Bakersfield-Muni site. Method code refers to the actual measurement method each piece of equipment.

Table 3 Bakersfield-Golden and Bakersfield-Muni Comparison Table

Site			Latitude		Longitude	
Bakersfield-Golden			35.385269		119.014733	
Bakersfield-Muni			35.331572		118.999995	
Parameters	Site		Sampling Schedule		Method Code	
	Golden	Muni	Golden	Muni	Golden	Muni
Ozone	x	x			087	087
CO	x	x			054	054
NO	x	x			074	074
NO2	x	x			074	074
NOx	x	x			074	074
Speciated-VOC	x	x	1:3 (Seasonal)	1:3 (Seasonal)	011	011
NMHC	x	x			011	011
Carbonyls	x	x	1:3 (Seasonal)	1:3 (Seasonal)		
IT	x	x			014	014
OT	x	x			040	040
BPR	x	x			014	014
WS	x	x			020	020
WD	x	x			020	020
RH	x	x			011	011
SRAD	x	x			011	011

PM10 and PM2.5 Monitoring

The District already meets the minimum monitoring requirements in Kern County without the PM10 and PM2.5 monitors at the Bakersfield-Muni site. The District attempted to utilize the air monitoring station to monitor both PM10 and PM2.5 to provide information for forecasting, in addition to conducting monitoring as a PAMS Type 2 site. Installation and initial operation of the PM monitoring equipment began in July 2012. However, it soon became apparent that this site was not acceptable as a PM10 and PM2.5 site because site specific emissions from nearby sources were impacting the site, and the site was therefore not measuring ambient particulate concentrations.

Under federal regulation, the purpose of particulate matter monitoring sites is to capture ambient (or neighborhood level) air quality. The siting requirements for both PM10 and PM2.5 state that the ideal monitoring site for these pollutants is of "neighborhood scale". For PM10, the regulation states, in part,

> *(b) Although microscale monitoring may be appropriate in some circumstances, the most important spatial scales to effectively characterize the emissions of PM_{10} from both mobile and stationary sources are the middle scales and neighborhood scales. (Appendix D to Part 58 4.6 (b))*

Likewise, for PM2.5, the regulation states in part,

> *(b) Specific Design Criteria for $PM_{2.5}$. The required monitoring stations or sites must be sited to represent community-wide air quality. These sites can include sites collocated at PAMS. These monitoring stations will typically be at neighborhood or urban-scale; however, in certain instances where population-oriented micro-or middle-scale $PM_{2.5}$ monitoring are determined by the Regional Administrator to represent many such locations throughout a metropolitan area, these smaller scales can be considered to represent community-wide air quality. (Appendix D to Part 58 4.7 (b))*

After building the site, problems with the site location became apparent. During detailed surveillance of the area (particularly during periods of peak emissions readings), the District discovered that nearby sources, including regular airport operations, were impacting PM levels at the site. For example, activities such as street sweeping, taxiing of aircraft, and soil disking were causing PM to be entrained immediately adjacent to or near the site. Figure 1 shows the location of the site from an aerial perspective. Figures 2 through 5 show nearby sources from various directions. Figures 6 through 11 are pictures that show sources of dust near the site that is impacting both PM10 and PM2.5 concentrations.

The Bakersfield-Muni AMS is surrounded by asphalt and the District is now aware that street sweeping activities occur regularly next to and around the structure. While conducting surveillance of the area, District staff observed a layer of dust coating flat surfaces at site. The plume generated by the street sweeper does not impact adjacent property owners but it directly impacts the Bakersfield-Muni AMS because the plume generated by the street sweeper engulfs the site. When this occurs, the analyzer measures the plume from the street sweeper (a point source) rather than the ambient air. Additionally, taxiways are nearby and planes using them entrain dust as they go by.

Vacant land that occupies areas within and surrounding the airport is comprised of very fine, silty soil. Over 60% of this native soil consists of particles between 5 and 50 microns in diameter. Such areas on the airport property that are next to the Bakersfield-Muni AMS are routinely disked and mowed for weed control abatement which causes a considerable of dust to be deposited on the runway, taxiways, and other asphalt surfaces. Additionally some of the light industrial and commercial businesses located

adjacent to the airport have large unpaved areas that can contribute to PM levels in the area.

In addition to the visual observations of the nearby sources, the District also installed additional PM monitoring equipment to help confirm that the aforementioned activities led to higher PM10 and PM2.5 measurements than would be normally found in ambient air, and to verify the that the suspect analyzers were operating properly. Through the extensive efforts of District staff, it was determined that this site was measuring nearby sources rather than measuring ambient air. Therefore, the site does not represent a "neighborhood scale" PM site and does not qualify as a SLAMS site due to near-source emission impacts that were unknown at the time of initial installation.

Given the PM10 and PM2.5 measurements at this site were not representative of ambient air quality and the PM monitors are not required regulatory monitors, the District removed the PM analyzers at the Bakersfield-Muni AMS and is seeking another location in which to place them for continued forecasting support. Additionally, there is a nearby air monitoring site (Bakersfield-Planz) that currently measures PM2.5 concentrations in the Municipal Airport area. The District will continue to operate the Bakersfield-Muni AMS for PAMS Type 2 purposes and will continue monitoring gaseous pollutants.

Next Steps

After the District determined that the site was not suitable to measure PM10 and PM2.5, the District began the search for a replacement site. During its investigation, the District discovered that the planned road expansion of Golden State Highway, which caused the closure of the original Bakersfield-Golden AMS, did not take place and the prior location would still meet appropriate siting criteria. Therefore, the District may be able to locate the replacement site at or near the old Bakersfield-Golden air monitoring site, which would be the preferred option since there is almost 15 years of air monitoring data that already exists for that area in Bakersfield. In fact, the District is now in talks with Kern County to place these two analyzers on the property where the previous Bakersfield-Golden AMS was sited. If the recommended location on the property meets appropriate siting criteria, the new PM site will be 40 feet away from the original site. If this location is determined to be infeasible, the District will continue its search for a new site.

Figure 1: Aerial View of Bakersfield-Municipal Site

Figure 2: Looking North from the Probe

Figure 3: Looking East from the Probe

Figure 4: Looking South from the Probe

Figure 5: Looking West from the Probe

Figure 6: Panoramic view of asphalt that is regularly cleaned by street sweepers adjacent to the site.

Figure 7: Additional photo of asphalt that is regularly cleaned by street sweepers adjacent to the site.

Figure 8: Dirt and debris near the site, in areas that the street sweeper cannot reach

Figure 9: Looking south east from the probe. Unpaved areas that are disked and mowed to keep the area weed free. Much of the airport property is unpaved.

Figure 10: A disking operation being conducted on one of the large unpaved areas. Due to the sun angle, the plume is almost not visible.

Figure 11: Visible dust plume from disking operation

APPENDIX D:

NO_2 Near-Road Monitoring Station Siting Requirements and Selection Process for the Bakersfield Core Based Statistical Area

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1. Introduction

In 2010, the U.S. Environmental Protection Agency (EPA) established a new 1-hour standard and new minimum monitoring requirements for nitrogen dioxide (NO_2). Additionally, EPA promulgated new NO_2 monitoring network design requirements which consist of three distinct NO_2 air monitoring networks. The first network is the near-road monitoring network which is aimed at capturing the higher NO_2 concentrations that occur near roadways. The second network is the area-wide monitoring network which will represent NO_2 concentrations characteristic of large neighborhood or urban areas. The third network, which is called the Regional Administrator Required Monitoring Network, requires Regional Administrators to work with states to site a network of 40 NO_2 monitors throughout the nation in locations aimed at protecting susceptible and vulnerable communities.

The monitoring requirements for the first two monitoring networks mentioned above for the new NO_2 1-hour standard are based upon the population of Core Based Statistical Areas (CBSAs) as well as the annual average daily traffic (AADT) counts. The intent of the NO_2 near-road network is placing the monitoring stations near major roads where maximum hourly NO_2 concentrations are expected. As noted in Section 4.3 of Appendix D of 40 CFR Part 58, one microscale near-road NO_2 monitoring station is required in each CBSA with a population of 500,000 or more. Data such as traffic volumes, fleet mix, roadway design, traffic congestion patterns, and characteristics such as local terrain or topography, and meteorology are among the criteria that must be considered when determining areas which have the highest NO_2 concentrations. Additionally, population exposure, near-road siting criteria, safety, surrounding land use, and other factors are also considered during the location selection process. NO_2 monitors that are required under this new standard are to be operational by January 1, 2013; however EPA recently released a proposed rule that will move this date to January 1, 2017. To assist agencies with the siting selection process, EPA provided the Near-Road NO_2 Monitoring Technical Assistance Document (TAD) which outlines recommendations and ideas on how to successfully meet the revised NO_2 near-road monitoring requirements[1].

EPA requires air monitoring agencies to submit a report which describes the site selection process for each NO_2 near-road monitoring station that will be established. The San Joaquin Valley Air Pollution District (District) is required to install four near-road air monitoring stations, one in each of the following CBSAs: Stockton, Modesto, Fresno, and Bakersfield. Accordingly, a report of the site selection process will be submitted by the District for each of the aforementioned stations.

With considerable assistance provided by the California Air Resources Board (CARB), the District carried out a detailed process of selecting a site for a near-road monitoring

[1] Near-Road NO_2 Monitoring Technical Assistance Document (TAD) – A document that provides state and local air agencies with recommendations and ideas on how to successfully implement near-road NO2 monitors in order to meet the NO_2 minimum monitoring requirements that were revised in 2010. http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf

station in the Bakersfield CBSA. This report describes the site selection process conducted by the District and CARB for the purpose of establishing a new NO_2 near-road monitoring station.

2. Site Selection Process

The District conducted a site selection process that involved assistance from the CARB in gathering traffic count data, and determining candidate road segments and the positive and negative attributes of each. Road design, and wind direction associated with each road segment were also considered during the process. Once the acceptable land parcels were decided upon, a lease was negotiated between the District and one of the property owners and the final site selection was made. In addition to following the guidance provided in the TAD, the District also considered PM2.5 so the site could potentially accommodate a PM2.5 monitor in the future.

2.1 Traffic Count Data

In order to determine the road segments that theoretically have the highest NO_2 concentrations, CARB and the District assessed all available traffic count data available from the California Department of Transportation (Caltrans) for Kern County. The data included AADT, Fleet mix, FE-AADT, and congestion data. Following the guidance found in the TAD, the District and CARB used FE-AADT to determine and rank the road segments.

2.1.1 AADT

Traffic counts represent AADT which is the total traffic volume for one year divided by the number of days in the year. AADT usually depicts the traffic volume along a given road segment. All traffic count figures listed include traffic in both directions. Ahead AADT typically refers to traffic north and east of a traffic count location, and Back AADT typically refers to traffic south and west of a traffic location. To avoid overlapping data, the Ahead AADT was used in the District's site selection process.

Caltrans typically collects traffic counts on freeways. The majority of continuous traffic count sampling is conducted by moving the electronic counting instruments from location to location throughout the state. Traffic counts are adjusted estimates of AADT which compensate for seasonal influence, weekly variation, and other variables.

2.1.2 AADTT

Truck traffic is classified by the number of axles trucks have. For example, 1½ -ton trucks with dual rear tires are included in the two-axle class but pickups and vans with only four tires are not. Annual average daily truck traffic (AADTT) is the total truck traffic volume for one year divided by the number of days in the year. Continuous truck count sampling consists of vehicle classification counts that are conducted throughout California. This program includes partial day and 24-hour counts on high volume, urban freeways, and 7-day counts on low volume, rural freeways. Truck counts are adjusted estimates of AADTT which compensate for seasonal influence, weekly variation, and other variables.

2.1.3 Fleet Mix

Fleet mix pertains to a specific count or percentage of the total volume of traffic and differentiates between light-duty (LD) vehicles and heavy-duty (HD) vehicles. Differences between LD and HD vehicles include the type of fuel they run on (gasoline vs. diesel), and the vehicle's weight, length, or number of axles. NO_2 emissions vary for all vehicles depending on vehicle type; load, speed, and freeway grade, however, diesel fueled HD vehicles typically emit far higher amounts of NO_2 than do gasoline fueled LD vehicles. Fleet mix is important in determining where the emission differences occur.

2.1.4 Fleet Equivalent AADT

FE-AADT is a metric[2] that accounts for total traffic volume and fleet mix in order to compare road segments, especially when the amount of total traffic volume and HD volume on those road segments varies. FE-AADT gives a better indication of estimated NO2 emissions than does AADT. The FE-AADT values shown in Table 1 below were determined using Ahead AADT and AADTT in the equation below:

$$\text{FE-AADT} = (\text{Ahead AADT} - \text{AADTT}) + (\text{AADTT}*10)$$

This equation gives truck traffic 10 times the weight of non-truck traffic in determining rank because the NO_2 emissions are approximately 10 times as great as non-truck traffic. The segments with the highest levels of NO_2 should be those with the greatest truck traffic.

2.1.5 Postmile

Caltrans has identified Postmile values as breakpoints on Freeways that usually increase from South to North or West to East depending on the direction the route follows within the county. Postmile values increase from the beginning of the route to the next county line and then start over. The total AADT values shown in the tables below apply to the freeway immediately ahead of the Postmile.

[2]For more information on the equation that defines FE-AADT, go to http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf.

2.1.6 Traffic Congestion

Traffic congestion can lead to stop-and-go traffic conditions and per-vehicle emissions may increase as a result. A notable and constant reduction in speed between two points on a freeway is defined as a bottleneck. The congestion values shown the tables below are annual vehicle hourly delay (AVHD) in thousand hours and represent the sum of the delay from the morning and evening peak periods and from the midday period.

2.2 Physical Characteristics of Near-Road Sites

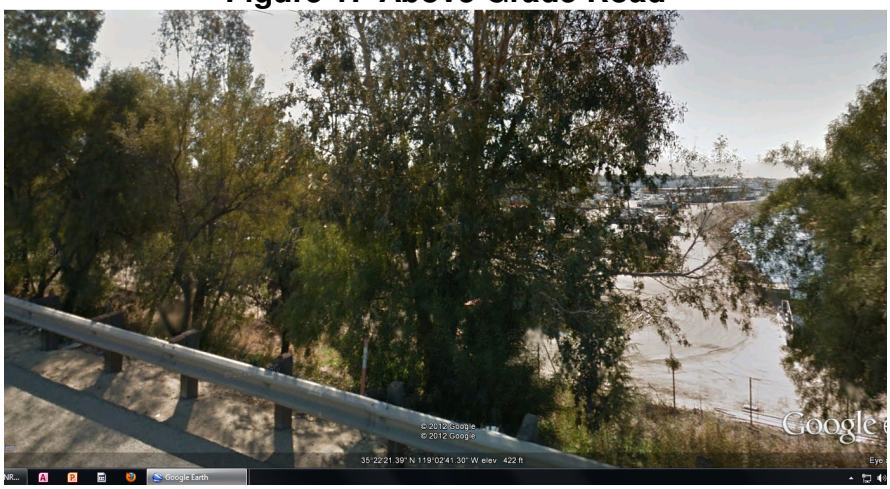
The physical characteristics of candidate road segments must be considered in order to determine which segments are adequate for near-road monitor placement. The characteristics to be assessed and accounted for include roadway design, roadside structures and vegetation, terrain, and meteorology.

2.2.1 Roadway design or configuration and clear zones

Road design or configuration is important in determining acceptable locations for near-road monitors because it can impact the dispersion and transport of pollutants. Road designs can be characterized as above-grade, below-grade, or at-grade. Additionally, road designs that contain features such as interchanges and toll plazas can influence vehicle acceleration and deceleration rates which in turn affect pollutant concentrations and plumes.

Above-grade or elevated road configurations can be open or have solid fill material beneath them (see Figure 1). Roads that are open underneath are subject to wind from all directions, increased dispersion, turbulence, and dilution of the air as it flows over and under the road. These affects can cause pollutant concentrations to be lower downwind of the elevated roadway. Roads that are over solid fill material can have winds normal with the road and forces that keep the traffic plume near at the surface while others can cause the plume to loft above the ground when it meets the vertical filled material or wall beneath.

Figure 1: Above Grade Road



Roads that are configured below-grade can have vertical or sloped walls that facilitate the funneling of air parallel to the road (see Figure 2). As the air streams through the corridor it can cause pollutant plumes to loft and be carried away as the air flows through, up, and out of the below-grade roadway.

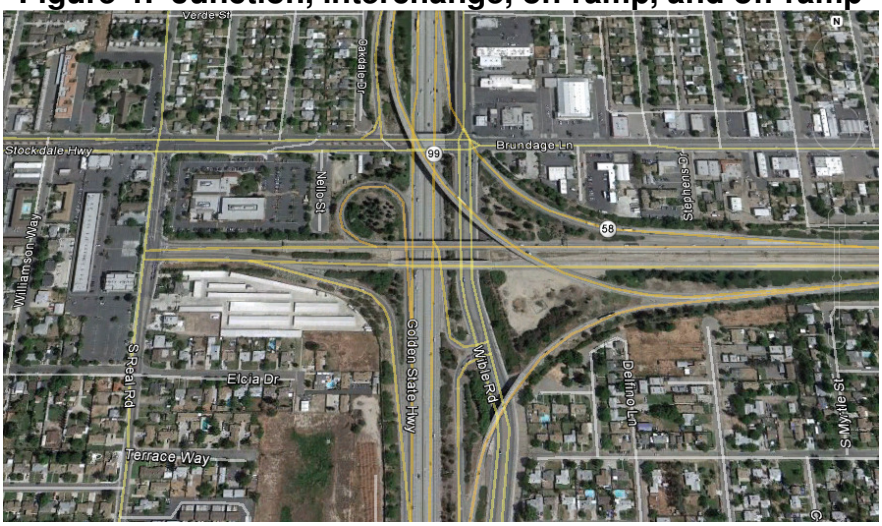
Figure 2: Below grade with up-slope

Roadways that are generally at the same elevation as the immediate surrounding terrain are referred to as at-grade roadways (see Figure 3). Other than structures or obstacles near the roadside, at-grade roadways pose the least amount of impact on pollutant dispersion. As stated in the TAD, at-grade or near at-grade roads are the most desirable road configurations for siting near-road monitors.

Figure 3: At grade roadway

As stated above, EPA requires that NO_2 near-road monitoring stations be placed in areas representative of high NO_2 levels. According to the TAD, road areas that go uphill or downhill, and roads that contain on-ramps and off-ramps, interchanges, or unique features such as toll plazas, and tunnel entrances and exits should not be considered for NO_2 near-road monitor placement because they are designed for rapid vehicle accelerations and decelerations (see examples in Figure 4). These areas and road designs do not produce representative NO_2 concentrations. The most suitable place to locate an NO_2 near-road monitoring station is one that is at grade with immediate flat surrounding terrain.

Figure 4: Junction, interchange, on-ramp, and off-ramp



Clear zones denote roadside areas that are available to drivers who need to pull over and stop safely or regain control if a vehicle leaves the road. Such zones extend from the road's outside traffic edge to an obstacle further off the road. The roadway's traffic volume, design speeds, and the slope of the terrain adjacent to and beneath the roadway are used to determine the width of the clear zone. Near-road monitoring stations are placed outside of clear zones.

2.2.2 Roadside structures and vegetation

Roadside structures such as sound walls or noise barriers can affect dispersion by blocking it or causing turbulence which can mix pollutants. Roadside structures can channel pollutants downwind and inhibit or reduce normal dispersion along the roadway. Vegetation can also affect pollutant transport and dispersion by mixing and diluting air as it blows through the branches and leaves of trees, and by blocking wind and slowing dispersion down. Additionally, pollutant concentrations in traffic plumes can decrease when particulate pollutants get deposited onto the surfaces of branches and leaves. Locations that are void of roadside structures and vegetation are therefore more acceptable for near-road monitor placement.

2.2.3 Terrain

Local terrain can affect dispersion and pollutant transport so it is important to have a good understanding of the large scale terrain features that characterize the air basin when considering locations for near-road monitor placement. For example, valleys may be more susceptible to high NO_2 concentrations because the surrounding terrain and temperature inversions tend to inhibit dispersion whereas open terrain areas allow for better air flow which can aid in lower pollutant concentrations.

2.2.4 Meteorology

The TAD states that evaluating historical meteorological data can be helpful in determining locations that may be directly impacted by traffic emissions from particular road segments due to local winds. Understanding the local meteorology can also indicate which side of a road segment may be more impacted by the traffic emissions. Research studies have shown that locations very close to the roadway on the downwind side of a given road segment can adequately capture peak pollutant concentrations.

2.3 Spatial scales and population exposure

40 CFR Part 58 Appendix D requires that the spatial scale of a NO_2 near-road air monitoring site be classed as a microscale site. Microscale sites measure peak concentrations in an area with of a radius 100 meters. Concentrations decrease significantly as distance increases outside of this area. This being the case, EPA requires near-road monitoring stations to be placed as close as practicable but no further than 50 meters from the target road segment. Additionally, EPA requires that the sampling inlet be within 2 to 7 meters from the road's surface.

As specified in 40 CFR Part 58 Appendix D, Section 4.3.2(a)(1), state and local air monitoring agencies shall consider the potential for population exposure when making their final near-road monitoring site selections when there are multiple acceptable sites in the same ranked segment.

2.4 Safety

As specified in the TAD, NO_2 near-road monitoring stations must be safely sited for motorists traveling the roadway and for the monitoring station operators. The sites are required to be safely and legally accessible to station operators and pose no safety hazards to drivers as well as people walking or living nearby. In addition, some sites will require the installation of permanent safety barriers, such as guardrails.

3. Site Selections for Bakersfield CBSA

3.1 Introduction

As stated in Section 2.0 above, the District started with traffic count data to select the freeway segments that were to be considered for a site. Meteorology, terrain, road structures, parcels with locations acceptable for building a site on, and landowner willingness to host a site on their property all played a role determining site selection. Since the segments were nearly continuous the District looked at them as a whole, focusing on finding acceptable locations. It quickly became apparent that the highest ranked segments in the urban core did not have any available land for constructing a site. These segments in central Bakersfield were typically above or below grade with sound walls which prevented placement of the site close enough to the edge of the freeway to capture peak values. In fact, the District found that there are only a few locations along the top ten segments that could meet all of EPA's siting criteria.

At this juncture, the District decided to contact all landowners of parcels with acceptable locations in the top ten segments and prioritize working with the landowners who responded positively within the highest ranked segments before moving further down the list.

The District process in locating a NO_2 near-road site can be summed as follows:

- Rank all road segments
- Determine the top 10 segments
- Find locations were a site can be built (acceptable locations or parcels)
    - Take into account meteorology, structures, obstacles, grade, and other criteria.
    - Take into account near-road exposure.
- Contact property owners by sending a letter
- Contact those property owners that are willing to work with us starting with those in the highest ranked segments

- Negotiate a lease with a willing property owner in the highest ranked segment
- Present site selection to the Governing Board for approval, and include the opportunity for public comments.

3.2 Traffic Count Data

Traffic count data determined which road segments would likely have the highest NO_2 concentrations in the Bakersfield CBSA. Because truck traffic accounts for the highest NO_2 emissions, the road segments were ranked by Fleet Equivalent Annual Average Truck Traffic (FE-AADT) counts. Areas that did not have recent truck traffic counts had to be estimated.

While the percentage of statewide annual vehicle hours of delay caused by traffic congestion is far less in the San Joaquin Valley than in other areas of the state, the District included traffic congestion with the traffic count data as per the requirements outlined in the TAD. Caltrans District 6, which includes the Bakersfield CBSA, has less than 2% of the statewide annual vehicle hours of delay due to traffic congestion in the entire district. The highest ranking bottleneck locations where freeway speed dropped and remained below 60 mph are shown in Table 1 in below. Because so little traffic congestion occurs in the Bakersfield CBSA, congestion did not factor into site selection.

3.2.1 Road Segment Ranking

After the traffic data was examined, each road segment was ranked by FE-AADT from the highest traffic count to the lowest for the CBSA. The list was narrowed to the top 30 road segments (see Appendix A) then reduced to the top 10 segments (see Table 1 below). District staff surveyed the areas within each segment, and identified which locations could support a near-road monitoring station.

Table 1: Kern County Top Road Segments by Fleet Equivalent AADT[4]

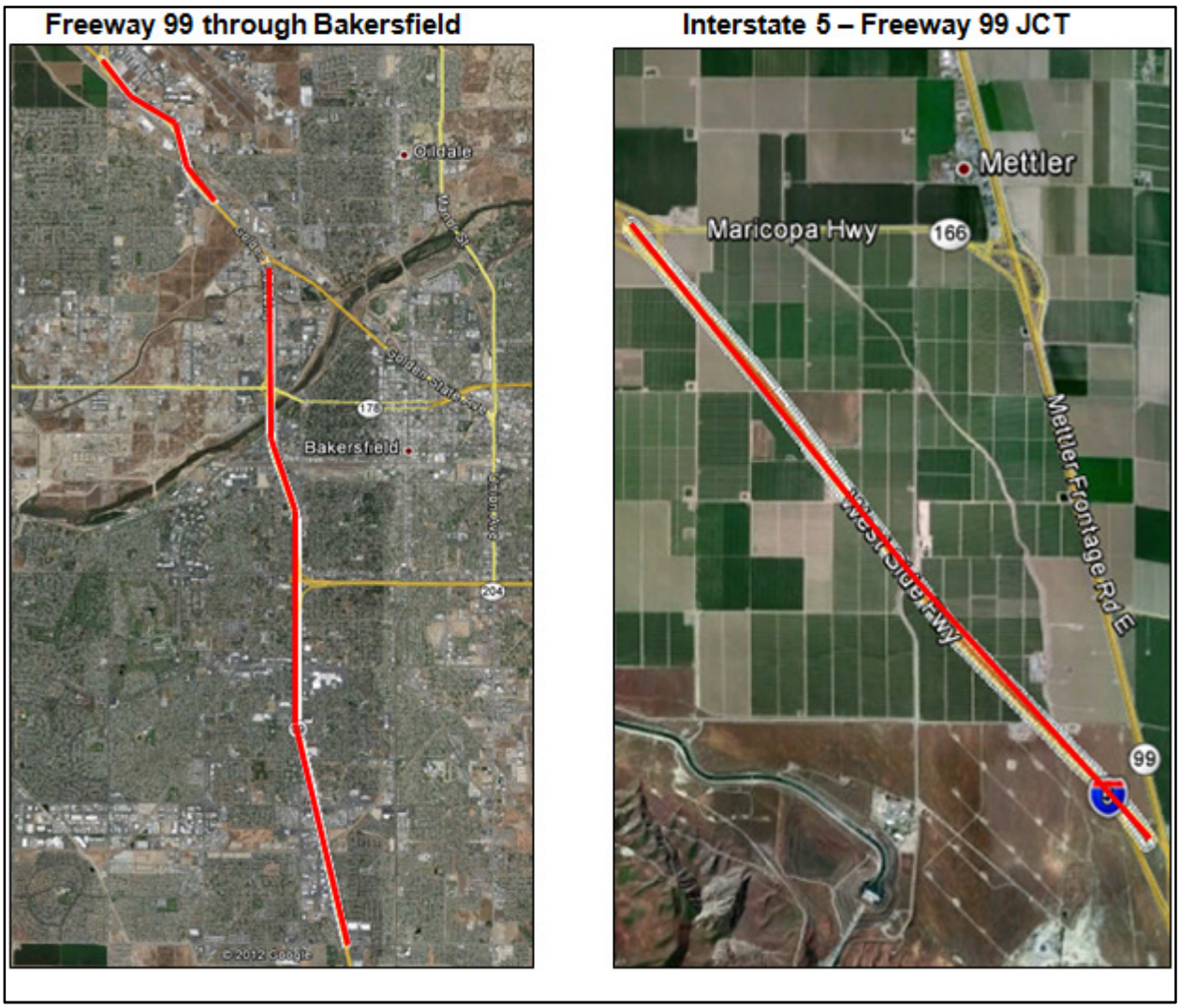
Route	Postmile[5]	Description	Ahead AADT[1]	AADT Rank	AADTT	AADTT Rank	Congestion[2]	FE AADT[6]	FE Rank
99	24.599	BAKERSFIELD, CALIFORNIA AVE	132,000	2	28,188	1		385,692	1
99	22.604	BAKERSFIELD, MING AVE	133,000	1	27,720	2	1	382,480	2
99	23.514	JCT. RTE. 58 EAST	129,000	3	23,400	3		339,600	3
99	21.082	BAKERSFIELD, WHITE LANE	114,500	4	17,500	5		272,000	4
99	25.654	JCT. RTE. 58 W, JCT. RTE. 178 E	102,500	5	18,300	4		267,200	5
99	26.776	BUCK OWENS BLVD	102,500	6	15,904	8		245,636	6
99	19.541	PANAMA LANE	92,600	8	16,240	7		238,760	7
5	15.858[3]	JCT. RTE. 99 NORTH	72,000	11	17,410	6		228,690	8
99	28.556	OIL JUNCTION	78,000	9	14,960	9		212,640	9
99	27.866	OLIVE DRIVE	74,000	10	13,783	11	2	198,047	10

[1] The Total AADT numbers shown apply to the freeway immediately ahead of the postmile.
[2] Congestion data is in annual vehicle delay in thousand hours. Caltrans District 6 (which includes Kern County) has less 2% of the statewide annual vehicle hours of delay.
[3] Postmile 15.858 – Data for AADT was double counting the adjacent road segment. Caltrans has determined that the data is erroneous for this location and requested that the District use 2009 data. The annual traffic volume data shows that state freeway traffic decreased 0.2% in 2010 from 2009.
[4] The Annual Average Daily Traffic (AADT) is defined as the total volume for the year divided by 365 days. Very few locations in California are actually counted continuously. Traffic Counting is generally performed by electronic counting instruments that are moved from location to location throughout the state in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. All traffic volume figures that are listed include traffic in both directions.
[5] Postmile – Each breakpoint is identified by the postmile value corresponding to that point on the freeway. The postmile values increase from the beginning of a route within a county to the next county line. The postmile values start over again at each county line. Postmile values usually increase from South to North or West to East depending upon the general direction the route follows within the state.
[6] The equation FE AADT = (Ahead AADT-AADTT)+(AADTT*10) is defined in the TAD: http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf.

3.2.2 The top 10 road segments

With the exception of the road segment located on Interstate 5 from the Interstate 5/Freeway 166 interchange to the Interstate 5/Freeway 99 interchange, the rest of the top 10 road segments are located along Freeway 99 through Bakersfield. The red lines in Figures 5a and 5b below demark the general location of the top 10 road segments. Gaps between the red lines along Freeway 99 depict locations of road segments that were ranked outside of the top ten and were not considered during the site selection process. This section contains descriptions of the 10 road segments and images of the segments are provided in Appendix B below.

Figures 5a and 5b: General location of the top 10 road segments in the Bakersfield CBSA.



As shown in the TAD Matrix in Appendix A, road segment evaluations were based on many categories of criteria, however some of the categories were more critical to the decision-making process than others. In addition to meteorological considerations, the most important criteria included road design, road structures, and available space for an air monitoring site. Below are descriptions of the top 10 road segments and the reasons why they were acceptable or unacceptable for site consideration.

3.2.2.1 Segment 1: Bakersfield, California Ave

Segment 1 is located along Freeway 99 from California Avenue northward to Rosedale Freeway (JCT RTE 58). The southern and northern ends of segment are above grade and not acceptable for near-road monitor siting while the middle portion of segment is at grade with obstructions and space limitation issues along the segment. Trees align much of the segment and obstruct the air flow, and the above grade portion of the

segment consists of a bridge over a railroad yard and a river. The issues with this segment made it unacceptable for siting a near-road monitor.

3.2.2.2 Segment 2: Bakersfield, Ming Ave

Segment 2 is located along Freeway 99 from Ming Avenue northward to Highway 58 (JCT RTE 58). The entire segment is below grade and characterized by upward slopes on both sides of the Freeway. Additionally, sound walls line the top of the slopes, and the interchange area is covered with mixed vegetation and trees. These characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.3 Segment 3: JCT RTE 58 East

Segment 3 is located along Freeway 99 from Highway 58 (JCT RTE 58) northward to California Avenue. The entire segment is below grade and both sides of the Freeway characterized by upward slopes with trees and ground vegetation on them. Additionally, sound walls line the top of the slopes on the west side of the freeway. These characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.4 Segment 4: Bakersfield, White Lane

Segment 4 is located along Freeway 99 from White Lane northward to Ming Avenue. The southern end of segment is at grade with sound wall limiting space on the east side of the freeway. The remainder of segment is below grade characterized by upward slopes on both sides of the freeway. Trees align most of the segment causing space limitation and air flow obstruction issues. These characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.5 Segment 5: Buck Owens Blvd

Segment 5 is located along Freeway 99 from Rosedale Freeway northward to Airport Drive. The central and southern sections of segment are above grade and serve as an overpass so there are no areas to consider along this stretch of the segment. The northern end of the segment is at grade but parcels that appear acceptable are too close to the slope of the above grade portion of the segment. Additionally, trees and bushes present space limitations and air flow obstructions along the remainder of the at grade portion of the segment. The issues with this segment made it unacceptable for siting a near-road monitor.

3.2.2.6 Segment 6: JCT RTE 204 / Airport Drive

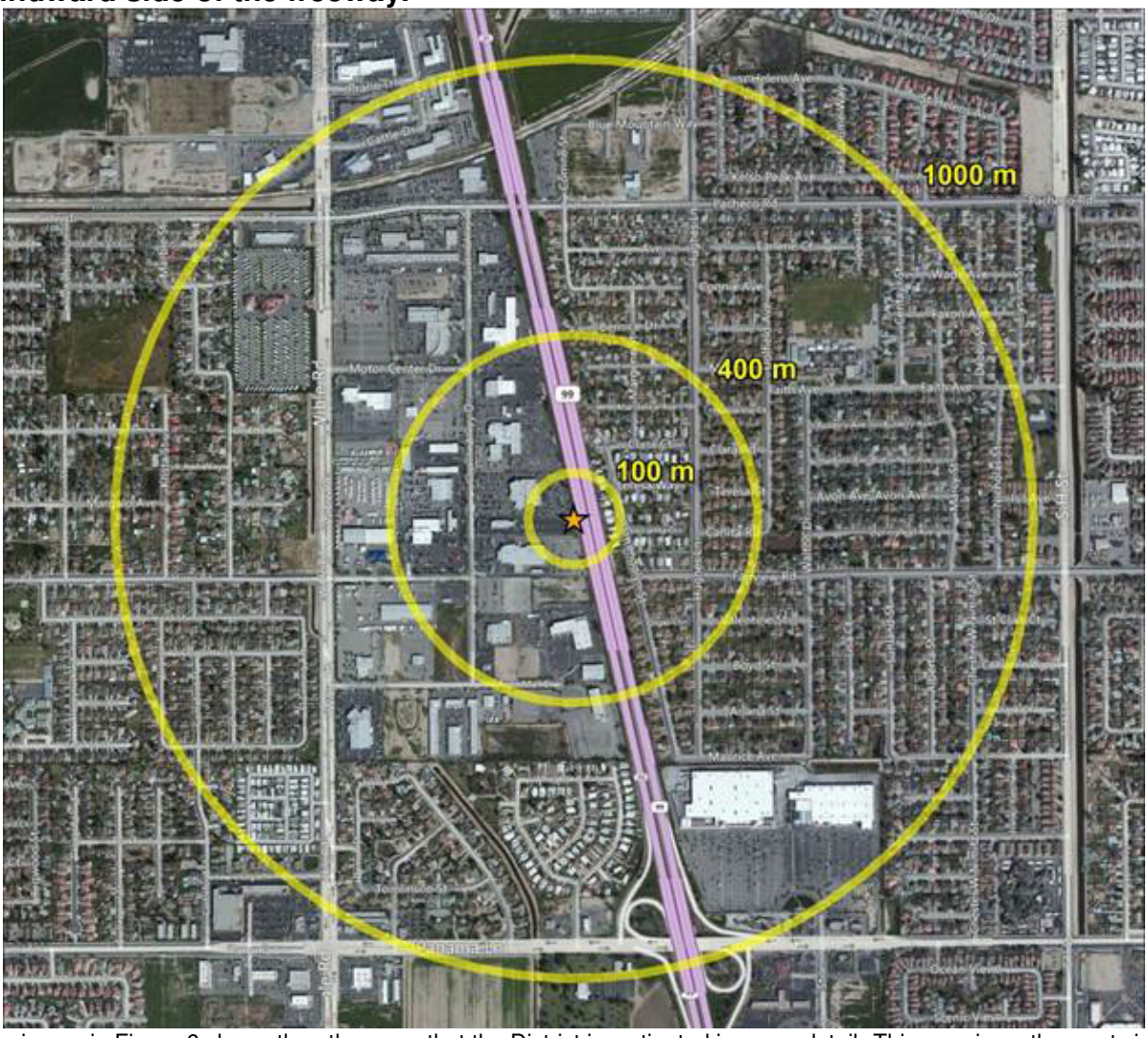
Segment 6 is located along Freeway 99 from Airport Drive northward to Route 204. The southern tip of the segment is slightly above grade due to a small downward slope from the Freeway shoulder to the adjacent frontage road on the east side of the Freeway. The segment then levels to at grade until upward sloping of an overpass at the northern end of the segment creates a below grade area. Trees, bushes, and shrubs align much of the segment causing space limitations and air flow obstruction. The characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.7 Segment 7: Panama Lane

Segment 7 is located along Freeway 99 from Panama Lane northward to White Lane. Figure 6 shows concentric circles depicting 100, 400, and 1,000 meters radii around the parcels in the segment. The 100 meter circle is the maximum extent of a microscale site. These concentric circles show the land uses around the parcels. Any of the parcels adjacent to these would have similar characteristics.

The southern end and the center section of the segment are at grade and the northern end of the segment is above grade. With the exception of southern and northern tips of the segment, a sound wall and trees align the east side of the segment and pose space limitations. On the west side of the segment space intermittent trees along the segment and a sound wall aligning the southern tip of the segment prior to the off-ramp are the only space limitations. The District identified several parcels adequate for building a monitoring station however they were on the wrong side of the freeway with regard to the prevailing wind direction (see sample site in Figure 6). The space limitations and the prevailing wind issue make the segment unacceptable for siting a near-road monitor.

Figure 6: A sample site in Segment 7 that was not pursued because it was on the windward side of the freeway.



The image in Figure 6 shows the other area that the District investigated in some detail. This area is on the west side of the freeway. The meteorological analysis ruled this site out because of the westerly winds. Starting from the north, the east side of the freeway is elevated and gradually comes down to the ground level where a sound wall starts. The sound wall continues all the way to the shopping center. The shopping center is too close to the freeway on-ramp to have a site placed there and they have planted trees along their fence line. Nearly the entire section of the west side of the freeway has space for an air monitoring station, initial contact with these landowners was made and the meteorological analysis removed them from consideration.

3.2.2.8 Segment 8: JCT. RTE. 99 North

Segment 8 is located along Interstate 5 from the Interstate 5 – Freeway 99 JCT northwestward to Maricopa Freeway 166. The road is above grade on the interchange then descends to at-grade for remainder of segment to Maricopa Freeway 166. There are no roadside structures or space limitations along the segment. However, the surrounding land use is agricultural farming so property and not in an urban area. The District removed this segment from consideration because of the lack of population in the area. Given the relatively low population exposure in this rural segment, this

segment may not be representative of near-road exposure levels that occur in more urban areas with higher populations in the Bakersfield CBSA.

3.2.2.9 Segment 9: Oil Junction

Segment 9 is located along Freeway 99 from Norris Road northward to JCT Freeway 65. The southern end of segment is above grade then descends to at grade for remainder of segment. While there are some space limitations along the segment, the District identified a few parcels in the central portion of the segment that are acceptable for near-road monitor placement.

3.2.2.10 Segment 10: Olive Drive

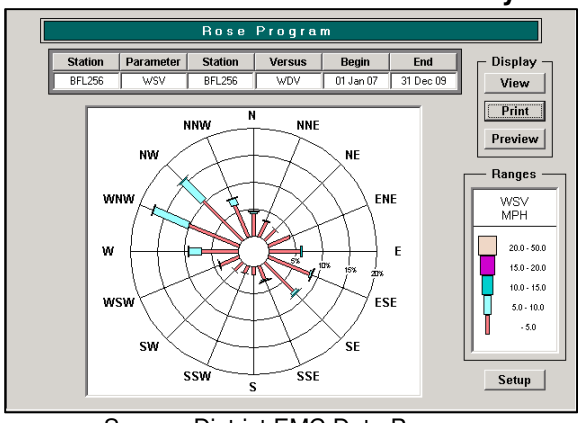
Segment 10 is located along Freeway 99 from Olive Drive northward to Norris Rd. The segment is at grade with intermittent trees and bushes aligning the segment. Space limitations are minimal however the frontage road adjacent to the freeway and the parcels and businesses located on the frontage road present accessibility issues which make the segment unacceptable for siting a near-road monitor.

3.3 Meteorological Considerations

As shown in the wind roses below, local winds in Bakersfield and along Interstate 5 blow primarily from the northwest to the southeast. The Freeway 99 corridor runs through the city of Bakersfield in a north-south orientation. Interstate 5 runs from northwest to southeast along the west side of the Valley to the Freeway 99 interchange located south of Bakersfield. Given that the prevailing winds have a westerly component to them, the District determined that locations on the east side of Freeway 99 and Interstate 5 were the most appropriate for near-road monitor placement and focused our efforts only on the east side of the freeway once the District made this determination. Air pollution from the freeway and the interstate would generally blow away from any monitor located on the west side of the freeway and interstate.

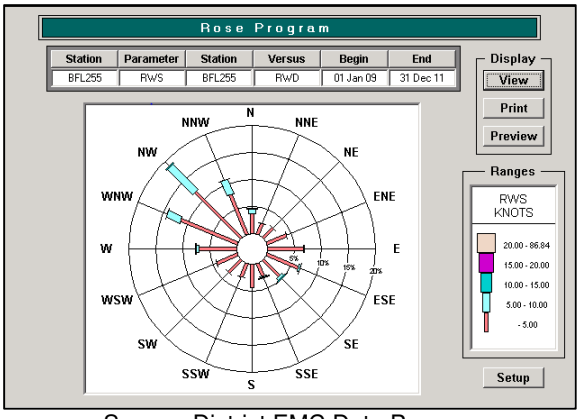
Figures 7a through 7c: Wind Roses

7a. Bakersfield-Golden State Hwy



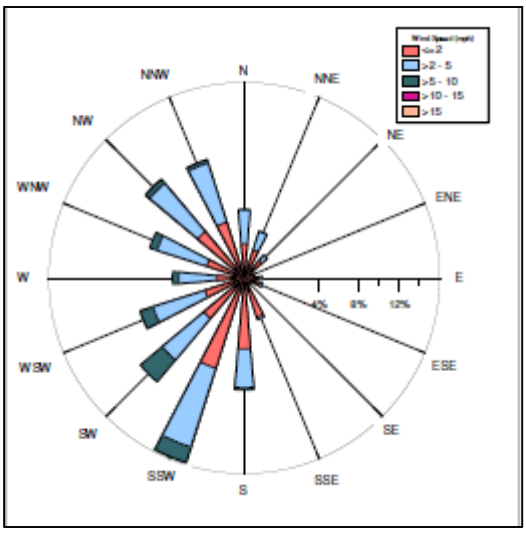
Source: District EMC Data Program

7b. Bakersfield-California Avenue



Source: District EMC Data Program

7c. Mettler Station AU491



Source: University of Utah Meso West
http://mesowest.utah.edu/cgi-bin/droman/download_ndb.cgi?stn=KSLC

3.4 Terrain through Bakersfield CBSA

The terrain through Bakersfield CBSA is generally flat couple of bluffs caused by rivers. The Freeway 99 is generally at grade at the northern and southern limits of the city of Bakersfield and either elevated or below grade in the urban area of city. The Interstate 5 segment is flat with farm fields on either side. There are sloughs and other low areas along this part of Interstate 5. Figure 8a shows a satellite image of the area under consideration in the city of Bakersfield and Figure 8b shows a satellite image of the terrain of the Interstate 5 segment.

Figure 8a: Map of the Bakersfield Metropolitan Area

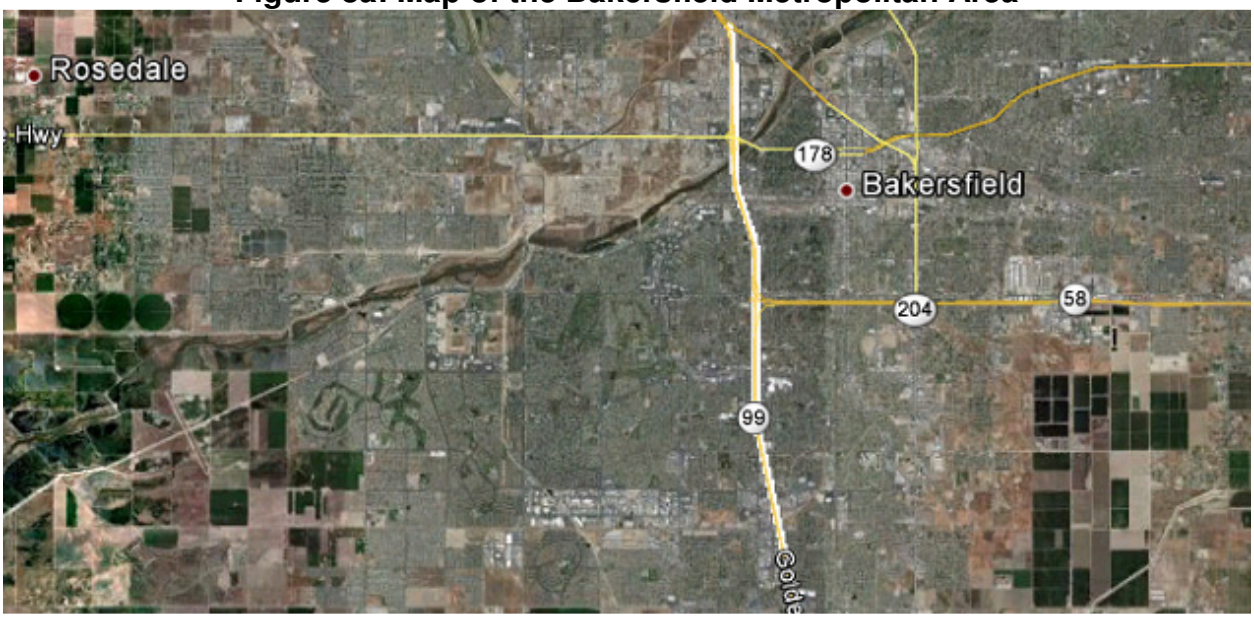
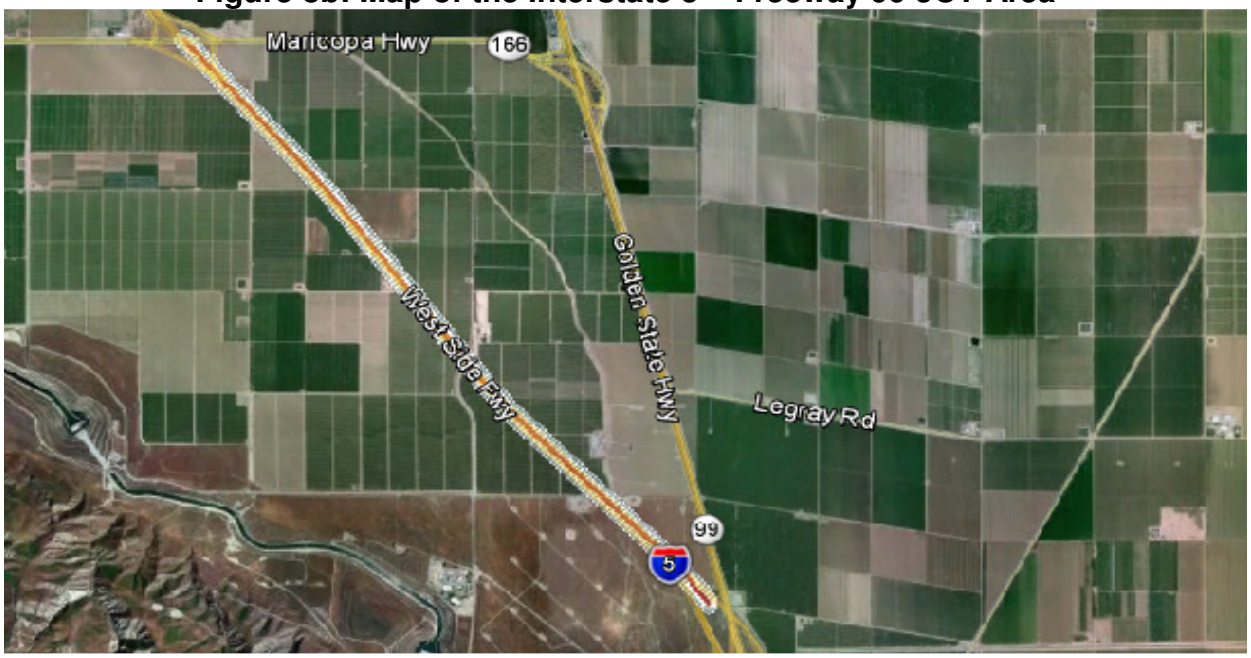


Figure 8b: Map of the Interstate 5 – Freeway 99 JCT Area



3.5 Spatial scales and population exposure

As stated above, NO_2 near-road sites are intended to be microscale sites. This means that these sites measure representative concentrations within 100 meters. Representative concentrations measured over areas greater than this do not fit the definition of a microscale site. The TAD states that the highest concentrations can be found within 20 meters of the freeway, so the District focused efforts on locations that can handle an air monitoring site within 20 meters. Additionally, the required range for

the station's probe height is 2 to 7 meters in order to capture the highest NO_2 concentrations. While the preferred probe height is 2 meters, it will not be possible due to the structure and orientation of the monitoring station so, the District will place the probe as close to the 2 meter height as possible.

As referenced above, population exposure as one of the criteria that should be considered during the site selection if you have multiple acceptable sites in the same road segment. For the Bakersfield CBSA there are only two segments that have potential multiple acceptable sites, segments 7 and 9. Segment 7 sites were eliminated due to wind direction and only one landowner in segment 9 was willing to negotiate a lease with us.

Segment 8 was removed from consideration because it was not in an urban area and there were no population sources nearby. The District believes that people that are living, working, or commuting daily within and adjacent to the Bakersfield metropolitan area will have a more significant exposure than those using the segment of Interstate 5.

Maps showing the locations that the District investigated in some detail are shown in Section 3 and Section 4. The maximum 100 meter radius of a microscale site is shown for reference. The 400 and 1,000 meter radii are shown for informational purposes.

3.6 Correspondence with property owners

The District found 19 acceptable parcels along Freeway 99 so letters of interest were sent to each of the property owners. Nine responses were received, however only seven of the property owners expressed interest. The District then began making direct contact with the seven interested land owners. Upon meeting with the representative of a landowner in Segment 7, the District discovered that the wind direction would be a problem and that lead to the elimination of all locations on the west side of the freeway. This issue left only three potential locations in Segment 9 from which to choose. One of the three potential sites would need extensive changes made to the property in order to accommodate an air monitoring station so that site was deemed infeasible. Of the two remaining potential sites, one of the landowners stopped talks with the District after reading the draft lease, but the other was willing to negotiate a lease so the process was able to move forward.

4.0 Final Site Selection

After everything was considered, the road segment with the 9th highest FE-AADT located at 2809 Unicorn Road was selected. The selected site meets the siting criteria listed in the CFR, and is also acceptable for accommodating placement of a PM2.5 and other air pollution analyzers in the future.

Figure 9 is a map of the final site selection located on Unicorn Road in Segment 9, and. The concentric circles depict 100, 400, and 1,000 meters radii around the parcels in the segment. The 100 meter circle is the maximum extent of a microscale site. These

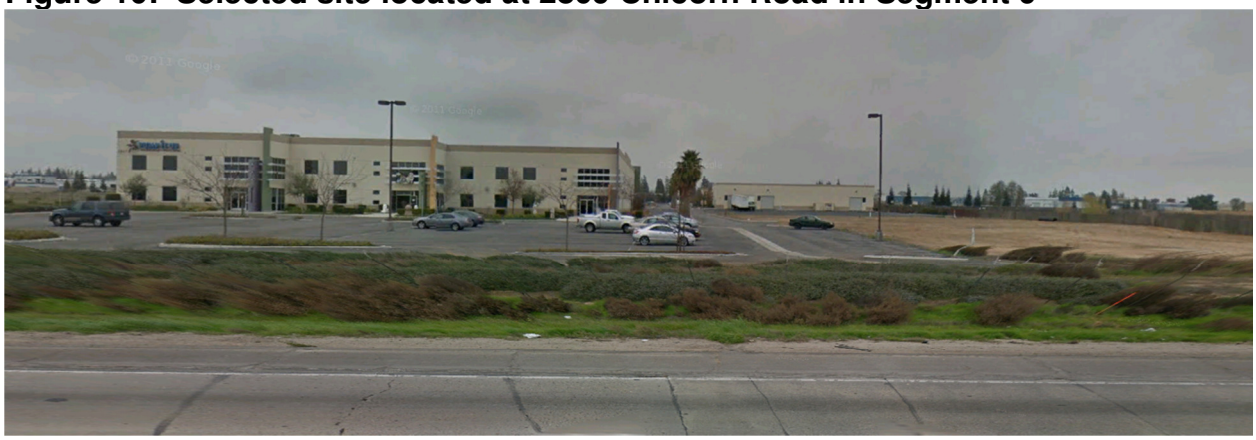
concentric circles show the land uses around the parcels. Any of the parcels adjacent to these would have similar characteristics.

Figure 9: Final Section—2809 Unicorn Road

The image in Figure 9 shows the location the District chose to locate the NO_2 near-road site in Bakersfield CBSA. It is in segment 9 and the landowner is willing to work with the District. It is on the west side of the freeway and is in a light commercial area. There is a subdivision nearby on the east side of the freeway.

Figure 10 below shows a roadside view of the selected site for the NO_2 near-road air monitoring station. The site will be as close to the freeway as practicable. The vacant lot to the right and the adjacent parking lot with the building are on the same parcel.

Figure 10: Selected site located at 2809 Unicorn Road in Segment 9



APPENDICES

Appendix A —Traffic Data Tables

Below is the list of the top 30 segments in the Bakersfield CBSA based on Caltrans data.

Table 1: Kern County Top Road Segments by Fleet Equivalent AADT[5]

Route	Postmile[6]	Description	Ahead AADT[2]	AADT Rank	AADTT[1]	AADTT Rank	Congestion[3]	FE AADT[7]	FE Rank
99	24.599	BAKERSFIELD, CALIFORNIA AVE	132,000	2	28,188	1		385,692	1
99	22.604	BAKERSFIELD, MING AVE	133,000	1	27,720	2	1	382,480	2
99	23.514	JCT. RTE. 58 EAST	129,000	3	23,400	3		339,600	3
99	21.082	BAKERSFIELD, WHITE LANE	114,500	4	17,500	5		272,000	4
99	25.654	JCT. RTE. 58 W, JCT. RTE. 178 E	102,500	5	18,300	4		267,200	5
99	26.776	BUCK OWENS BLVD	102,500	6	15,904	8		245,636	6
99	19.541	PANAMA LANE	92,600	8	16,240	7		238,760	7
5	15.858^	JCT. RTE. 99 NORTH	72,000	11	17,410	6		228,690	8
99	28.556	OIL JUNCTION	78,000	9	14,960	9		212,640	9
99	27.866	OLIVE DRIVE	74,000	10	13,783	11	2	198,047	10
58	53.519	SOUTH CHESTER AVE	72,000	12	13,770	12		195,930	11
58	54.419	SOUTH UNION AVE	71,000	13	13,860	10		195,740	12
99	27.046	JCT RTE 204/AIRPORT DRIVE	102,500	7	10,294	21		195,146	13
58	55.404	COTTONWOOD RD	70,000	14	13,084	13		187,756	14
5	0.000	LOS ANGELES/KERN CO LINE	70,000	15	13,020	14		187,180	15
58	53.387	H ST	70,000	16	11,750	15		175,750	16
58	52.360	BAKERSFIELD, S. JCT RTE 99	68,000	20	11,487	16		171,383	17
5	5.020	FORT TEJON/DIGIER RD	69,000	17	11,250	17		170,250	18
5	13.523	WHEELER RIDGE RD	69,000	18	11,000	18		168,000	19
5	1.612	LEBEC RD	69,000	19	10,890	20		167,010	20
178	2.009	BAKERSFIELD, JCT. RTE. 204	67,000	21	10,962	19		165,658	21
99	17.500	JCT. RTE. 119 WEST	66,500	22	10,500	*		161,000	22

Table 1: Kern County Top Road Segments by Fleet Equivalent AADT[5] (continued)

178	0.360	BAKERSFIELD, OAK ST	62,000	24	10,002	22		152,018	23
99	29.878	JCT. RTE. 65	61,000	25	9,723	23		148,507	24
99	30.532	SEVENTH STANDARD RD	62,500	23	9,000	*		143,500	25
58	56.410	MT. VERNON AVE	60,000	26	8,473	24		136,257	26
178	3.402	BAKERSFIELD, BEALE AVE	56,000	28	7,280	25		121,520	27
99	52.450	POND RD	53,000	29	6,891	26		115,019	28
99	50.410	MC FARLAND, ELMO HWY	53,000	30	6,749	27		113,741	29
99	36.523	CAWELO, LERDO FREEWAY	59,500	27	6,000	*		113,500	30
178	0.000	JCT. RTES. 99/58	52,000	31	6,640	28		111,760	31

[1] Road segments with no Truck AADT (AADTT) are given substitution with the following:
Route 99:

- PM 17.500 using 2/3 of adjacent segment Panama's value = value of 10,500
- PM 30.532 using JCT. RTE. 65, the segment had similar AADTT and was estimated at 9,000
- PM 36.523 using JCT. RTE. 65, the segment had a large estimated exit volume of 6,000 at Lerdo Hwy

[2] The Total AADT numbers shown apply to the freeway immediately ahead of the postmile.

[3] Congestion is in annual vehicle delay in thousand hours. Caltrans District 6 (which includes Kern County) has less than 2% of the statewide annual vehicle hours of delay.

[4] PM 15.858 - Data for AADT was double counting the adjacent road segment. Caltrans has determined that the data is erroneous for this location and requested that the District use 2009 data. The annual traffic volume data shows that state freeway traffic decreased 0.2% in 2010 from 2009.

[5] The Annual Average Daily Traffic (AADT) is defined as the total volume for the year divided by 365 days. Very few locations in California are actually counted continuously. Traffic counting is generally performed by electronic counting instruments that are moved from location to location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. All traffic volume figures listed include traffic in both directions.

[6] Postmile - Each breakpoint is identified by the postmile value corresponding to that point on the freeway. The postmile values increase from the beginning of a route within a county to the next county line. The postmile values start over again at each county line. Postmile values usually increase from South to North or West to East depending upon the general direction the route follows within the state.

[7] The equation FE AADT = (Ahead AADT-AADTT)+(AADTT*10) is defined in the TAD: http://www.epa.gov/ttn/amtic/nearroad.html

Data source:

Caltrans - All Vehicle http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2010all/2010_Traffic_Volumes.pdf
Caltrans - Truck Data http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/truck2010final.pdf
Caltrans - Congestion http://www.dot.ca.gov/hq/traffops/sysmgtpl/MPR/pdfs/MPR2009.pdf
Data accuracy of Caltrans AADT for 100,000 vehicles is approximately ± 6%

Appendix B—Site Details

Below are the site details for the selected site and the site that was ruled out because of meteorology.

Table 2: Site Details Matrix

Site/Segment Parameter	Segment 7 Car Dealership	Segment 9 2809 Unicorn Rd
Road segment name	Segment 7	Segment 7
Road segment end points	Panama Lane to White Lane	Norris Rd to JCT Hwy 65
Road type	Freeway	Freeway
Interchanges	None	None
Frontage roads	None	None
Roadside design	At grade	At grade
Terrain	Flat	Flat
Current road construction	None	None
Future road construction	Not aware of any	Not aware of any
Roadside structures	None	None
AADT	95,600	78,000
HD counts	16,240	14,960
FE-AADT	238,760	212,640
Congestion information	No congestion	No congestion
Infrastructure	At the street	At the Street
Surrounding land use	Light Commercial/Industrial	Light Commercial
Nearby sources	Freeway	Freeway
Meteorology	Unacceptable	Acceptable
Population exposure	Only parcel in segment	Only parcel in segment
Available space – site footprint	1000 square feet	1000 square feet
Safety features	None	Will need to be installed
Property type	Private Property	Private Property
Property owner	Not Applicable	
Likelihood of access	Easy access	Easy access
Other details/local knowledge	Landowner willing to work with us	Landowner willing to work with us

Appendix C—Maps of Segments

Beginning on the following page, aerial maps show the top 10 segments, their end points in detail, and the surrounding land use of each segment.

Segment 1

This segment is located along Freeway 99 from California Avenue northward to Rosedale Freeway (JCT RTE 58).

Source: Google Earth

Segment 2

This segment is located along Freeway 99 from Ming Avenue northward to Highway 58 (JCT RTE 58).

Source: Google Earth

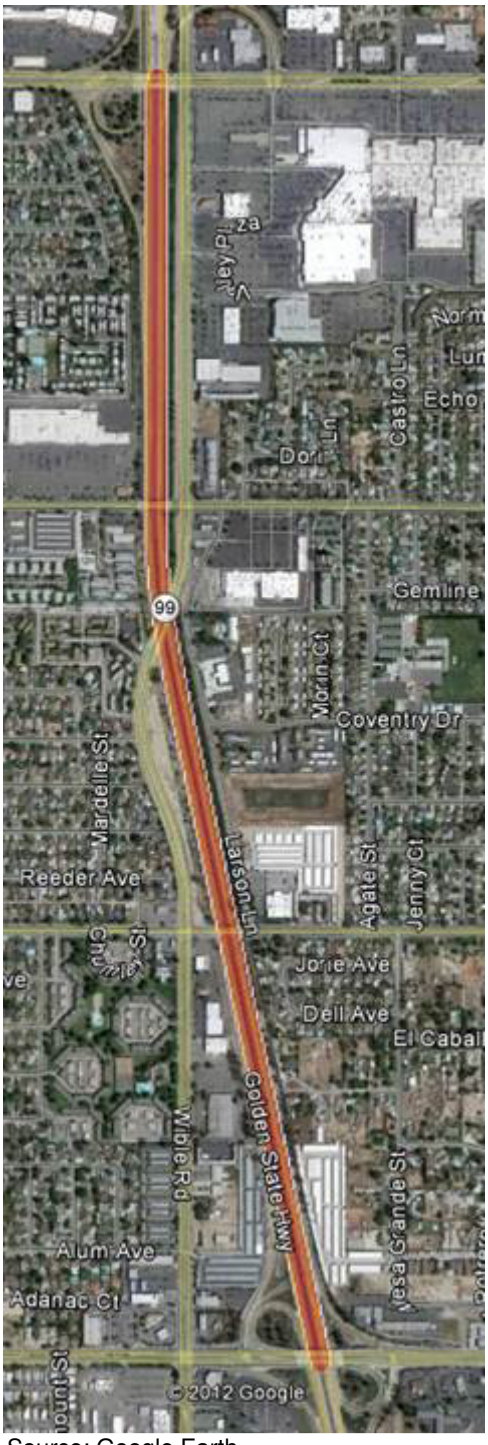
Segment 3

This segment is located along Freeway 99 from Highway 58 (JCT RTE 58) northward to California Avenue.

Source: Google Earth

Segment 4

This segment 4 is located along Freeway 99 from White Lane northward to Ming Avenue.



Source: Google Earth

Segment 5

This segment is located along Freeway 99 from Rosedale Freeway northward to Airport Drive.

Source: Google Earth

Segment 6

This segment is located along Freeway 99 from Airport Drive northward to Route 204.

Source: Google Earth

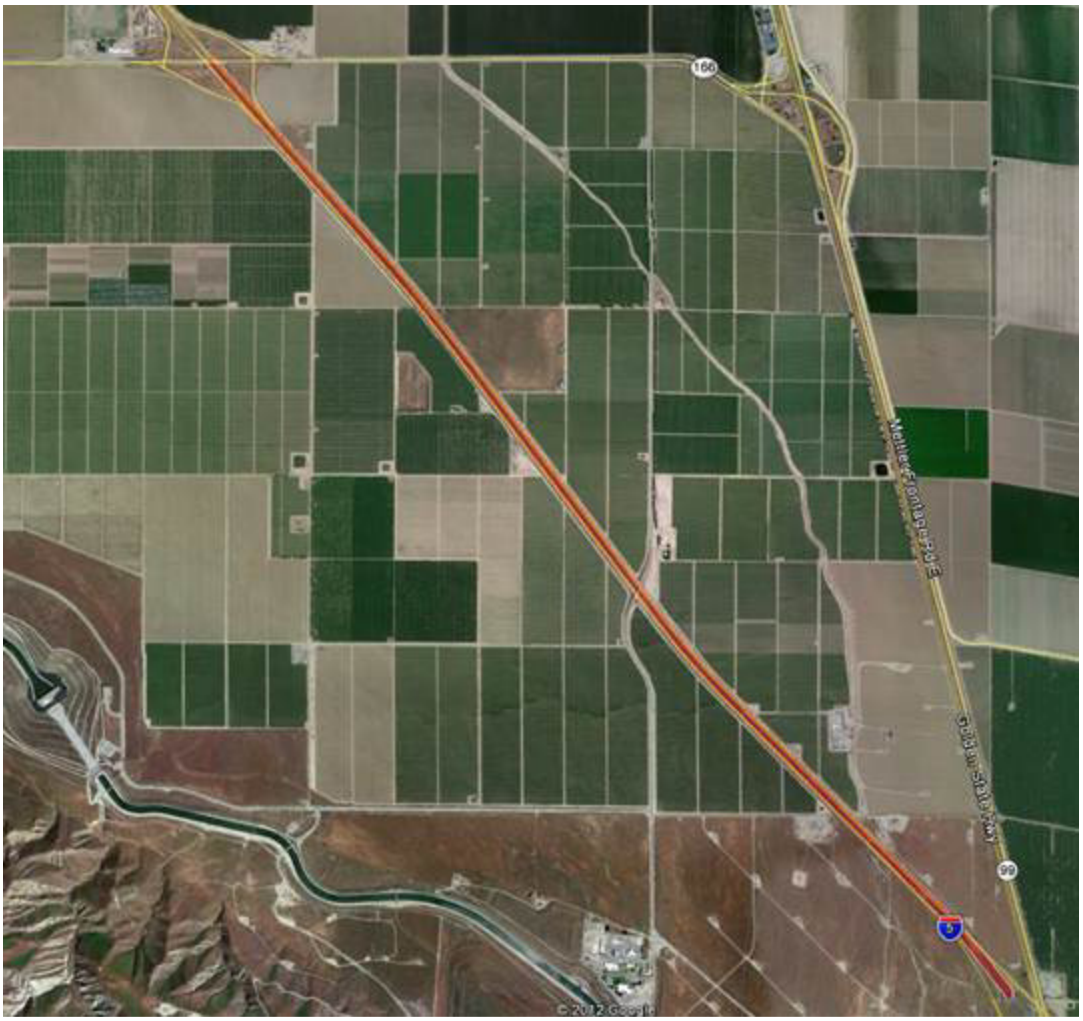
Segment 7

Segment 7 is located along Freeway 99 from Panama Lane northward to White Lane.

Source: Google Earth

Segment 8

Segment 8 is located along Interstate 5 from the Interstate 5 – Freeway 99 JCT northwestward to Maricopa Freeway 166.



Source: Google Earth

Segment 9

This segment is located along Freeway 99 from Norris Road northward to JCT Freeway 65.

Source: Google Earth

Segment 10

This segment is located along Freeway 99 from Olive Drive northward to Norris Rd.

Source: Google Earth

APPENDIX E:

NO_2 Near-Road Monitoring Station Siting Requirements and Selection Process for the Fresno Core Based Statistical Area

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1. INTRODUCTION

In 2010, the U.S. Environmental Protection Agency (EPA) established a new 1-hour standard and new minimum monitoring requirements for nitrogen dioxide (NO_2). Additionally, EPA promulgated new NO_2 monitoring network design requirements which consist of three distinct NO_2 air monitoring networks. The first network is the near-road monitoring network which is aimed at capturing the higher NO_2 concentrations that occur near roadways. The second network is the area-wide monitoring network which will represent NO_2 concentrations characteristic of large neighborhood or urban areas. The third network, which is called the Regional Administrator Required Monitoring Network, requires Regional Administrators to work with states to site a network of 40 NO_2 monitors throughout the nation in locations aimed at protecting susceptible and vulnerable communities.

The monitoring requirements for the first two monitoring networks mentioned above for the new NO_2 1-hour standard are based upon the population of Core Based Statistical Areas (CBSAs) as well as the annual average daily traffic (AADT) counts. The intent of the NO_2 near-road network is to place the monitoring stations near major roads where maximum hourly NO_2 concentrations are expected. As noted in Section 4.3 of Appendix D of 40 CFR Part 58, one microscale near-road NO_2 monitoring station is required in each CBSA with a population of 500,000 or more. Data such as traffic volumes, fleet mix, roadway design, traffic congestion patterns, and characteristics such as local terrain or topography, and meteorology are among the criteria that must be considered when determining areas which have the highest NO_2 concentrations. Additionally, population exposure, near-road siting criteria, safety, surrounding land use, and other factors are also considered during the location selection process. NO_2 monitors under this new standard were originally required to be operational by January 1, 2013; however on March 7, 2013, EPA amended on to the rule that moves this date to January 1, 2017. To assist agencies with the siting selection process, EPA provided the Near-Road NO_2 Monitoring Technical Assistance Document (TAD) which outlines recommendations and ideas on how to successfully meet the revised NO_2 near-road monitoring requirements[1].

EPA requires air monitoring agencies to submit a report which describes the site selection process for each NO_2 near-road monitoring station that will be established. The San Joaquin Valley Air Pollution District (District) is required to install four near-road air monitoring stations, one in each of the following CBSAs: Stockton, Modesto, Fresno, and Bakersfield. Accordingly, a report of the site selection process will be submitted by the District for each of the aforementioned stations.

[1] Near-Road NO_2 Monitoring Technical Assistance Document (TAD) – A document that provides state and local air agencies with recommendations and ideas on how to successfully implement near-road NO2 monitors in order to meet the NO_2 minimum monitoring requirements that were revised in 2010. http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf

With considerable assistance provided by the California Air Resources Board (CARB), the District carried out a detailed process of selecting a site for a near-road monitoring station in the Fresno CBSA. This report describes the site selection process conducted by the District and CARB for the purpose of establishing a new NO_2 near-road monitoring station.

2. SITE SELECTION PROCESS

The District conducted a site selection process that involved assistance from the CARB in gathering traffic count data, and determining candidate road segments and the positive and negative attributes of each. Road design, and wind direction associated with each road segment were also considered during the process. Once the acceptable land parcels were prioritized, the District began corresponding with the property owners in the highest ranked segment and is now negotiating a lease with a landowner who is willing to have a near-road monitoring site on his property. In addition to following the guidance provided in the TAD, the District also considered PM2.5 so the site could potentially accommodate a PM2.5 monitor in the future.

2.1 Traffic Count Data

In order to determine the road segments that theoretically have the highest NO_2 concentrations, CARB and the District assessed all available traffic count data available from the California Department of Transportation (Caltrans) for Fresno County. The data included AADT, Fleet mix, and congestion data. Following the guidance found in the TAD, the District and CARB calculated FE-AADT to determine and rank the road segments.

2.1.1 AADT

Traffic counts represent AADT which is the total traffic volume for one year divided by the number of days in the year. AADT usually depicts the traffic volume along a given road segment. All traffic count figures listed include traffic in both directions. Ahead AADT typically refers to traffic north and east of a traffic count location, and Back AADT typically refers to traffic south and west of a traffic location. To avoid overlapping data, the Ahead AADT was used in the District's site selection process.

Caltrans typically collects traffic counts on freeways. The majority of continuous traffic count sampling is conducted by moving the electronic counting instruments from location to location throughout the state. Traffic counts are adjusted estimates of AADT which compensate for seasonal influence, weekly variation, and other variables.

2.1.2 AADTT

Truck traffic is classified by the number of axles trucks have. For example, 1½ -ton trucks with dual rear tires are included in the two-axle class but pickups and vans with only four tires are not. Annual average daily truck traffic (AADTT) is the total truck traffic volume for one year divided by the number of days in the year. Continuous truck count sampling consists of vehicle classification counts that are conducted throughout California. This program includes partial day and 24-hour counts on high volume, urban freeways, and 7-day counts on low volume, rural freeways. Truck counts are adjusted estimates of AADTT which compensate for seasonal influence, weekly variation, and other variables.

2.1.3 Fleet Mix

Fleet mix pertains to a specific count or percentage of the total volume of traffic and differentiates between light-duty (LD) vehicles and heavy-duty (HD) vehicles. Differences between LD and HD vehicles include the type of fuel they run on (gasoline vs. diesel), and the vehicle's weight, length, or number of axles. NO_2 emissions vary for all vehicles depending on vehicle type; load, speed, and freeway grade, however, diesel fueled HD vehicles typically emit far higher amounts of NO_2 than do gasoline fueled LD vehicles. Fleet mix is important in determining where the emission differences occur.

2.1.4 Fleet Equivalent AADT

FE-AADT is a metric[2] that accounts for total traffic volume and fleet mix in order to compare road segments, especially when the amount of total traffic volume and HD vehicle volume on those road segments varies. FE-AADT gives a better indication of estimated NO2 emissions than does AADT. The FE-AADT values shown in Table 1 below were determined using Ahead AADT and AADTT in the equation below:

$$\text{FE-AADT} = (\text{Ahead AADT} - \text{AADTT}) + (\text{AADTT}*10)$$

This equation gives truck traffic 10 times the weight of non-truck traffic in determining rank because the NO_2 emissions are approximately 10 times as great as non-truck traffic. The segments with the highest levels of NO_2 should be those with the greatest truck traffic.

2.1.5 Postmile

Caltrans has identified Postmile values as breakpoints on Freeways that usually increase from South to North or West to East depending on the direction the route follows within the county. Postmile values increase from the beginning of the route to the next county line and then start over. The total AADT values shown in the tables below apply to the freeway immediately ahead of the Postmile.

[2]For more information on the equation that defines FE-AADT, go to http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf.

2.1.6 Traffic Congestion

Traffic congestion can lead to stop-and-go traffic conditions and per-vehicle emissions may increase as a result. A notable and constant reduction in speed between two points on a freeway is defined as a bottleneck. The congestion values shown the tables below are annual vehicle hourly delay (AVHD) in thousand hours and represent the sum of the delay from the morning and evening peak periods and from the midday period.

2.2 Physical Characteristics of Near-Road Sites

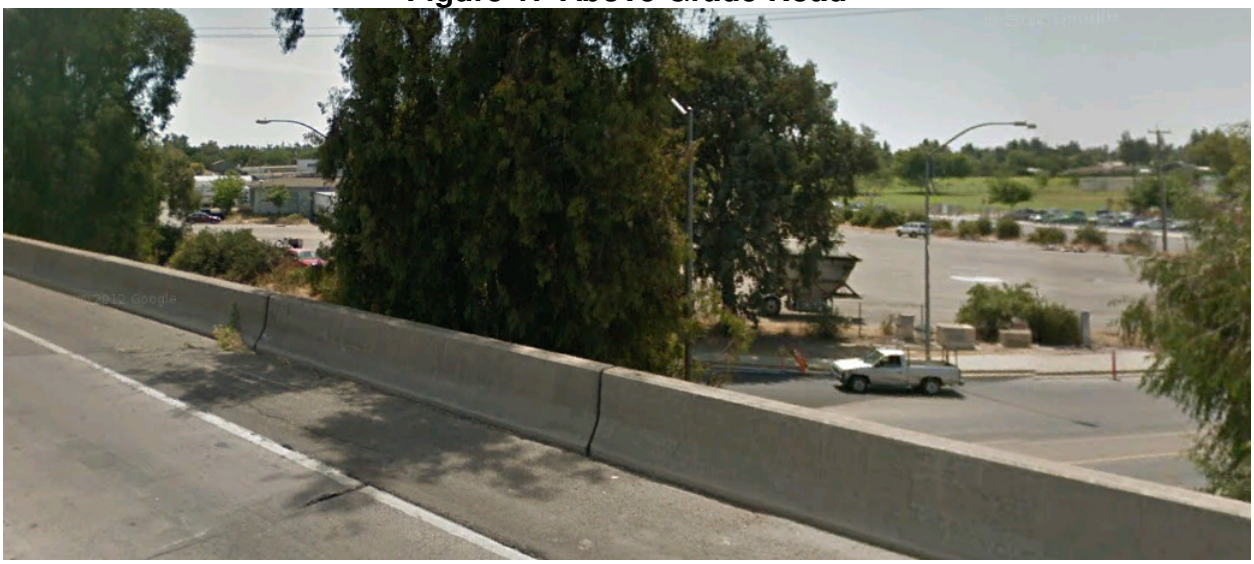
The physical characteristics of candidate road segments must be considered in order to determine which segments are adequate for near-road monitor placement. The characteristics to be assessed and accounted for include roadway design, roadside structures and vegetation, terrain, and meteorology.

2.2.1 Roadway design or configuration and clear zones

Road design or configuration is important in determining acceptable locations for near-road monitors because it can impact the dispersion and transport of pollutants. Road designs can be characterized as above-grade, below-grade, or at-grade. Additionally, road designs that contain features such as interchanges and toll plazas can influence vehicle acceleration and deceleration rates which in turn affect pollutant concentrations and plumes.

Above-grade or elevated road configurations can be open or have solid fill material beneath them (see Figure 1). Roads that are open underneath are subject to wind from all directions, increased dispersion, turbulence, and dilution of the air as it flows over and under the road. These affects can cause pollutant concentrations to be lower downwind of the elevated roadway. Roads that are over solid fill material can have winds normal with the road and forces that keep the traffic plume near at the surface while others can cause the plume to loft above the ground when it meets the vertical filled material or wall beneath.

Figure 1: Above Grade Road



Source: Google Earth

Roads that are configured below-grade can have vertical or sloped walls that facilitate the funneling of air parallel to the road (see Figure 2). As the air streams through the corridor it can cause pollutant plumes to loft and be carried away as the air flows through, up, and out of the below-grade roadway.

Figure 2: Below grade with up-slope

Source: Google Earth

Roadways that are generally at the same elevation as the immediate surrounding terrain are referred to as at-grade roadways (see Figure 3). Other than structures or obstacles near the roadside, at-grade roadways pose the least amount of impact on pollutant dispersion. As stated in the TAD, at-grade or near at-grade roads are the most desirable road configurations for siting near-road monitors.

Figure 3: At grade roadway

Source: Google Earth

As stated above, EPA requires that NO_2 near-road monitoring stations be placed in areas representative of high NO_2 levels. According to the TAD, road areas that go uphill or downhill, and roads that contain on-ramps and off-ramps, interchanges, or unique features such as toll plazas, and tunnel entrances and exits should not be considered for NO_2 near-road monitor placement because they are designed for rapid vehicle accelerations and decelerations (see examples in Figure 4). These areas and road designs do not produce representative NO_2 concentrations. The most suitable place to locate an NO_2 near-road monitoring station is one that is at grade with immediate flat surrounding terrain.

Figure 4: Junction, interchange, on-ramp, and off-ramp

Source: Google Earth

Clear zones denote roadside areas that are available to drivers who need to pull over and stop safely or regain control if a vehicle leaves the road. Such zones extend from the road's outside traffic edge to an obstacle further off the road. The roadway's traffic volume, design speeds, and the slope of the terrain adjacent to and beneath the

roadway are used to determine the width of the clear zone. Near-road monitoring stations are placed outside of clear zones.

2.2.2 Roadside structures and vegetation

Roadside structures such as sound walls or noise barriers can affect dispersion by blocking it or causing turbulence which can mix pollutants. Roadside structures can channel pollutants downwind and inhibit or reduce normal dispersion along the roadway. Vegetation can also affect pollutant transport and dispersion by mixing and diluting air as it blows through the branches and leaves of trees, and by blocking wind and slowing dispersion down. Additionally, pollutant concentrations in traffic plumes can decrease when particulate pollutants get deposited onto the surfaces of branches and leaves. Locations that are void of roadside structures and vegetation are therefore more acceptable for near-road monitor placement.

2.2.3 Terrain

Local terrain can affect dispersion and pollutant transport so it is important to have a good understanding of the large scale terrain features that characterize the air basin when considering locations for near-road monitor placement. For example, valleys may be more susceptible to high NO_2 concentrations because the surrounding terrain and temperature inversions tend to inhibit dispersion whereas open terrain areas allow for better air flow which can aid in lower pollutant concentrations.

2.2.4 Meteorology

The TAD states that evaluating historical meteorological data can be helpful in determining locations that may be directly impacted by traffic emissions from particular road segments due to local winds. Understanding the local meteorology can also indicate which side of a road segment may be more impacted by the traffic emissions. Research studies have shown that locations very close to the roadway on the downwind side of a given road segment can adequately capture peak pollutant concentrations.

2.3 Spatial scales and population exposure

40 CFR Part 58 Appendix D requires that the spatial scale of a NO_2 near-road air monitoring site be classed as a microscale site. Microscale sites measure peak concentrations in an area with of a radius 100 meters. Concentrations decrease significantly as distance increases outside of this area. This being the case, EPA requires near-road monitoring stations to be placed as close as practicable but no further than 50 meters from the target road segment. Additionally, EPA requires that the sampling inlet be within 2 to 7 meters from the road's surface.

As specified in 40 CFR Part 58 Appendix D, Section 4.3.2(a)(1), state and local air monitoring agencies shall consider the potential for population exposure when making their final near-road monitoring site selections when there are multiple acceptable sites in the same ranked segment.

2.4 Safety

As specified in the TAD, NO_2 near-road monitoring stations must be safely sited for motorists traveling the roadway and for the monitoring station operators. The sites are required to be safely and legally accessible to station operators and pose no safety hazards to drivers as well as people walking or living nearby. In addition, some sites will require the installation of permanent safety barriers, such as guardrails.

3. SITE SELECTIONS FOR FRESNO CBSA

3.1 Introduction

As stated in Section 2.0 above, the District started with traffic count data to select the freeway segments that were to be considered for a site. Meteorology, terrain, road structures, parcels with locations acceptable for building a site on, and landowner willingness to host a site on their property all played a role determining site selection. The segments through the Fresno CBSA were generally intermittent rather than continuous and it became apparent that the most of the ranked segments near the urban core did not have any available land for constructing a site. These segments in central Fresno were typically above or below grade with mixed vegetation and trees which prevented placement of the site close enough to the edge of the freeway to capture peak values. In fact, the District found that there are only a few locations along the top ten segments that could meet all of EPA's siting criteria.

At this juncture, the District decided to contact all landowners of parcels with acceptable locations in the top ten segments and prioritize working with the landowners who responded positively within the highest ranked segments before moving further down the list.

The District process in locating a NO_2 near-road site can be summed as follows:

- Rank all road segments
- Determine the top 10 segments
- Find locations were a site can be built (acceptable locations or parcels)
    - Take into account near-road exposure.
    - Take into account meteorology, structures, obstacles, grade, and other criteria.
- Contact property owners by sending a letter
- Contact those property owners that are willing to work with us starting with those in the highest ranked segments
- Negotiate a lease with a willing property owner in the highest ranked segment
- Present site selection to the Governing Board for approval, and include the opportunity for public comments.

3.2 Traffic Count Data

Traffic count data determined which road segments would likely have the highest NO_2 concentrations in the Fresno CBSA. Because truck traffic accounts for the highest NO_2 emissions, the road segments were ranked by Fleet Equivalent Annual Average Truck Traffic (FE-AADT) counts. Areas that did not have recent truck traffic counts had to be estimated.

Even though the percentage of statewide annual vehicle hours of delay caused by traffic congestion is far less in the San Joaquin Valley than in other areas of the state, the District included traffic congestion with the traffic count data as per the requirements outlined in the TAD. Caltrans District 6, which includes the Fresno CBSA, has less than 2% of the statewide annual vehicle hours of delay due to traffic congestion in the entire district. The highest ranking bottleneck locations where freeway speed dropped and remained below 60 mph are shown in Table 1 in below. Because so little traffic congestion occurs in the Fresno CBSA, congestion did not factor into site selection.

3.2.1 Road Segment Ranking

After the traffic data was examined, each road segment was ranked by FE-AADT from the highest traffic count to the lowest for the CBSA. The list was narrowed to the top 32 road segments (see Appendix A) then reduced to the top 10 segments (see Table 1 below). District staff surveyed the areas within each segment, and identified which locations could support a near-road monitoring station.

Table 1: Fresno County Top Road Segments by Fleet Equivalent (AADT)[4].

Route	Postmile[6]	Description	Total Ahead AADT[2]	AADT Rank	Truck AADT	AADTT Rank	Congestion[3]	FE AADT[7]	FE AADT Rank
99	22.16	JCT RTE 180S	128,500	2	14,300	6	-	257,200	1
99	22.735	BELMONT AVE	122,500	4	14,300	7	-	251,200	2
99	23.304	OLIVE AVE	117,500	8	14,300	8	-	246,200	3
99	18.544	JENSEN AVE	93,000	16	14,945	2	-	227,505	4
99	24.416	CLINTON AVE	93,000	17	14,303	5	-	221,727	5
99	23.852	MC KINLEY AVE[5]	108,000	10	12,384	17	-	219,456	6
99	15.491	CHESTNUT AVE	73,500	38	16,170	1	-	219,030	7
99	26.224	DAKOTA AVE	91,000	19	14,000	11	3	217,000	8
99	25	SHIELDS AVE	89,500	20	14,000	12	-	215,500	9
99	9.164	MANNING AVE	83,500	28	14,245	9	-	211,705	10

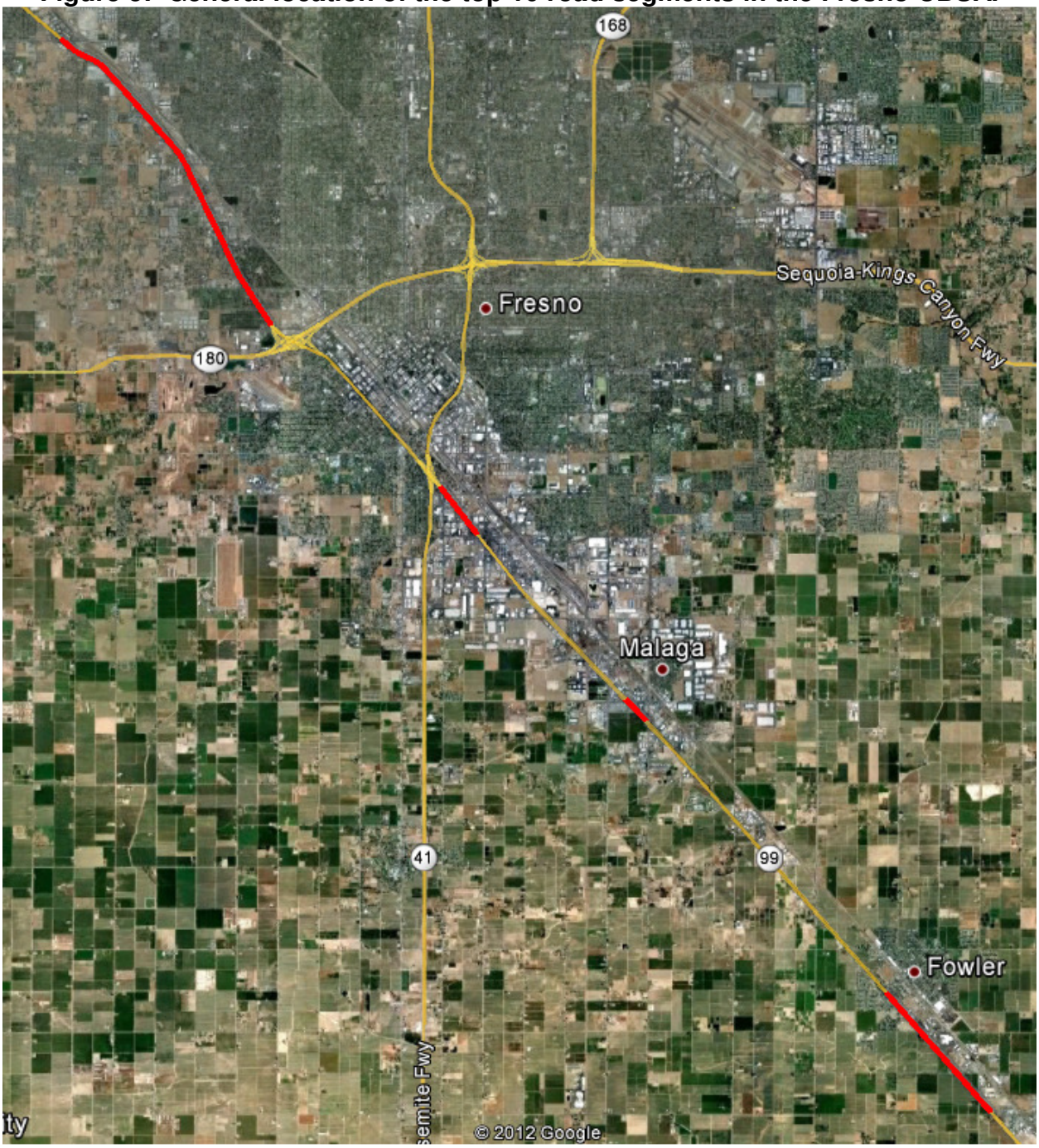
[1] Road segments with no Truck AADT (AADTT) are given substitution with the following:
Route 99 – The top 3 route 99 AADT segments substituted with 14,300 truck AADT data from an adjacent road segment.
- Segments ranked 8 and 9 were estimated with 14,000 Truck AADT. The data for all of the truck segments on Route 99 that were not estimated ranged between 11,000 and 16,000 Truck AADT and the calculated average was 14,000 Truck AADT which was used as the estimate.

[2] The Total AADT numbers shown apply to the freeway immediately ahead of the postmile.
[3] Congestion data is in annual vehicle delay in thousand hours. Caltrans District 6 (which includes Fresno County) has less 2% of the statewide annual vehicle hours of delay.
[4] The Annual Average Daily Traffic (AADT) is defined as the total volume for the year divided by 365 days. Very few locations in California are actually counted continuously. Traffic Counting is generally performed by electronic counting instruments that are moved from location to location throughout the state in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. All traffic volume figures that are listed include traffic in both directions.
[5] AADT did not match Truck data table.
[6] Postmile – Each breakpoint is identified by the postmile value corresponding to that point on the freeway. Caltrans has identified that the postmile values increase from the beginning of a route within a county to the next county line. The postmile values start over again at each county line. Postmile values usually increase from South to North or West to East depending upon the general direction the route follows within the state.
[7] The equation FE AADT = (Ahead AADT-AADTT)+(AADTT*10) is defined in the TAD: http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf

3.2.2 The top 10 road segments

The top 10 road segments are located along Freeway 99 through Fresno. The red lines in Figure 5 below demark the general location of the top 10 road segments. Gaps between the red lines along Freeway 99 depict locations of road segments that were ranked outside of the top ten and were not considered during the site selection process.

Figure 5: General location of the top 10 road segments in the Fresno CBSA.



Source: Google Earth

As shown in the TAD Matrix in Appendix A, road segment evaluations were based on many categories of criteria, however some of the categories were more critical to the decision-making process than others. In addition to meteorological considerations, the most important criteria included road design, road structures, and available space for an air monitoring site.

Below are descriptions of the 10 road segments and the reasons why they were acceptable or unacceptable for site consideration. Images of the segments are provided in Appendix B.

3.2.2.1 Segment 1: Jct. Rte. 180

This segment is located along Freeway 99 from Nielson Avenue northward to Belmont Avenue. The southern end of segment is above grade and the northern end of the segment is primarily below grade. The middle portion of segment is below grade with upward slopes and mixed vegetation and trees lining this entire portion of the segment. The slopes and vegetation present air flow obstruction and space limitations, and the above grade portion at the southern end of the segment is an overpass. The issues with this segment made it unacceptable for siting a near-road monitor.

3.2.2.2 Segment 2: Belmont Avenue

This segment is located along Freeway 99 from Belmont Avenue northward to Olive Avenue. The southern and northern ends of the segment are below grade with upward slopes and mixed vegetation and trees lining these portions of the segment. The middle portion of the segment is at grade with dense vegetation and a sound wall lining the east side of the freeway and a frontage road and businesses lining the west side of the freeway. These characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.3 Segment 3: Olive Avenue

This segment is located along Freeway 99 from Olive Avenue northward to McKinley Avenue. The southern end of the segment is below grade with upward slopes and vegetation lining both sides of the freeway. The northern end of the segment is above grade and comprises an overpass. The middle of the segment is at grade with trees lining this entire portion of the segment. These characteristics of this segment made it unacceptable for siting a near-road monitor.

3.2.2.4 Segment 4: Jensen Avenue

This segment is located along Freeway 99 from Jensen Avenue northward to Church Avenue. The southern end of the segment is above grade and comprises an overpass. The northern end of the segment descends into junction Highway 41 where upward slopes and vegetation align both sides of the freeway. The middle portion of the segment is at grade and industrial and commercial business with sizeable lots line both sides of the freeway. Air flow obstruction from vegetation and structures is minimal and there were two or three potential locations for siting a near-road monitor.

3.2.2.5 Segment 5: Clinton Avenue

This segment is located along Freeway 99 from Clinton Avenue northward to Shields Avenue. The entire segment is at grade with trees, bushes, and shrubs intermittently aligning much of the segment causing some space limitations and air flow obstruction.

A railroad yard is located on the east side of the freeway throughout the segment, and a frontage road, businesses and some vacant lots comprise the west side of the freeway. The District determined that there were several acceptable parcels for near-road monitor placement along this segment and at least one landowner was willing to discuss the possibility with the District. However, the parcels will be in the path of the high-speed rail project when the portion of Freeway 99 in this segment gets moved 100 yards to the west which eliminated them from further consideration.

3.2.2.6 Segment 6: McKinley Avenue

This segment is located along Freeway 99 from McKinley Avenue northward to Clinton Avenue. The southern end of the segment is an above grade overpass that gently descends to the at grade configuration which makes up most of the segment. The east side of the north end of the segment becomes an upward slope due to an on/off ramp. Although some vacant lots are located on both sides of the freeway, trees and mixed vegetation aligning both sides of the freeway and intermittent sound walls pose obstruction to air flow. These characteristics made it unacceptable for near-road monitor placement.

3.2.2.7 Segment 7: Chestnut Avenue

Segment 7 is located along Freeway 99 from Chestnut Avenue northward to Central Avenue. The segment is essentially at grade except for the northbound on-ramp at the southern end of the segment. Bushes intermittently align both sides of the freeway. The west side of the freeway is occupied by agriculture and a mobile home park. The east side of the freeway is occupied by businesses with large lots. The District determined that there were good potential locations for near-road monitor placement along this segment.

3.2.2.8 Segment 8: Dakota Avenue

Segment 8 is located along Highway 99 from Dakota Avenue northward to Ashlan Avenue. This segment is entirely below grade with upward slopes and mixed vegetation and trees aligning both sides of the freeway. These characteristics made it unacceptable for near-road monitor placement.

3.2.2.9 Segment 9: Shields Avenue

This segment is located along Freeway 99 from Shields Avenue northward to North Brawley Avenue. This segment is entirely at grade with intermittent bushes and trees aligning the road side but. A railroad yard occupies the east side of the freeway while a frontage road and businesses occupy the west side of the freeway. There were several vacant lots along the frontage road that are good potential locations for a near-road monitoring site. However, the parcels will be in the path of the high-speed rail project when the portion of Freeway 99 in this segment gets moved100 yards to the west.

3.2.2.10 Segment 10: Manning Avenue

This segment is located along Freeway 99 from Manning Avenue northward to Merced Street. The segment is essentially at grade with exception of the northern end which becomes an overpass associated with on/off-ramps. Trees and bushes intermittently align the segment. Agricultural fields occupy the entire west side of the freeway in this segment. Most of the east side of the freeway is comprised of industrial businesses and vacant fields with minimal obstructions. There are many potential locations on the east side of the freeway.

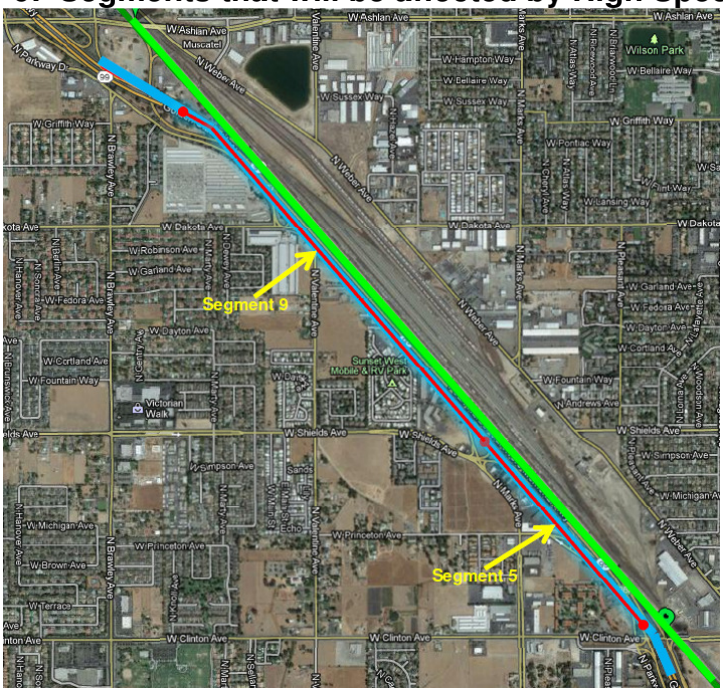
3.2.3 California High Speed Rail Project

In 2011, the California High-Speed Rail Authority began the procurement process of California's future high speed rail project[3]. The purpose of the project is to help meet the state's increasing transportation demands and will be designed to service those traveling from San Francisco to Los Angeles via the Central Valley, and eventually add routes from Sacramento to San Diego.

Construction of the Merced to Fresno route is scheduled to begin in 2013 and the portion of the route through Fresno will extend from the San Joaquin River to downtown Fresno. Part of this stretch of track will run parallel to Freeway 99 and North Parkway Drive beginning near North Brawley Avenue and extending southward to Clinton Avenue. Construction of the track will involve moving this section of Freeway 99 about 100 yards to the west and displacing North Parkway Drive and the businesses located there. Segments 9 and 5 are in this section and acceptable parcels are in the path of the high-speed rail construction. Given these circumstances, the District was reluctant to place a near-road monitoring site in the path of the high-speed rail route. Figure 6 shows the high-speed rail route (green line) as it relates to Segments 9 and 5.

[3] For more information on the California High-Speed Rail Project, visit http://www.cahighspeedrail.ca.gov/home.aspx

Figure 6: Segments that will be affected by High Speed Rail

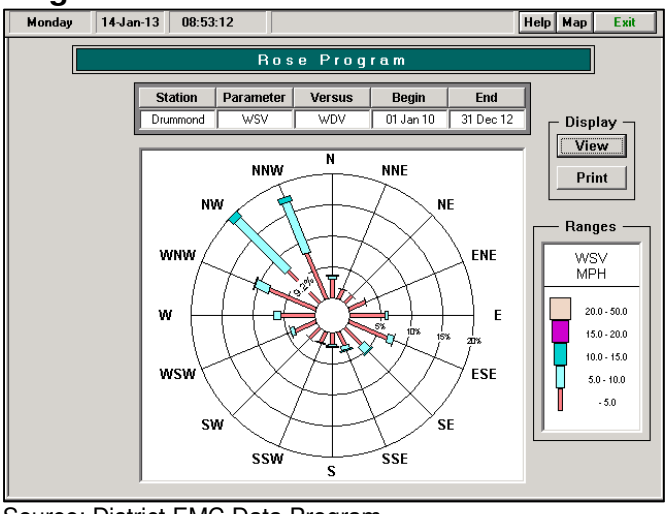


Source: Google Earth

3.3 Meteorological Considerations

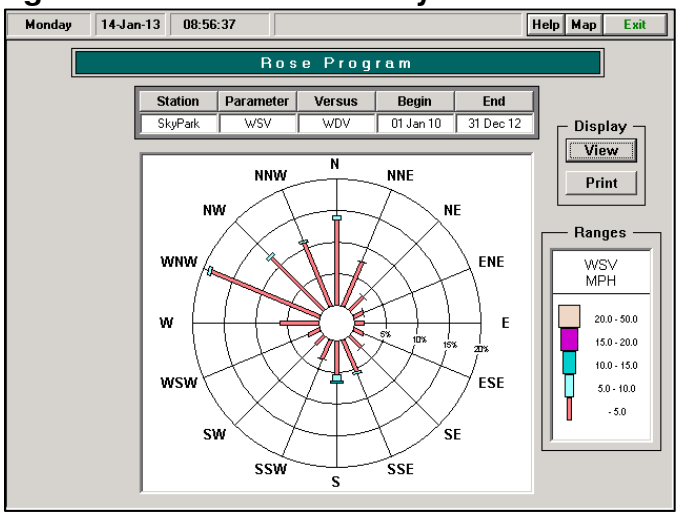
As shown in the wind roses below, local winds in Fresno blow primarily from the northwest to the southeast. The Freeway 99 corridor runs through the city of Fresno in a northwest-southeast orientation. Given that the prevailing winds basically flow parallel to the freeway, the District determined that locations on both sides of Freeway 99 were appropriate for near-road monitor placement.

Figure 7a: Fresno-Drummond Wind Rose



Source: District EMC Data Program

Figure 7b: Fresno-Sierra Sky Park Wind Rose

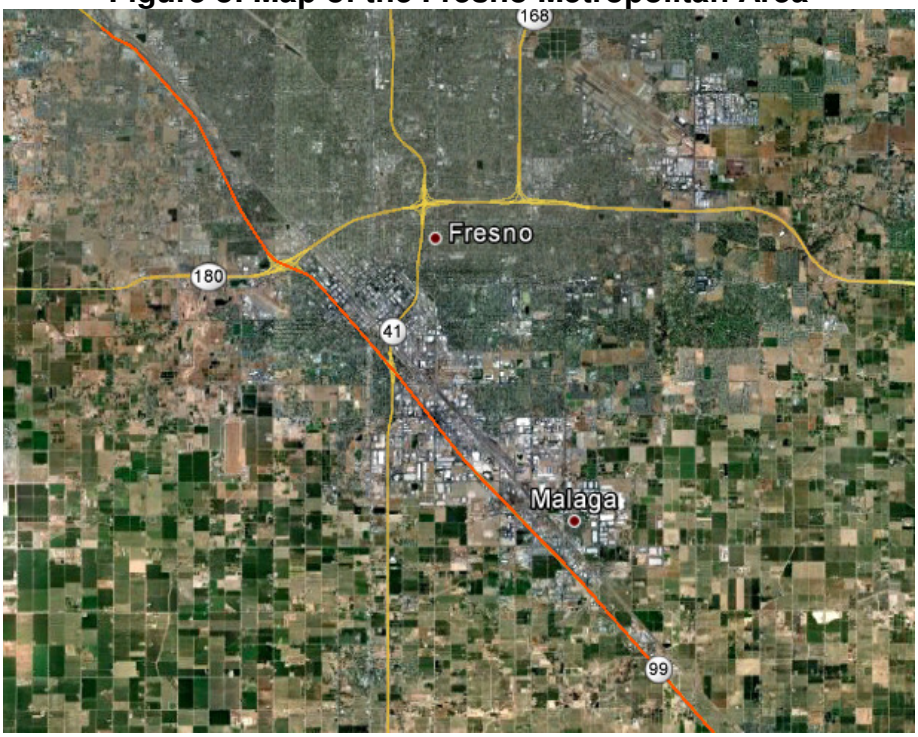


Source: District EMC Data Program

3.4 Terrain through Fresno CBSA

The terrain through Fresno CBSA is generally flat with agricultural lands located beyond the city limits. Freeway 99 is generally at grade at the northern and southern limits of the city of Fresno and either elevated or below grade in the urban area of city. Figure 8 shows a satellite image of the area under consideration in the city of Fresno.

Figure 8: Map of the Fresno Metropolitan Area

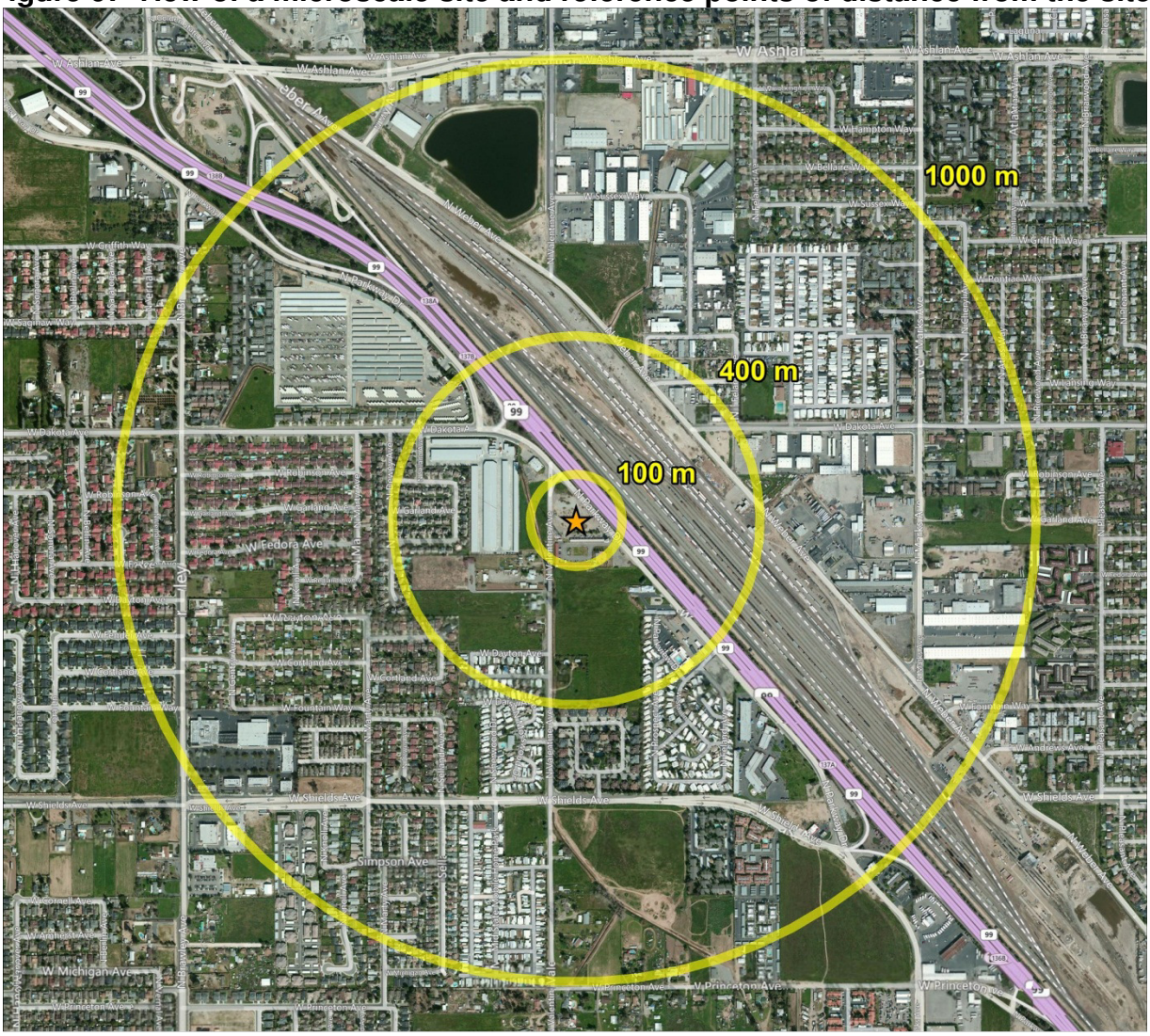


Source: Google Earth

3.5 Spatial scales and population exposure

As stated above, NO_2 near-road sites are intended to be microscale sites. This means that these sites measure representative concentrations within 100 meters. Figure 9 shows a microscale site with a maximum 100 meter radius for reference, and 400 and 1,000 meter radii shown for informational purposes. Maps showing locations that the District investigated in some detail are provided in Appendix D.

Figure 9: View of a microscale site and reference points of distance from the site.



Source: Arc GIS

The TAD states that the highest concentrations can be found within 20 meters of the freeway, so the District focused efforts on locations that can handle an air monitoring site within 20 meters. Additionally, the required range for the station's probe height is 2 to 7 meters in order to capture the highest NO_2 concentrations. While the preferred probe height is 2 meters, it will not be possible due to the structure and orientation of

the monitoring station so, the District will place the probe as close to the 2 meter height as possible.

For the Fresno CBSA, the District determined that Segments 4, 5, 7, 9 and 10 had potential multiple acceptable sites. Sites in Segments 5, 7, and 9, were eventually eliminated for reasons explained in Section 3.6 below. Segment 10 was eliminated because the District opted to pursue an acceptable location with a higher FE-AADT ranking found in Segment 4.

3.6 Correspondence with property owners

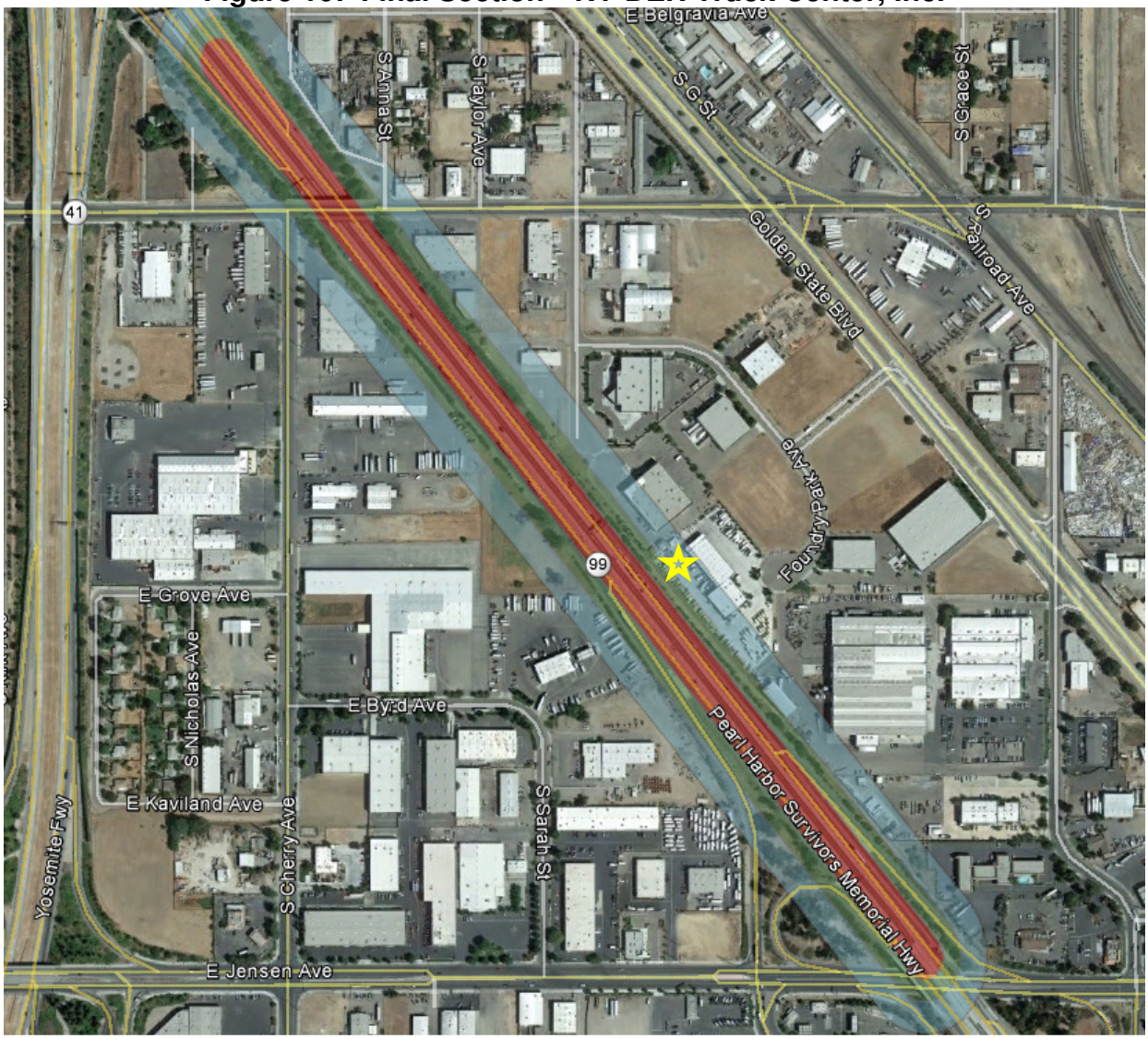
The District found 11 acceptable parcels along Freeway 99 so letters were sent to 10 of the property owners and one property owner was contacted by phone. Eight responses were received, and five of the property owners initially expressed interest. The District then began direct correspondence with the five interested landowners from Segments 9, 5, and 4 respectively. In addition to concerns about the future construction of high-speed rail, other factors lead to the elimination of Segments 9 and 5 from consideration. Two potential locations in Segment 9 were located at motels. One of the landowners offered use of one of the motel rooms for a monitoring station but the District determined that the space was unsuitable for station placement so the option was not pursued. The interested landowner in Segment 5 consented to placing a monitoring station in a specific place on the property however the location was more than 50 meters from the Freeway 99 roadside so it was eliminated from consideration. There were two interested landowners in Segment 4 who were willing to negotiate a lease with the District but one was eliminated because of vegetation obstructions on the property. The District is currently negotiating a lease with the landowner of the acceptable parcel.

4.0 FINAL SITE SELECTION

After everything was considered, a parcel in the road segment with the 4th highest FE-AADT was selected as the location of the Fresno NO_2 near-road monitoring site. The site's address is 2482 Foundry Park Avenue. The selected site meets the siting criteria listed in the CFR, and is also acceptable for accommodating placement of a PM2.5 and other air pollution analyzers in the future.

Figure 10 is a map of the final site selection located on Foundry Park Avenue in Segment 4. Any of the parcels adjacent to these would have similar characteristics.

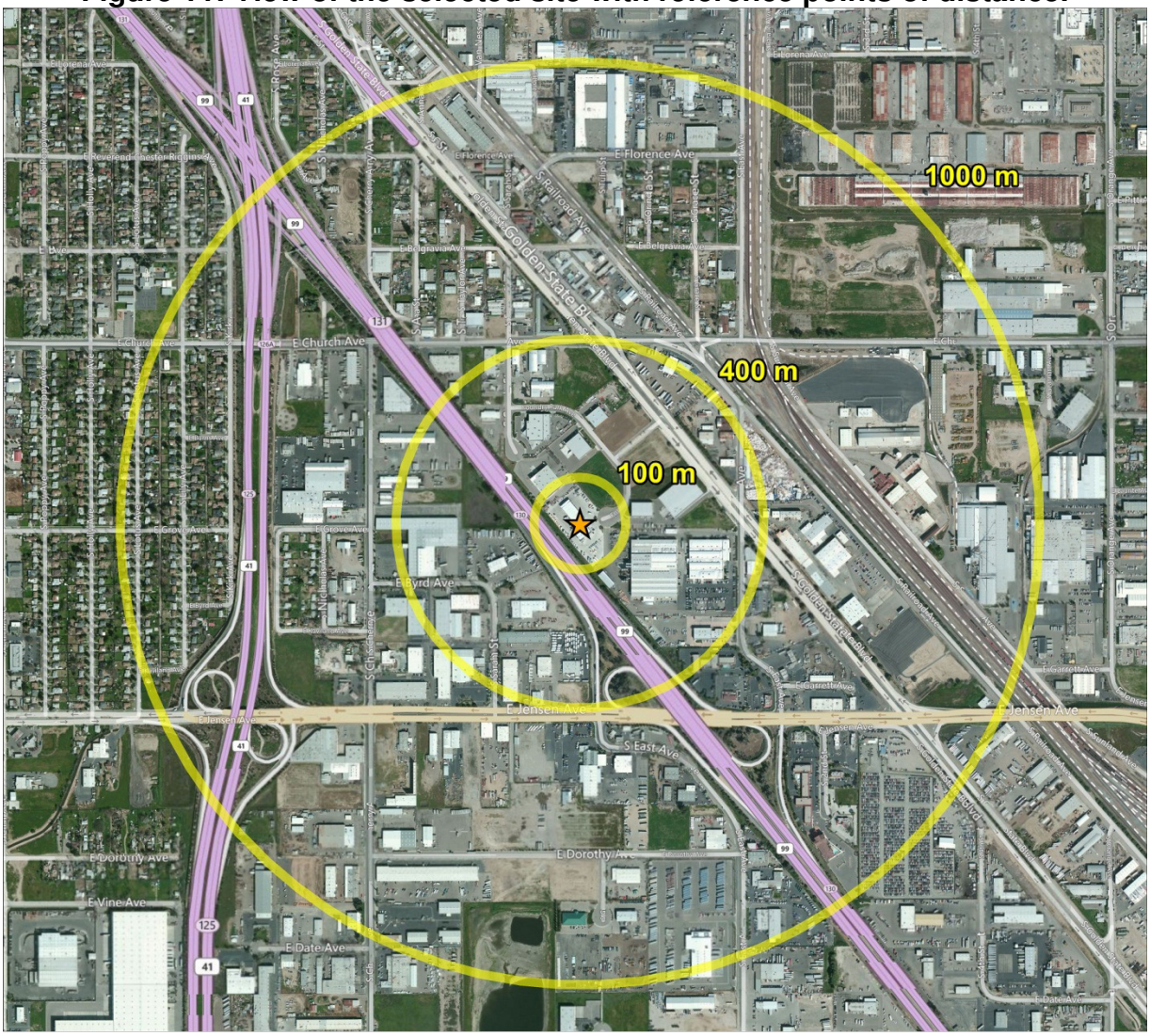
Figure 10: Final Section—RY-DEN Truck Center, Inc.



Source: Google Earth

Figure 11 shows the selected microscale site with concentric circles depicting 100, 400, and 1,000 meters radii around the parcels in the segment. The 100 meter circle is the maximum extent of the microscale site. The concentric circles show the land uses around the parcels.

Figure 11: View of the selected site with reference points of distance.



Source: Arc GIS

Figures 12a and 12b show roadside views of the selected site for the NO_2 near-road air monitoring station. The site will be as close to the freeway as practicable and the monitoring station will be placed in the corner of the truck lot.

Figures 12a and 12b: Selected site located at 2482 Foundry Park Avenue in Segment 4

12a.

Source: Google Earth

12b.

Source: Google Earth

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APPENDICES

Appendix A: Traffic Data Tables

Below is the list of the top 32 segments in the Fresno CBSA based on Caltrans data.

Table 1: Fresno County Top Road Segments by Fleet Equivalent (AADT)[4]

Route	Postmile[6]	Description	Total Ahead AADT[2]	AADT Rank	Truck AADT	AADTT Rank	Congestion[3]	FE AADT[7]	FE AADT Rank
99	22.16	JCT RTE 180S	128,500	2	14,300	6	-	257,200	1
99	22.735	BELMONT AVE	122,500	4	14,300	7	-	251,200	2
99	23.304	OLIVE AVE	117,500	8	14,300	8	-	246,200	3
99	18.544	JENSEN AVE	93,000	16	14,945	2	-	227,505	4
99	24.416	CLINTON AVE	93,000	17	14,303	5	-	221,727	5
99	23.852	MC KINLEY AVE[5]	108,000	10	12,384	17	-	219,456	6
99	15.491	CHESTNUT AVE	73,500	38	16,170	1	-	219,030	7
99	26.224	DAKOTA AVE	91,000	19	14,000	11	3	217,000	8
99	25	SHIELDS AVE	89,500	20	14,000	12	-	215,500	9
99	9.164	MANNING AVE	83,500	28	14,245	9	-	211,705	10
99	5.321	SELMA, SECOND ST	67,000	41	14,740	3	-	199,660	11
99	21.012	NORTH JCT. RTE. 180	80,000	34	13,176	14	-	198,584	12
99	19.29	NORTH JCT. RTE. 41	63,000	46	14,490	4	-	193,410	13
99	31.609	HERNDON AVE	62,500	48	14,003	10	-	188,527	14
180	58.664	JCT RTE 41	143,000	1	5,000	21	-	188,000	15
99	28.102	SHAW AVE	61,000	49	13,347	13	-	181,123	16
99	6.431	JCT. RTE. 43 SOUTH	76,500	36	11,613	18	-	181,017	17
99	20.19	SOUTH JCT. RTE. 180	63,000	47	12,600	16	-	176,400	18
99	0.951	KINGSBURG, JCT. RTE 201 E	58,000	52	13,033	15	-	175,297	19
41	26.461	SHIELDS AVE	126,000	3	4,500	27	6	166,500	20
41	24.527	JCT. RTE. 180S	122,000	6	4,880	25	2	165,920	21
41	25.266	MC KINLEY AVE	121,000	7	4,840	26	18	164,560	22
41	27.471	ASHLAN AVE	122,000	5	4,500	28	2	162,500	23
41	28.469	SHAW JCT. RTE. 168	110,000	9	4,500	29	3	150,500	24
180	58.036	DIANA ST	102,000	11	5,000	22	-	147,000	25
180	57.843	BLACKSTONE AVE	102,000	12	5,000	23	-	147,000	26
180	57.242	FULTON ST	94,000	14	5,000	24	-	139,000	27
5	17.964	RTE. 33 S., RTE. 145 N.	37,500	57	11,085	19	-	137,265	28
5	14.873	JCT. RTE. 198	37,500	59	11,081	20	-	137,229	29
41	23.736	DIVISADERO ST	96,000	13	4,500	30	-	136,500	30
41	22.798	M ST	93,500	15	4,500	31	-	134,000	31
41	29.463	FRESNO	93,000	18	4,500	32	-	133,500	32

[1] Road segments with no Truck AADT (AADTT) are given substitution with the following:

Route 99 – The top 3 route 99 AADT segments substituted with 14,300 truck AADT data from an adjacent road segment.

- Segments ranked 8 and 9 were estimated with 14,000 Truck AADT. The data for all of the truck segments on Route 99 that were not estimated ranged between 11,000 and 16,000 Truck AADT and the calculated average was 14,000 Truck AADT which was used as the estimate.

Route 180 - 5,000 Truck AADT. Segments substituted with Truck AADT data from the only road segment with similar AADT data.

Route 41 - 4,500 Truck AADT. Calculated the average of the top 4 Truck AADT road segments with similar total AADT.

[2] The Total AADT numbers shown apply to the freeway immediately ahead of the postmile.
[3] Congestion data is in annual vehicle delay in thousand hours. Caltrans District 6 (which includes Fresno County) has less 2% of the statewide annual vehicle hours of delay.
[4] The Annual Average Daily Traffic (AADT) is defined as the total volume for the year divided by 365 days. Very few locations in California are actually counted continuously. Traffic Counting is generally performed by electronic counting instruments that are moved from location to location throughout the state in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present. All traffic volume figures that are listed include traffic in both directions.
[5] AADT did not match Truck data table.
[6] Postmile – Each breakpoint is identified by the postmile value corresponding to that point on the freeway. Caltrans has identified that the postmile values increase from the beginning of a route within a county to the next county line. The postmile values start over again at each county line. Postmile values usually increase from South to North or West to East depending upon the general direction the route follows within the state.
[7] The equation FE AADT = (Ahead AADT-AADTT)+(AADTT*10) is defined in the TAD: http://www.epa.gov/ttnamti1/files/nearroad/NearRoadTAD.pdf

Appendix B: Site Details

Below are the site details for the selected site and the sites that were ruled out for various reasons.

Table 2: Site Details Matrix

Site/Segment Parameter	Segment 4 RY-DEN	Segment 4 Tuff Shed	Segment 5 Multiple Sites	Segment 9 Multiple Sites
Road segment name	Segment 4	Segment 4	Segment 5	Segment 9
Road segment end points	Jensen Ave to Church Ave	Jensen Ave to Church Ave	Clinton Ave to Shields Ave	Shields Ave to N. Brawley Ave
Road type	Controlled access highway	Controlled access highway	Controlled access highway	Controlled access highway
Interchanges	On-ramp nearby	On-ramp nearby	None	None
Frontage roads	None	None	None	Yes
Roadside design	At grade	At grade	At grade	At grade
Terrain	Flat	Flat	Flat	Flat
Current road construction	None	None	None	None
Future road construction	Not aware of any	Not aware of any	High Speed Rail Project	High Speed Rail Project
Roadside structures	Some vegetation	Some vegetation	Some vegetation	Some vegetation
AADT	93,000	93,000	93,000	89,500
HD counts	14,945	14,945	14,303	14,000
FE-AADT	227,505	227,505	221,727	215,500
Congestion information	No congestion	No congestion	No congestion	No congestion
Infrastructure	Freeway sign	Freeway sign	Light poles, billboard	Cell tower, power poles
Surrounding land use	Light Commercial/ Industrial	Light Commercial/ Industrial	Light Commercial	Light Commercial
Nearby sources	Freeway	Freeway	Freeway	Freeway
Meteorology	Acceptable	Acceptable	Acceptable	Acceptable
Population exposure	Non-residential area.	Non-residential area.	Commercial and nearby residential area.	Commercial and nearby residential area.
Available space – site footprint	1000 square feet	1000 square feet	1000 square feet	1000 square feet
Safety features	Will need to be installed.	None.	None.	None.
Property type	Private Property	Private Property	Private Property	Private Property
Property owner	Landowner is willing to work with the District.	District provided lease but landowner did not respond.	Landowner would not provide suitable location.	Landowner is willing to work with the District.
Likelihood of access	Easy access	Easy access	Easy access	Easy access
Other details/local knowledge				Selected higher ranked segment.

Appendix C: Maps of Segments

Beginning on the following page, aerial maps show the top 10 segments, their end points in detail, and the surrounding land use of each segment.

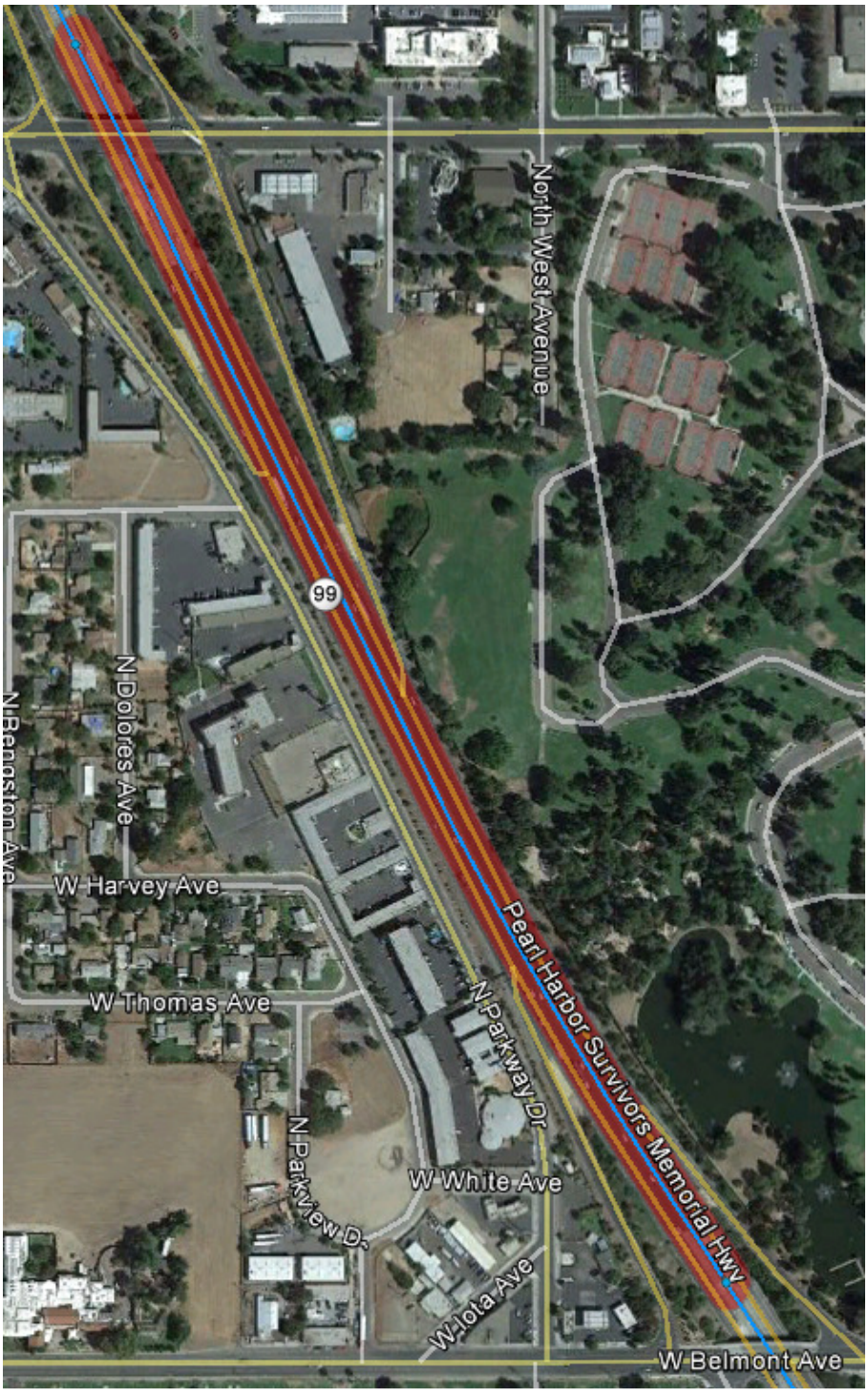
Segment 1

This segment is located along Freeway 99 from Nielson Avenue northward to Belmont Avenue.

Source: Google Earth

Segment 2

This segment is located along Freeway 99 from Belmont Avenue northward to Olive Avenue.



Source: Google Earth

Segment 3

This segment is located along Freeway 99 from Olive Avenue northward to McKinley Avenue.

Source: Google Earth

Segment 4

This segment is located along Freeway 99 from Jensen Avenue northward to Church Avenue. The yellow ellipse demarks the location of suitable parcels the District investigated. The green star demarks the parcel that was selected.

Source: Google Earth

Segment 5

This segment is located along Freeway 99 from Clinton Avenue northward to Shields Avenue. The yellow ellipse demarks the location of suitable parcels the District investigated but eventually eliminated from consideration for various reasons.

Source: Google Earth

Segment 6

This segment is located along Freeway 99 from McKinley Avenue northward to Clinton Avenue.

Source: Google Earth

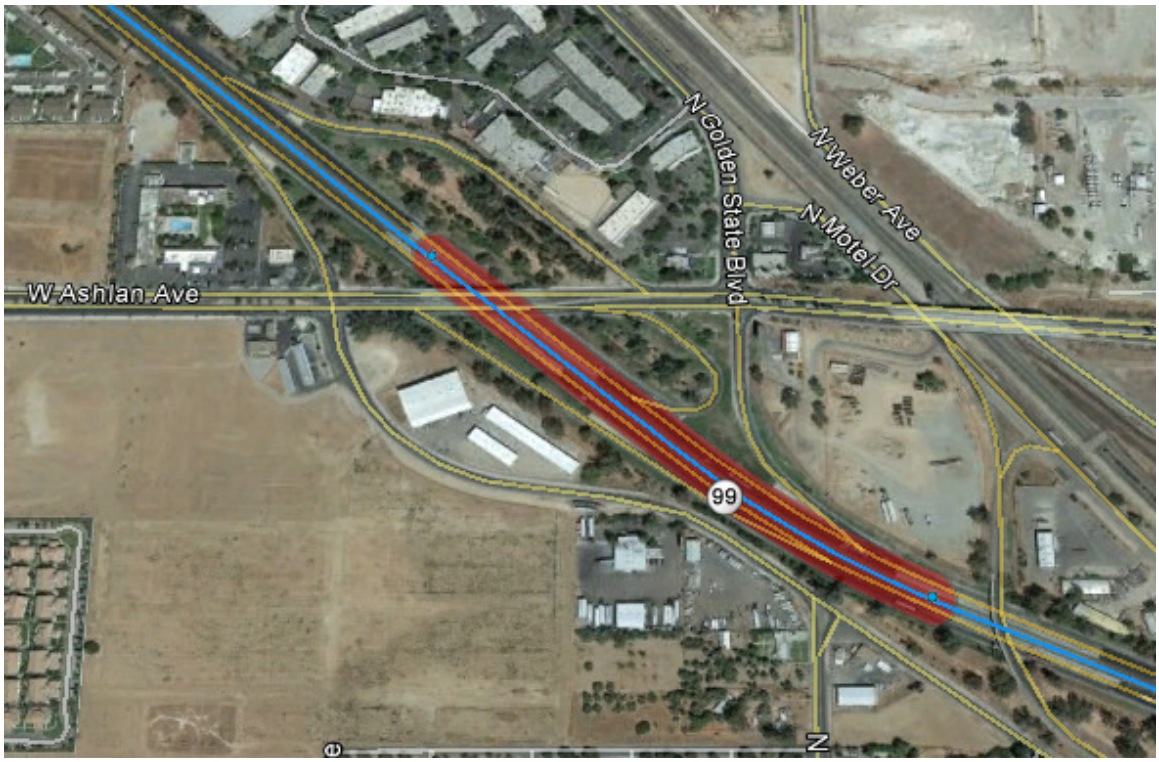
Segment 7

Segment 7 is located along Freeway 99 from Chestnut Avenue northward to Central Avenue.

Source: Google Earth

Segment 8

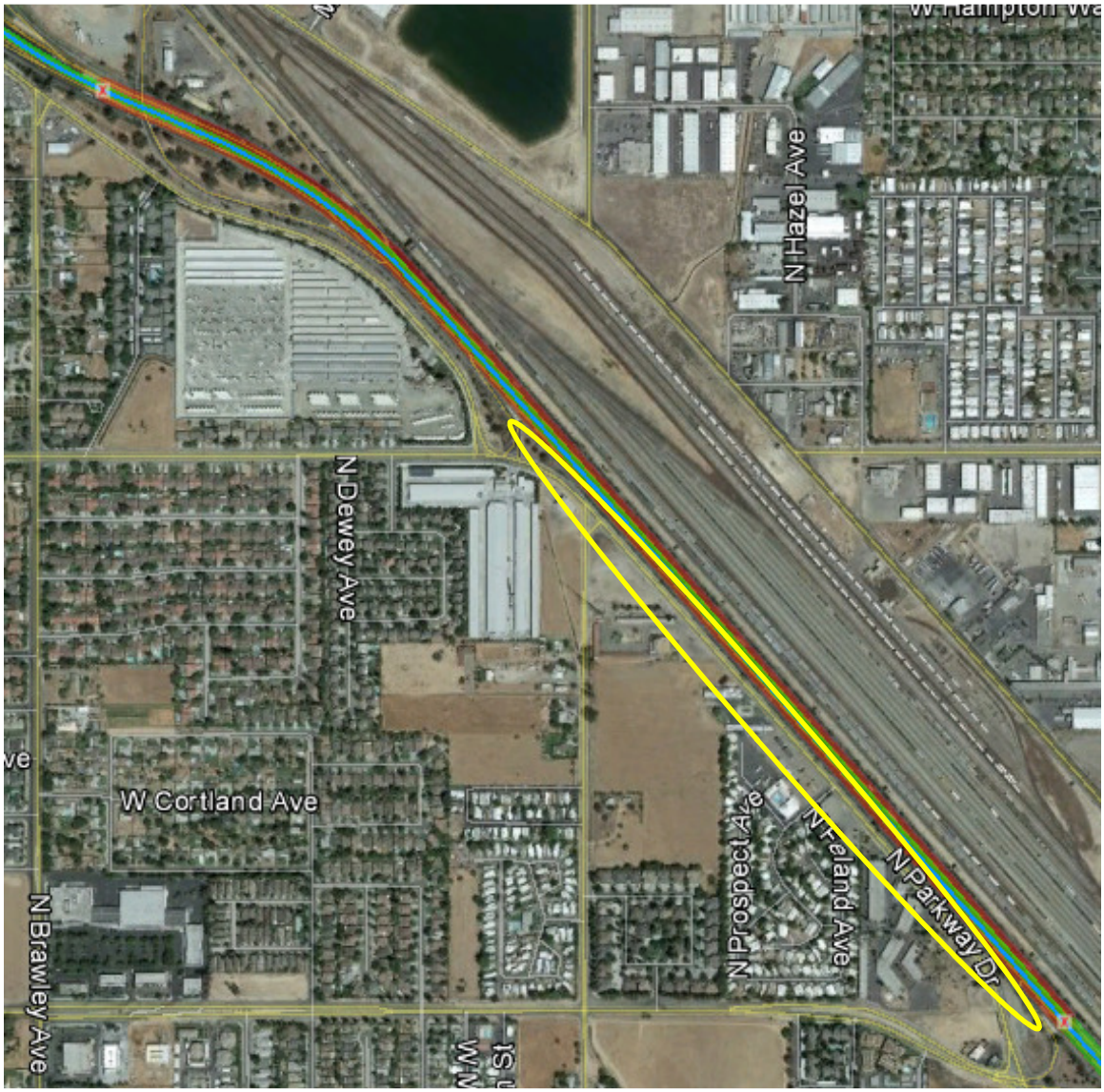
Segment 8 is located along Highway 99 from Dakota Avenue northward to Ashlan Avenue.



Source: Google Earth

Segment 9

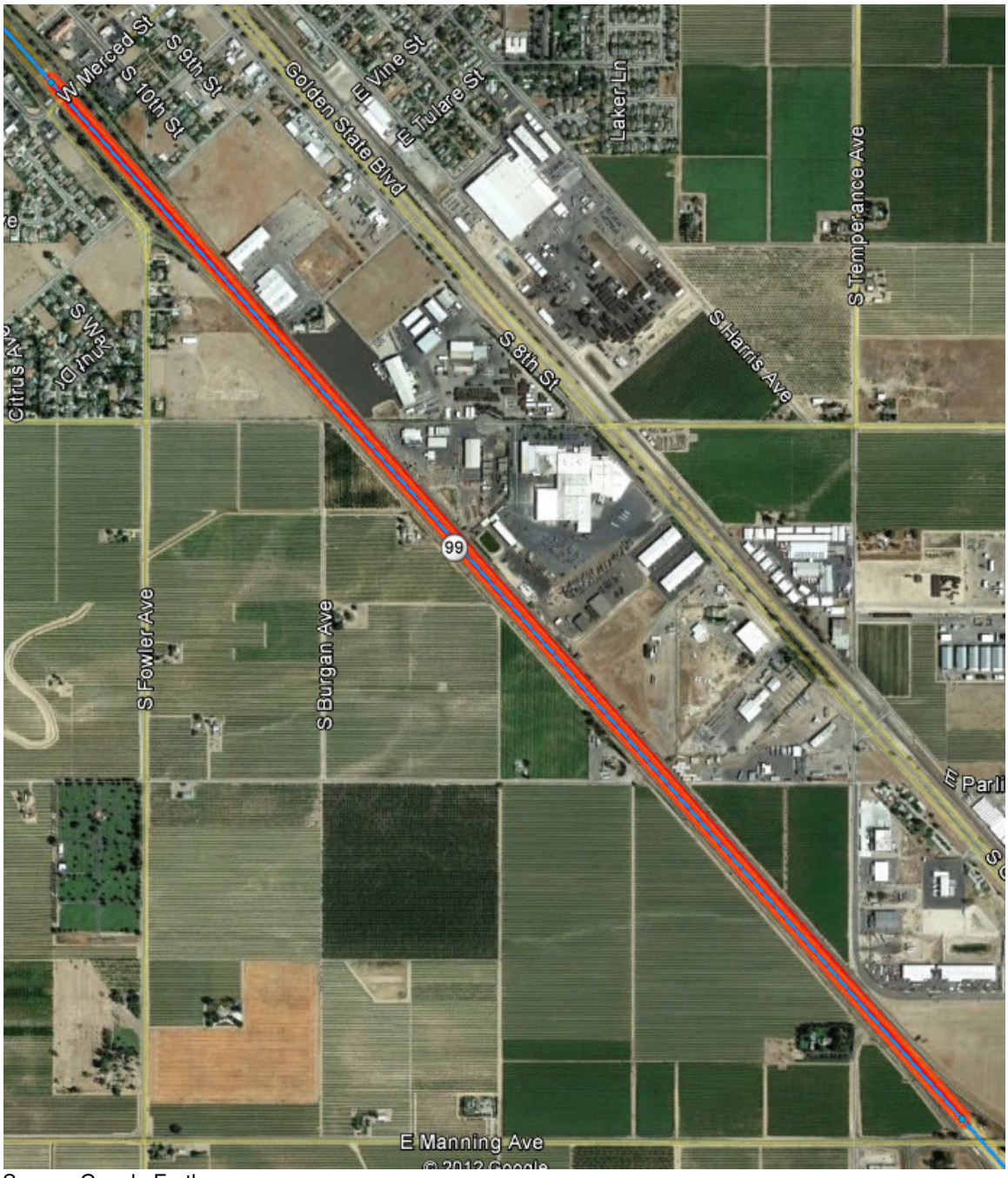
This segment is located along Freeway 99 on Parkway Avenue from Shields Avenue northward to North Brawley Avenue. The yellow ellipse demarks the location of suitable parcels the District investigated but eventually eliminated from consideration for various reasons.



Source: Google Earth

Segment 10

This segment is located along Freeway 99 from Manning Avenue northward to Merced Street.

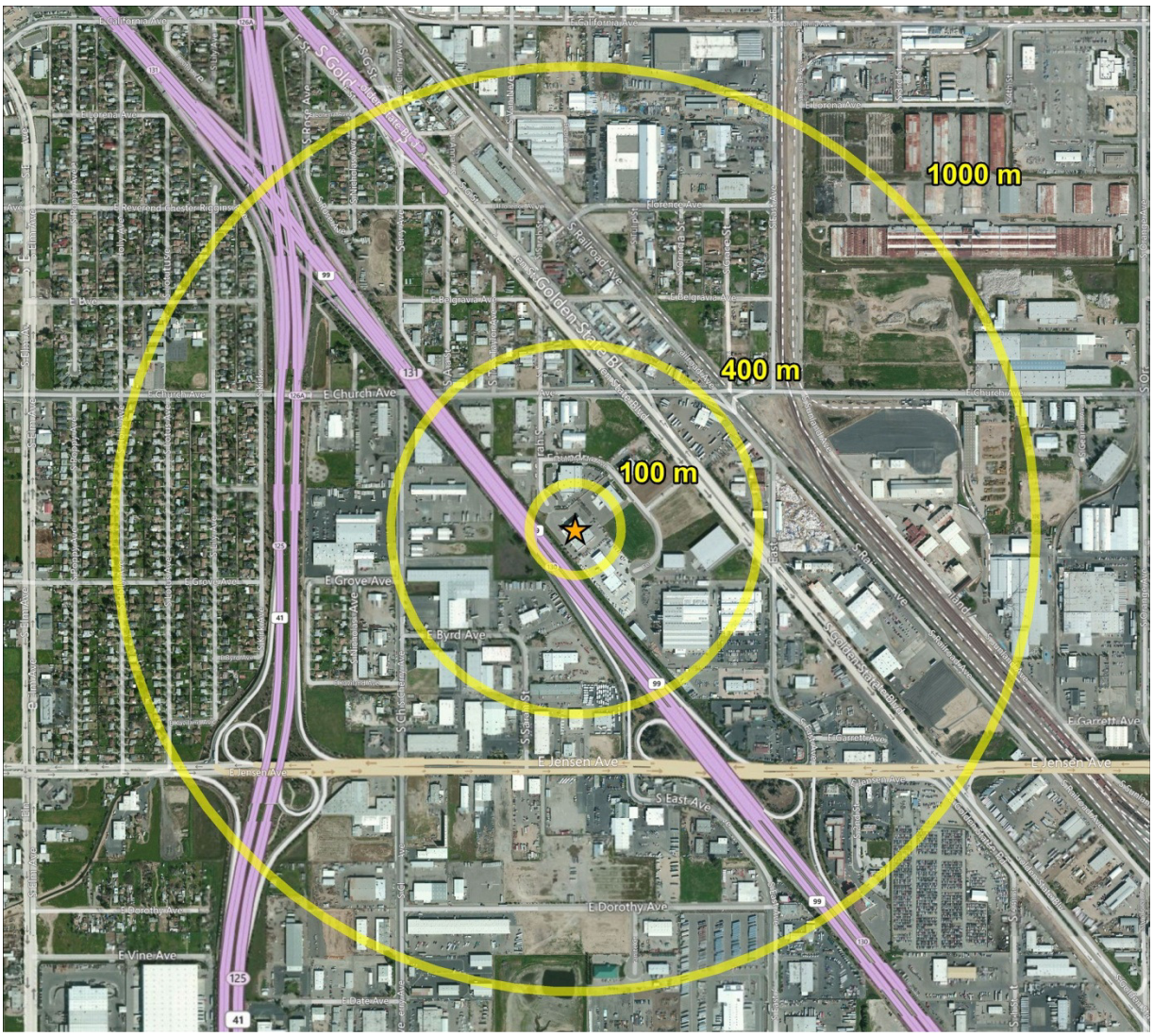


Source: Google Earth

Appendix D: Sample sites with reference points of distance

Segment 4

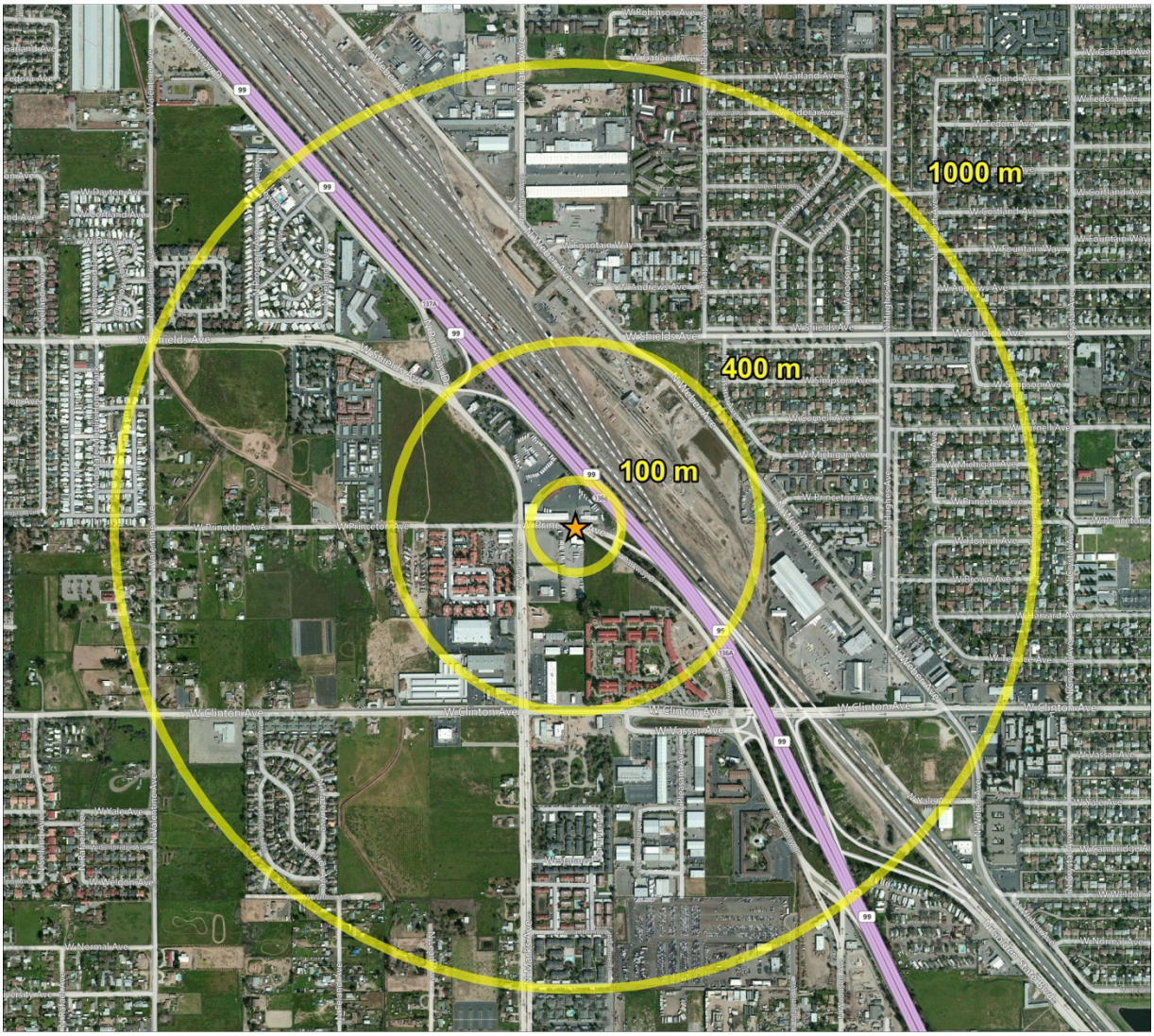
View of one of the microscale sites that the District investigated in some detail. The 100 meter circle is the maximum extent of the microscale site. The concentric circles show the land uses around the parcels. This site was not pursued because the property owner stopped corresponding with the District.



Source: Arc GIS

Segment 5

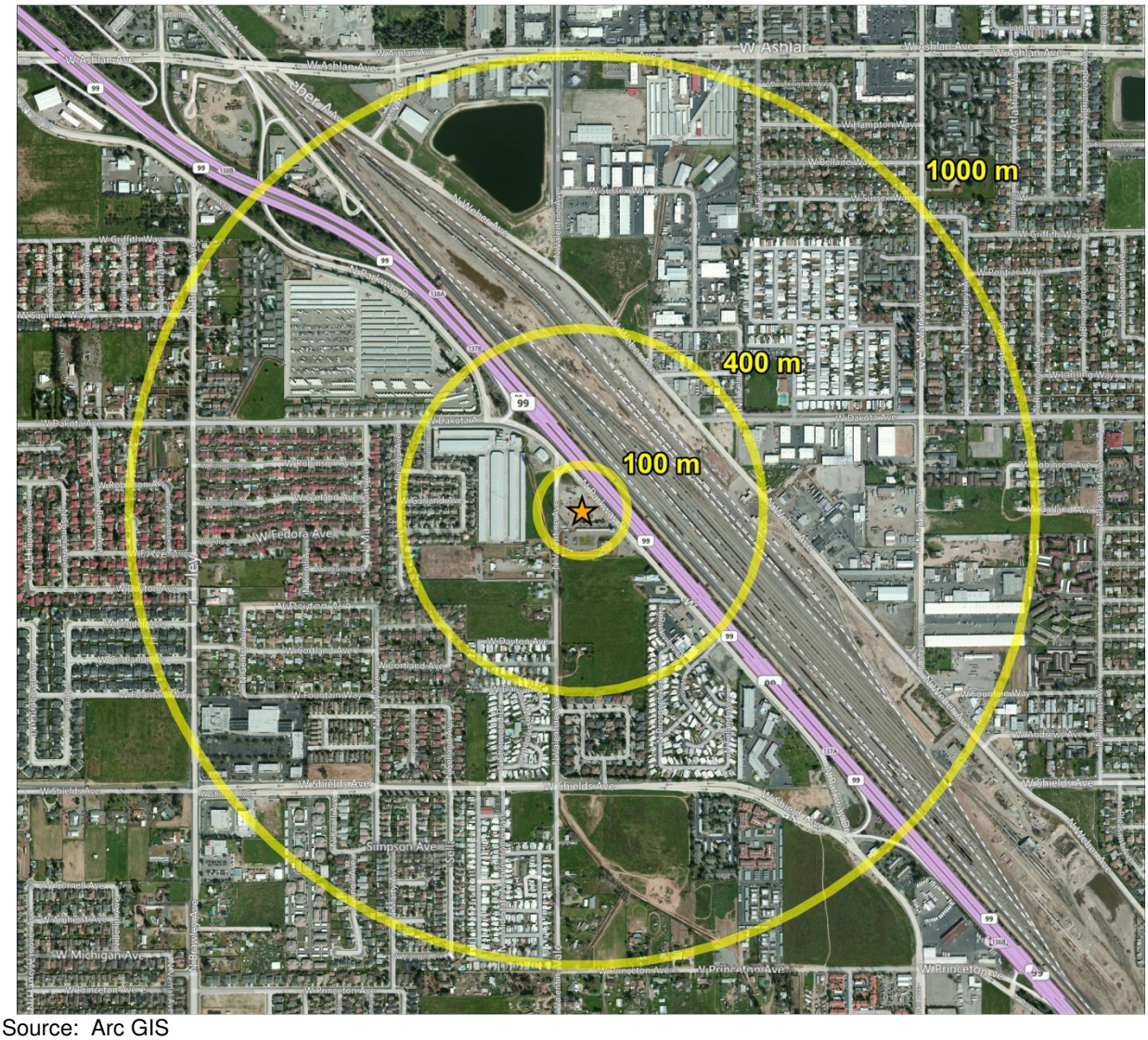
View of one of the microscale sites that the District investigated in some detail. The 100 meter circle is the maximum extent of the microscale site. The concentric circles show the land uses around the parcels. This site was not pursued because the property owner did not respond to the District's letter of interest.



Source: Arc GIS

Segment 9

View of one of the microscale sites that the District investigated in some detail. The 100 meter circle is the maximum extent of the microscale site. The concentric circles show the land uses around the parcels. This site was not pursued because of complications between multiple owners of the property as well as concerns about the future construction of high-speed rail.



Source: Arc GIS

APPENDIX F:

EPA's Approval of the Fresno-First Air Monitoring Site Relocation

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

MAR 07 2013

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Ms. Karen Magliano
Manager, Air Quality Data Branch
Planning and Technical Support Division
Air Resources Board
California Environmental Protection Agency
P.O. Box 2815
Sacramento, California 95812

Dear Ms. Magliano:

This letter transmits our approval of the California Air Resources Board's request to move the NCore station from the First Street site in Fresno, AQS # 06-019-0008, to a new location approximately a quarter mile to the north, AQS # 06-019-0011, as required by the Ambient Air Monitoring Regulations. According to these rules (see 40 CFR 58.11(c)), NCore network design and changes must be approved by the Environmental Protection Agency's (EPA) Administrator. This authority has been delegated to the Director of the Air Quality Assessment Division in EPA's Office of Air Quality Planning and Standards.

In considering approving the move of the NCore monitoring station, we worked with EPA Region 9 on a review of your request, including the rationale of why the First Street NCore station could no longer be supported, and assessed the location and characteristics of the area at the new location to be monitored. We especially appreciate the time and effort that went into the one-month parallel field study that was conducted in January 2012 for $PM_{2.5}$ and ozone, as this demonstrated the consistency of the two locations. After careful consideration of your request to move the site, we are pleased to approve the new location for this station as part of the NCore network.

We understand the NCore station at the new location has been fully operational since early last year. Thank you for your program's efforts in working through the issues of having to move the NCore station and establish the new site. For any technical questions, you may contact Tim Hanley at hanley.tim@epa.gov and 919-541-4417.

Sincerely,

Richard A. Wayland

Richard A. Wayland
Director
Air Quality Assessment Division

cc: Linda Murchison, Ph.D., Chief – Planning and Technical Support Division, CARB
Joe Guerrero, Manager, Air Monitoring North Section, CARB
Matt Lakin, EPA, Region 9
Tim Hanley, EPA, OAQPS
Seyed Sadredin, SJVAPCD

APPENDIX G: Comments and Responses

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Appendix G: Comments and Responses

This Appendix contains responses to comments made by the public on the Annual Air Monitoring Network Plan (Plan). The District held a 30-day public inspection period on the Plan from March 18, 2013 through April 18, 2013.

G.1 WRITTEN COMMENTS ON THE 2012 AIR MONITORING NETWORK PLAN

Comment period held from March 18, 2013 through April 18, 2013.

Comments were received from the following organization:

Earthjustice

Earthjustice's April 18, 2013 comment letter referenced and incorporated a previous comment letter dated October 18, 2012. The material below combines comments from both letters.

Comment: Earthjustice asks for more details about District's rationale on air monitoring site mergers, site closures, and the siting of NO_2 near-road monitoring sites.

Response: The District has determined that closing and/or consolidating certain sites will streamline operations and reduce maintenance costs without compromising National Ambient Air Quality Standards (NAAQS). Streamlining operations and reducing costs will allow the District to use the resources for other air monitoring purposes, such as, adding additional capabilities to existing sites and decreasing down time of the analyzers. The NO_2 near-road monitoring documentation contained in Appendixes D and E has all of the required information that EPA needs to approve the site locations and closely follows the Technical Assistance Document published by EPA.

Comment: The Plan requirements are described in the introduction but the criteria on which they are based are not explained in detail. For example, what population threshold is used for determining population sites? If a threshold was not used, how were those sites determined? Also, brief descriptions of each of the monitoring sites are provided in Appendix A and B but specific information about the area within which the sites are located is not provided.

Response: For each monitoring site, the District's network plan provides information on criteria listed in 40 CFR Part 58 Subpart B Section 58.10 which includes objective and spatial scale of representativeness. For more detailed information on the objective and spatial scales, site types, and population please refer to 40 CFR 58 Appendix D.

Comment: The District notes that the California Regional Particulate Air Quality Study (CRPAQS) is the basis of the PM2.5 monitoring network and that the completion date of the final report is expected to be June 2012. Has the report been completed? If so,

please make it available to the public. How did the study influence the District's network design?

Response: Data collection for the study has been completed and many reports have been finalized and published. In addition, many peer reviewed scientific and journal articles have appeared in a wide variety of scientific publications. The results of this study are used in air quality modeling and in the District's SIPs. These results aid in the understanding of the formation of air pollution and the areas of the District which have the worst air quality. All of this knowledge as contributed to the design of the air monitoring network. The final synthesis document, a summary of findings, is not yet complete, but the studies and analysis have been consistently used by the District as they have become available. Information on CRPAQS is available to the public on the Central California Air Quality Studies page of the California Air Resources Board website at http://www.arb.ca.gov/airways/CRPAQS/default.htm .

Comment: The District states that the Bakersfield-Muni PM2.5 and PM10 monitors met the criteria for a move under 40 CFR Part 58, however it did not request or receive approval from the Regional Administrator as required under 40 CFR Part 58.14(b) prior to shutting down the monitors.

Response: As stated in Appendix C of the Plan, the PM analyzers were shut down when the District realized that the AMS was not sited correctly for PM monitoring. In order for an AMS to have NAAQS comparable data, it needs to be sited in accordance with federal regulation. Appendix C provides all of the necessary documentation. The District will work with EPA and ARB to ensure that all the necessary requirements are addressed.

Comment: Regarding the reason for shutting down the PM monitors at Bakersfield-Muni, the rationale suggests that the District is operating under a definition of "ambient air" that differs from the definition found in 40 CFR 50.1.

Response: The District was using the term "ambient air" in conjunction with neighborhood scale which PM sites are intended to measure. Specifically, a neighborhood scale site measures ambient air with relatively consistent PM concentrations over an area of 50.2 square kilometers or 19.3 square miles.

Comment: Considering the severe public health consequences of the District's poor air quality, the District should prioritize the maintenance of a comprehensive and reliable air monitoring network by adhering to pertinent regulations.

Response: The District strives to maintain its comprehensive air monitoring network and the network's reliability through the efforts of its staff of experts in accordance with regulations outlined in 40 CFR. Currently, the air monitoring network exceeds federal requirements and the District continues to enhance the network as additional requirements, such as NO_2 near-road monitoring, are promulgated.

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, DC INTERNATIONAL

April 18, 2013

Jennifer Ridgway
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Re: San Joaquin Valley Air Pollution Control District Annual Air Monitoring Network Plan, March 19, 2013

Dear Ms. Ridgway,

Thank you for the opportunity to submit additional comments on the San Joaquin Valley Air Pollution Control District's ("District") Annual Air Monitoring Network Plan ("Plan"). These comments build upon the comments provided in October 2012 on the September 13, 2012 draft of the Plan, and are submitted on behalf of the Central Valley Air Quality Coalition, Greenaction, and the Coalition for Clean Air. The October 2012 comment letter is attached for your review. This letter reiterates the request that the District provide more detailed information about its decision-making process with respect to monitoring site closures and consolidations. Without that information, the Plan does not fully communicate the District's approach toward maintaining and improving its air monitoring network. Given the importance of the monitoring network in documenting progress toward attainment and improving public health, this Plan is a key tool in meeting the Valley's air quality goals and should clearly explain the District's air monitoring activities to the public.

Despite soliciting public comment on the September 13, 2012 draft of the Plan, the District did not acknowledge or respond to comments received. District staff reported that comments on the earlier draft of the Plan were no longer thought to be relevant given the numerous changes made between the September 2012 and March 2013 drafts of the Plan. However, comments that Earthjustice filed in October 2012 asked for more detailed information about sites that is not included in the March 2013 draft. As just one example, the October 2012 comments stated:

> Although the District describes the Plan requirements in the introduction, the criteria behind those requirements are not fully explained. For example, on page 7,[1] the Plan details the different monitoring site types, such as sites near the highest pollutant concentrations, sites in areas of high population density, and sites to identify background concentration levels. This section would be more helpful if it described how the District assigned specific monitors to the different site types. For sites in high population areas, what is the population threshold used to determine which sites fall under the "population oriented" site type? Or, if a threshold is not used, how are

[1] Starts on page 8 in the March 19, 2013 draft of the Plan.

50 CALIFORNIA STREET SUITE 500 SAN FRANCISCO, CA 94111
T: 415.217.2000 F: 415.217.2040 E: caoffice@earthjustice.org W: www.earthjustice.org

> those sites determined? Similar questions should be answered for the remainder of the site types.

The section of the Plan to which these comments refer was not updated in the March 2013 draft. District staff should review the previously submitted comments again in their entirety and incorporate responses to those comments into the next iteration of the Plan. Those comments also request additional information on the District's summary of planned changes, including potential site mergers, so that the public understands why the District is considering removing monitors with years of air quality data. This information also was not included in the most recent draft of the plan. During the March 28, 2013 public workshop, District staff explained the rationale behind a few of the potential mergers when asked, but that is not sufficient. The District should include those explanations in the next draft of the Plan for all proposed site changes.

The District's recent decision to shut down the PM10 and PM2.5 monitors at the Bakersfield-Muni site raises serious concerns about the process by which the District maintains its air monitoring network and the reliability of the data collected. The Bakersfield-Muni PM10 and PM2.5 monitors were SLAMS monitors, and, as the District notes, are regulated under the criteria in 40 CFR Part 58. The District states that the Bakersfield-Muni monitors met the criteria for a move under 40 CFR Part 58; however, the District did not request or receive approval from the Regional Administrator as required under 40 CFR Part 58.14(b) prior to shutting down the monitors.

Additionally, the District argued that the PM2.5 and PM10 monitors should be moved due to activities in the area, such as street sweeping and disking of an open field, that altered air quality near the monitors such that the monitors' data would not capture "ambient air" in the Valley. This rationale suggests that the District is operating under a definition of ambient air that differs from the definition found in 40 CFR 50.1(e), which defines ambient air as "that portion of the atmosphere, external to buildings, to which the general public has access." Street sweeping and disking are common activities throughout the Valley, so there is no reason to exclude a site where these activities take place. In the next version of the Plan, the District should review its rationale for closing the Bakersfield-Muni SLAMS monitors without EPA approval and take appropriate action to address the errors identified in these comments. Altering the monitoring network without EPA approval and without appropriate notice can jeopardize the District's ability to measure progress toward attainment of the ozone and PM2.5 NAAQS. Considering the severe public health consequences of the District's poor air quality, the District should prioritize the maintenance of a comprehensive and reliable air monitoring network by adhering to pertinent regulations.

The latest draft of the Plan provides more information on the District's plans for its air monitoring network, particularly as they relate to the siting of near roadway monitors. However, there are still many gaps to be filled. We urge the District to provide more detailed information explaining the rationale for site selection and for any planned changes to the monitoring network. The District must also ensure that its plans for monitor closures and mergers adhere to all applicable regulations before it takes any action.

Sincerely,

Adenike Adeyeye
Research & Policy Analyst
Earthjustice

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, DC INTERNATIONAL

October 18, 2012

Jennifer Ridgway
San Joaquin Valley Unified Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Re: San Joaquin Valley Unified Air Pollution Control District, 2012 Air Monitoring Network Plan

Dear Ms. Ridgway,

Thank you for the opportunity to provide comments on the San Joaquin Valley Unified Air Pollution Control District's ("District") 2012 Air Monitoring Network Plan ("Plan"). This report provides information that greatly helps us and other interested parties understand and participate in the District's air monitoring efforts. These comments, submitted on behalf of the Central Valley Air Quality Coalition, the Center for Race, Poverty, and the Environment, and the National Parks Conservation Association, ask for clarification and additional information regarding some aspects of the plan, to further facilitate our understanding of the District's approach to meeting federal air monitoring requirements.

Although the District describes the Plan requirements in the introduction, the criteria behind those requirements are not fully explained. For example, on page 7, the Plan details the different monitoring site types, such as sites near the highest pollutant concentrations, sites in areas of high population density, and sites to identify background concentration levels. This section would be more helpful if it described how the District assigned specific monitors to the different site types. For sites in high population areas, what is the population threshold used to determine which sites fall under the "population oriented" site type? Or, if a threshold is not used, how are those sites determined? Similar questions should be answered for the remainder of the site types.

Answering these questions for each of the site types would also provide important information about the characteristics of each monitoring site. Appendices A and B offer brief descriptions of each of the monitoring sites, but neither provides the site-specific descriptions that would be especially useful in understanding the scope of the District's monitoring network. Appendix A contains brief narrative descriptions of each monitoring site, with a heavy focus on regional characteristics. For example, the Bakersfield-Muni site description gives a brief overview of the city of Bakerfield's location and pollution profile. It does not provide specific information about the area in which the monitor is sited. Is it in a residential area? An industrial area? This and other pertinent information should be added to the descriptions in Appendix A. In Appendix B,

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there are tables that provide some site-specific information, but these still do not supply the type of information requested in the questions above. Adding more information about the area in which a monitor is sited would offer a more complete picture of air monitoring in the District, when reviewed in conjunction with the detailed site information in Appendix B and the more general site descriptions in Appendix A.

This information would also allow for more meaningful comments on expected changes to the air monitoring network in the District. The summary of planned changes lists potential site mergers without any explanation of the reasons for merging the sites. While, for example, the District explains that it will include NOy monitors for specific sites "to comply with the regulations for PAMS Type 3 sites,"[1] the same section simply states that "[t]he District may investigate consolidating"[2] two different sites in a given city. The District, in this Plan, considers consolidating six sites: Merced-M Street and Merced-Coffee, Madera-Pump and Madera-City, and Fresno-Pacific and Fresno-Drummond. What prompted the District to contemplate consolidating these sites? What benefits will consolidation provide to the monitoring network? How did the District decide where to locate the consolidated monitors? Answers to these questions are necessary to enable the public to review and comment on the District's proposed plans as required by 40 CFR §58.10(c).

The District's monitoring system will be required to comply with EPA goals regarding near-highway monitoring for 1-hour NO_2 and PM2.5 concentrations, but there is no discussion of these goals in the Plan. Has the District considered how it will comply with near-highway monitoring requirements? Will the requirements impact other monitors within the system in any way? Providing information about compliance with new goals along with other information about planned changes to the system would offer a more comprehensive overview of the future of the monitoring network.

The public would also benefit from clarification on the foundation of the District's particulate matter ("PM") monitoring system. The District cites the California Regional Particulate Air Quality Study ("CRPAQS") as the basis for the PM monitoring system. It also notes that the CRPAQS final report compiling key data and analysis of particulates in the region was "expected to be completed in June 2012."[3] Has that report been completed? How did it influence system design? If the report is complete, please make it available so that the public can use it to evaluate the District's monitoring approach more fully.

---

[1] San Joaquin Valley Air Pollution Control District. (September 13, 2012). *2012 Air Monitoring Network Plan*, at 39.
[2] *Id.*
[3] *Id.*, at 18.

In conclusion, the Plan supplies important information about the status of the air monitoring network in the District. But, without greater detail about how District site selection satisfies relevant criteria, the District's rationale for potential site mergers, the research that influenced the design of the monitoring system, and the areas in which monitors are sited, meaningful public review and comment cannot occur. We look forward to receiving more detailed responses to the questions and comments posed in this letter.

Sincerely,

Adenike Adeyeye
Research & Policy Analyst
Earthjustice

APPENDIX H: Notices of Publication

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THE RECORD
PROOF OF PUBLICATION

STATE OF CALIFORNIA
COUNTY OF SAN JOAQUIN

THE UNDERSIGNED SAYS:

I am a citizen of the United States and a resident of San Joaquin County; I am over the age of 18 years and not a part to or interested in the above-entitled matter. I am the principal clerk of the printer of THE RECORD, a newspaper of general publication, printed and published daily in the City of Stockton, County of San Joaquin by the Superior Court of the County of San Joaquin, State of California, under the date of February 26, 1952, File No. 52857, San Joaquin County Records; that the notice of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published each regular and entire issue of said newspaper and not in any supplement thereof on the following dates,
To wit, March 13 2013

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 13, 2013 In Stockton California

Carlette Schnell,
The Record

0000954073

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

NOTICE IS HEREBY GIVEN that a 30-day public commenting period and public workshop are being held on the San Joaquin Valley Unified Air Pollution Control District's 2012 Air Monitoring Network Plan. The 2012 Air Monitoring Network Plan provides information regarding air monitoring network activities in the San Joaquin Valley, and includes information regarding the site selection process for new NO2 near-road air monitoring stations in Bakersfield and Fresno.

Written comments should be submitted by April 15, 2013 and addressed to Jennifer Ridgway at SJVUAPCD, 1990 E. Gettysburg Avenue, Fresno, CA 93726 or via email at Jennifer.Ridgway@valleyair.org. Copies of the aforementioned documents can be obtained by calling (559) 230-6000, or via download from the District's website at:

http://www.valleyair.org/notices/public_notices_idx.htm#Other Notices

The public workshop will be presented in person and via video teleconferencing (VTC) at the following locations on the following day and time:

Thursday March 28, 2013 at 9:30 AM
In-person workshop: Fresno
VTC: Bakersfield and Modesto
Also available via webcast

Draft materials and webcast entry will be available prior to the workshop at:
www.valleyair.org/workshops/public_workshops_idx.htm

District Offices
Central Region Office, 1990 E. Gettysburg Ave., Fresno, CA 93726
Northern Region Office, 4800 Enterprise Way, Modesto, CA 95356
Southern Region Office, 34946 Flyover Court, Bakersfield, CA 93308

If you need assistance obtaining an electronic or paper copy of the workshop materials, please call Ms. Noemi Calderon at (559) 230-6000.

To request Spanish interpreting services, please contact Ana Reyes at (559) 230-6000 at least 7 days prior to the meeting date. Para solicitar servicios de interpretación en Español, por favor póngase en contacto con Ana Reyes al (559) 230-6000 por lo menos 7 días antes de le fecha de la reunión.

You can receive District news, workshop notices, and other important information via email by subscribing to one of the District's email notification lists at www.valleyair.org/ lists/list.htm. The email notification lists are set up and maintained by the end users and not by District staff. Individuals may add or delete their names from these lists at any time.

For additional information, please contact Jennifer Ridgway at (559) 230-6000.

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CNS-2455229#
THE RECORD #954073

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DECLARATION OF PUBLICATION
(C.C.P. S2015.5)

COUNTY OF STANISLAUS
STATE OF CALIFORNIA

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am a printer and principal clerk of the publisher of **THE MODESTO BEE,** which has been adjudged a newspaper of general circulation by the Superior Court of the County of **STANISLAUS,** State of California, under the date of **February 25, 1951, Action No. 46453.** The notice of which the annexed is a printed copy has been published in each issue thereof on the following dates, to wit:

MARCH 13, 2013

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration was executed at **MODESTO,** California on

MARCH 13, 2013

Marilyn Gonzalez

(Signature)

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

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To request Spanish interpreting services, please contact Ana Reyes at (559) 230-6000 at least 7 days prior to the meeting date. Para solicitar servicios de interpretación en Español, por favor póngase en contacto con Ana Reyes al (559) 230-6000 por lo menos 7 días antes de la fecha de la reunión.

You can receive District news, workshop notices, and other important information via email by subscribing to one of the District's email notification lists at www.valleyair.org/lists/list.htm. The email notification lists are set up and maintained by the end users and not by District staff. Individuals may add or delete their names from these lists at any time.

For additional information, please contact Jennifer Ridgway at (559) 230-6000.
3/13/13
CNS-2458226#
THE MODESTO BEE
MOD-5072

A00000301823

Declaration of Publication

(2015.5 C.C.P)

STATE OF CALIFORNIA)
) **ss.**
County of Merced)

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the Merced Sun-Star, a newspaper of general circulation, printed and published in the City of Merced, County of Merced, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Merced, State of California, under the date of July 14, 1964, Case Number 33224 that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

March 13, 2013

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Marilyn Gonzalez

Signature

Date: MARCH 13, 2013

This space reserved for County Clerk's Filing Stamp

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

NOTICE IS HEREBY GIVEN that a 30-day public commenting period and public workshop are being held on the San Joaquin Valley Unified Air Pollution Control District's 2012 Air Monitoring Network Plan. The 2012 Air Monitoring Network Plan provides information regarding air monitoring network activities in the San Joaquin Valley, and includes information regarding the site selection process for new NO2 near-road air monitoring stations in Bakersfield and Fresno.

Written comments should be submitted by April 15, 2013 and addressed to Jennifer Ridgway at SJVUAPCD, 1990 E. Gettysburg Avenue, Fresno, CA 93726 or via email at Jennifer.Ridgway@valleyair.org. Copies of the aforementioned documents can be obtained by calling (559) 230-6000, or via download from the District's website at:

http://www.valleyair.org/notices/public_notices_idx.htm#Other Notices

The public workshop will be presented in person and via video teleconferencing (VTC) at the following locations on the following day and time:

Thursday March 28, 2013
at 9:30 AM
In-person workshop: Fresno
VTC: Bakersfield and Modesto
Also available via webcast

Draft materials and webcast entry will be available prior to the workshop at: www.valleyair.org/workshops/public_workshops_idx.htm

District Offices
Central Region Office, 1990 E. Gettysburg Ave., Fresno, CA 93726
Northern Region Office, 4800 Enterprise Way, Modesto, CA 95356
Southern Region Office, 34946 Flyover Court, Bakersfield, CA 93308

If you need assistance obtaining an electronic or paper copy of the workshop materials, please call Ms. Noemi Calderon at (559) 230-6000.

To request Spanish interpreting services, please contact Ana Reyes at (559) 230-6000 at least 7 days prior to the meeting date. Para solicitar servicios de interpretacion en Espanol, por favor pongase en contacto con Ana Reyes al (559) 230-6000 por lo menos 7 dias antes de le fecha de la reunion.

You can receive District news, workshop notices, and other important information via email by subscribing to one of the District's email notification lists at www.valleyair.org/lists/list.htm. The email notification lists are set up and maintained by the end users and not by District staff. Individuals may add or delete their names from these lists at any time.

For additional information, please contact Jennifer Ridgway at (559) 230-6000.
3/13/13
CNS-2455225#
MERCED SUN-STAR
SS-139616 3/13

A0000030118 49

Proof of Publication

(2015.5 C.C.P.)

NOTICE OF PUBLIC WORKSHOP

& COMMENTING PERIOD RE:

2012 AIR MONITORING NETWORK PLAN

SJVUAPCD

STATE OF CALIFORNIA)
) ss.
County of Madera)

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the Madera Tribune, a newspaper of general circulation, published in the City of Madera, County of Madera, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Madera, State of California, under the date of November 9, 1966, Case Number 4875 that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

MARCH 13, 2013

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

Date: March 13, 2013

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

NOTICE IS HEREBY GIVEN that a 30-day public commenting period and public workshop are being held on the San Joaquin Valley Unified Air Pollution Control District's 2012 Air Monitoring Network Plan. The 2012 Air Monitoring Network Plan provides information regarding air monitoring network activities in the San Joaquin Valley, and includes information regarding the site selection process for new NO_2 near-road air monitoring stations in Bakersfield and Fresno.

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http://www.valleyair.org/notices/public_notices_idx.htm#Other Notices

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Also available via webcast

Draft materials and webcast entry will be available prior to the workshop at: www.valleyair.org/workshops/public_workshops_idx.htm

District Offices
Central Region Office, 1990 E. Gettysburg Ave., Fresno, CA 93726
Northern Region Office, 4800 Enterprise Way, Modesto, CA 95356
Southern Region Office, 34946 Flyover Court, Bakersfield, CA 93308

If you need assistance obtaining an electronic or paper copy of the workshop materials, please call Ms. Noemi Cardenas at (559) 230-6000.

To request Spanish interpreting services, please contact Ana Reyes at (559) 230-6000 at least 7 days prior to the meeting date. Para solicitar servicios de interpretación en Español, por favor póngase en contacto con Ana Reyes al (559) 230-6000 por lo menos 7 días antes de la fecha de la reunión.

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For additional information, please contact Jennifer Ridgway at (559) 230-6000.

3/13/13
CNS-2468224#
MADERA TRIBUNE
No. 19969 - March 13, 2013

Proof of Publication - The Madera Tribune, P.O. B
Adjudged a newspaper of general circulation by cc
The Madera

A0000030139 59

CA NEWSPAPER SERVICE

BILLING DEPT

PO BOX 60460

LOS ANGELES , CA 90060

PROOF OF PUBLICATION

COUNTY OF FRESNO

PUBLIC NOTICE

#39172

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

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Northern Region Office, 4800 Enterprise Way, Modesto, CA 95356
Southern Region Office, 34946 Flyover Court, Bakersfield, CA 93308

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For additional information, please contact Jennifer Ridgway at (559) 230-6000.
3/13/13
CNS-2455228#
THE FRESNO BEE

The undersigned states:

McClatchy Newspapers in and on all dates herein stated was a corporation, and the owner and publisher of The Fresno Bee.

The Fresno Bee is a daily newspaper of general circulation now published, and on all-the-dates herein stated was published in the City of Fresno, County of Fresno, and has been adjudged a newspaper of general circulation by the Superior Court of the County of Fresno, State of California, under the date of November 22, 1994, Action No. 520058-9.

The undersigned is and on all dates herein mentioned was a citizen of the United States, over the age of twenty-one years, and is the principal clerk of the printer and publisher of said newspaper; and that the notice, a copy of which is hereto annexed, marked Exhibit A, hereby made a part hereof, was published in The Fresno Bee in each issue thereof (in type not smaller than nonpareil), on the following dates.

Mar 13, 13

A0000030139 63

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated MARCH 13, 2013

Petra Dejado

TheSentinel

Lee Central California Newspapers
P.O. BOX 9
HANFORD, CALIFORNIA 93232
PHONE 888-790-0915
Sentinel_Finance@lee.net

Certificate

Calif.Newspaper Serv.Bureau-Attn:
Billing-Legals
PO Box 60460
Los Angeles, CA 90060

ACCOUNT #	1957	**DESCRIPTION**	
AD #	0000146947	**SIZE**	1 x 9.83
INVOICE DATE	3/13/2013	**TIMES**	3
		DATES APPEARED	3/13/2013

Publication - **The Hanford Sentinel**

State of California

County of **Kings**

I am a citizen of the United States and a resident of the county foresaid; I am over the age of eighteen years, and not a part to or interested in the above-entitled matter. I am the principal clerk of **The Hanford Sentinel**, a newspaper of general circulation, printed and published daily in the city of Hanford, County of Kings, and which newspaper has been adjudged a newspaper of general circulation by the superior court of the County of Kings, State of California, under the date of October 23, 1951, case number 11623,

That I know from my own personal knowledge the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

Published on: 3/13/2013

Filed on: 3/13/2013

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Kings County, California

This Day 13 of MAR 2013

Signature Terri Rocha

AD#146947
SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

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Written comments should be submitted by April 15, 2013 and addressed to Jennifer Ridgway at SJVUAPCD, 1990 E. Gettysburg Avenue, Fresno, CA 93726 or via email at Jennifer.Ridgway@valleyair.org. Copies of the aforementioned documents can be obtained by calling (559) 230-6000, or via download from the District's website at:

http://www.valleyair.org/notices/public_notices_idx.htm#Other Notices

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Also available via webcast

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District Offices
Central Region Office, 1990 E. Gettysburg Ave., Fresno, CA 93726
Northern Region Office, 4800 Enterprise Way, Modesto, CA 95356
Southern Region Office, 34946 Flyover Court, Bakersfield, CA 93308

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For additional information, please contact Jennifer Ridgway at (559) 230-6000.
3/13/13
CNS-2455223#
THE HANFORD SENTINEL
Publish: March 13, 2013

Advertiser: CALIFORNIA NEWSPAPER SERV/TUL
915 E FIRST ST
LOS ANGELES , CA 90012

0000248896

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

Notice of Public Workshop and Commenting Period on the 2012 Air Monitoring Network Plan

NOTICE IS HEREBY GIVEN that a 30-day public commenting period and public workshop are being held on the San Joaquin Valley Unified Air Pollution Control District's 2012 Air Monitoring Network Plan. The 2012 Air Monitoring Network Plan provides information regarding air monitoring network activities in the San Joaquin Valley, and includes information regarding the site selection process for new NO2 near-road air monitoring stations in Bakersfield and Fresno.

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For additional information, please contact Jennifer Ridgway at (559) 230-6000.
3/13/13
CNS-2455230#
VISALIA TIMES-DELTA #248896

RE: SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION

I, Marian Christie, Accounting Clerk, for the below mentioned newspaper(s), am over the age of 18 years old, a citizen of the United States and not a party to, or have interest in this matter. I hereby certify that the attached advertisement appeared in said newspaper on the following dates:

Newspaper: **Visalia Times-Delta**

3/13/2013

I acknowledge that I am a principal clerk of said paper which is printed and published in the City of Visalia, County of Tulare, State of California. The Visalia Times Delta was adjudicated a newspaper of general circulation on July 25, 2001 by Tulare County Superior Court Order No. 41-20576. The Tulare Advance Register was adjudicated a newspaper of general circulation on July 25, 2001 by Superior Court Order No. 52-43225.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 13th day of March, 2013 in Visalia, California.

Marian Christie

Declarant

PROOF OF PUBLICATION

The BAKERSFIELD CALIFORNIAN
P. O. BOX 440
BAKERSFIELD, CA 93302

CAL NEWSPAPER SERVICE
PO BOX 60460
LOS ANGELES, CA 90060

Ad Number:	13083557	**PO #:**	2445524
Edition:	TBC	**Run Times**	1
Class Code	Legal Notices		
Start Date	2/15/2013	**Stop Date**	2/15/2013
Billing Lines		**Inches**	
Total Cost		**Account**	1CAL07A
Billing Address	CAL NEWSPAPER SERVICE PO BOX 60460 LOS ANGELES,CA 90060		

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER
AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT: 2/15/13

ALL IN YEAR 2013

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Jessi Price

DATED AT BAKERSFIELD CALIFORNIA
2/15/13

Printed on 2/15/2013 at 9:15:18AM

Solicitor I.D.: 0

First Text
NOTICE OF PRELIMINARY DECISION FOR THEPR

Ad Number 13083557

NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF AN AUTHORITY TO CONSTRUCT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Pacific Process Systems for a transportable well-test flare, at various unspecified locations within the SJVAPCD.
The analysis of the regulatory basis for this proposed action, Project #S-1130017, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.
CNS-2445524#
February 15, 2013
(13083557 (13083557)

A0000029872 34