Annual Network Plan

Covering Monitoring Operations in

26 California Air Districts

June 2025

CALIFORNIA
AIR RESOURCES BOARD

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Appendices

Abbreviations used in this document

AADT	Annual Average Daily Traffic
AB	Assembly Bill
ADAM	Aerometric Data Analysis and Management
ANP	Annual Network Plan
APCD	Air Pollution Control District
AQMD	Air Quality Management District
AQMIS	Air Quality and Meteorological Information System
AQS	Air Quality System
AQview	Community Air Quality Viewer
ARD	Air Resources District
AQDA	Air Quality Data Action
CAMP	Community Air Monitoring Plans
CAN	Corrective Action Notification
CARB	California Air Resources Board
CAS	California Approved Samplers
CASTNET	Clean Air Status and Trends Network
CBO	Community-based Organization
CBSA	Core-Based Statistical Area
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CSC	Community Steering Committees
CSN	Chemical Speciation Network
DV	Design Value
EJ	Environmental Justice
EMP	Enhanced Monitoring Plan
FEM	Federal Equivalent Method
FRM	Federal Reference Method
FRV	Flow Rate Verifications
GHG	Greenhouse Gases
IMPROVE	Interagency Monitoring of Protected Visual Environments
MCAGCC	Marine Corps Air Ground Combat Center
MLD	Monitoring and Laboratory Division
MQO	Measurement Quality Objectives
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standard
NCore	National Core multipollutant network monitoring Station
NIST	National Institute of Standards and Technology
N_2O	Nitrous Oxide

NO_2	Nitrogen Dioxide
NPS	National Park Service
OMB	Office of Management and Budget
OTR	Ozone Transport Region
PAMS	Photochemical Assessment Monitoring Stations
Pb	Lead
PEP	Performance Evaluation Program
PM_{10}	Particulate Matter with an aerodynamic diameter ≤10 micrometers
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter ≤2.5 micrometers
PQAO	Primary Quality Assurance Organization
PWEI	Population Weighted Emissions Index
QAS	Quality Assurance Section
QC	Quality Control
QMB	Quality Management Branch
QMS	Quality Management Section
SB	Senate Bill
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations
SLS	Standards Laboratory Section
SMMI	Statewide Mobile Monitoring Initiative
SNAPS	Study of Neighborhood Air near Petroleum Sources
SO_2	Sulfur Dioxide
SPM	Special Purpose Monitor
STN	Speciated Trends Network
TPY	Tons per Year
TSA	Technical Systems Audit
TTP	Through the Probe
U.S. EPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

Executive Summary

The Annual Network Plan is required by Title 40, Code of Federal Regulations (CFR), Part 58.10 and provides detailed information about criteria pollutant monitoring sites and instruments operating in California. It is due by July 1st of each year to the U.S. Environmental Protection Agency (U.S. EPA) after a 30-day public comment period. Accurately measuring air quality is the foundation of California's efforts to reduce air pollution and meet air quality standards. For more than 50 years, California has maintained one of the most extensive air monitoring networks in the world, collecting data on a wide range of pollutants. The information gathered from these networks makes it possible to track progress in cleaning the air and identify the most effective actions needed to meet air quality standards.

The California Air Resources Board (CARB) and California's 35 local air districts, 26 of which are covered in this plan, have been measuring ambient air quality using a variety of stationary monitoring networks supplemented by mobile platforms including cars, aircraft, and ships. From the very beginning, California's air monitoring program has been a partnership between government agencies at the federal, State, and local level, along with universities and more recently with engaged community members and industry representatives.

California's different air monitoring networks are designed to meet a range of regulatory requirements such as compliance with the federal Clean Air Act, as well as to help address research and public health priorities. Over time, the types of air pollutants being monitored, and the extent of the air monitoring networks have varied as a function of new legislative mandates, community concerns, as well as our success in improving air quality in many parts of California. Air monitoring data outreach such as the Air Quality and Meteorological Information System (AQMIS), Aerometric Data Analysis and Management (ADAM), Community Air Quality Viewer (AQview), Air Quality Index, and AirNow program allow people and companies to take precautions by avoiding the outdoors or minimizing activities that contribute to air pollution when levels are unhealthy.

This executive summary briefly describes the main types of monitoring that are conducted in California. The focus of this report is on criteria pollutant monitoring being conducted by governmental agencies using regulatory grade monitoring instruments. This report does not discuss the details of the extensive networks of low-cost sensors installed by agencies, community groups, academics, and others. It also does not discuss special purpose monitoring of limited duration (e.g. emergency response, wildfire smoke, scientific studies).

Criteria Pollutant Monitoring

The majority of California's governmental air monitoring resources, reflected in the current statewide network of approximately 250 regulatory monitoring stations, have been dedicated to measuring ambient concentrations of criteria pollutants which are ground level ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb).

For each of these criteria pollutants, the CFR specifies a list of acceptable instruments and methods, the frequency at which samples are to be collected, and how many instruments must be duplicated at the same location for each region. The CFR also details standards to be used for locating air monitoring sites (such as population, local traffic counts, local emission sources, at risk communities, etc.), number of sites located in each region, and the appropriate scale (e.g., neighborhood, urban, and regional) for the spatial objective of the particular pollutant.

Data from these monitoring networks are used for determining the attainment status for national and State ambient air quality standards, supporting public information services, forecasting expected high pollution events, supporting the development of emissions reduction programs, and supporting air quality research studies. Monitoring data must undergo review and validation process by the agency collecting the data before the data is deemed final for regulatory purposes. Because this type of monitoring often requires significant infrastructure and resources, these methods have limitations for widespread deployment as part of community air monitoring efforts.

Additional Types of Air Monitoring Not Covered in the Annual Network Plan

***Toxic Air Contaminants Monitoring*:** Beginning in the 1980s, with the recognition of the health risks posed by a wide range of chemicals, California and the local air districts deployed a network of approximately 35 air toxics monitoring stations. Each of these stations take samples of toxic compounds which are then analyzed using specialized equipment. A few examples are volatile organic compounds, carbonyl compounds, toxic metals, and hexavalent chromium.

Most air toxics monitoring methods involve collecting air samples in the field and returning them to the laboratory for subsequent analysis. One significant limitation is that data from these methods may take weeks, or in some cases months after sampling to become available as these sophisticated methods often require labor intensive analytical procedures. Air toxic monitoring data are used to identify sources contributing to air toxic pollution and trends in the concentration of air toxics over time. Data can be used to support regulatory and enforcement actions when collected in a scientifically defensible manner.

***Greenhouse Gas Emission Monitoring*:** With the passage of the California Global Warming Solutions Act of 2006 (AB 32), CARB collaborated with federal agencies and universities to deploy a network of 15 tall towers and other stations across California to measure greenhouse gases (GHG), study regional GHG emissions trends throughout the state, and evaluate regional and statewide emissions inventories.

Evaluating regional and statewide GHG emissions requires highly accurate and precise measurements of ambient GHGs. The GHG network currently uses state-of-the-art air monitoring instrumentation (cavity ringdown spectrometry) to measure carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). In conjunction with the ground-based network, airborne and spaceborne remote sensing measurements are conducted to screen large spatial regions for methane "hot spots".

***Remote Sensing*:** Remote sensing instrumentation measures reflected or emitted radiation to collect information about air pollutant concentrations and meteorological conditions. Remote sensing instruments can be deployed on ground-based (mobile and stationary), airborne (i.e., aircraft), and spaceborne (i.e., satellites) platforms. Fenceline remote sensing applications can monitor emissions from facilities such as refineries. When deployed on aircraft or satellites, remote sensing systems can survey large spatial areas and identify the general location of concentrated air pollution.

***Community-Scale Air Monitoring*:** Recognizing the need to understand air quality at the neighborhood level, CARB and the local air districts have periodically undertaken community-focused air monitoring studies. With the advent of low-cost air sensors in the last decade, many community groups and individuals are now also measuring air quality and deploying their own grassroots monitoring networks. As a result, the community-level air monitoring network is continually expanding throughout California neighborhoods by community members, universities, private entities, and government agencies.

Continued usage of fenceline monitoring, advancements in air sensors, and additional mobile monitoring studies are important pieces to local air monitoring programs. Community-level air monitoring programs are expected to continue expanding in California with the ongoing implementation of Assembly Bill 617 (AB 617), which was passed in 2017. Section 9 of this report includes some high-level discussion of community-scale air monitoring activities in California.

Conclusion

Monitoring networks and studies provide critical information for identifying and mitigating California's most significant air quality challenges. This Annual Network Plan documents California's network of regulatory ambient air quality monitors and shows that they meet the federal air monitoring and quality assurance requirements of 40 CFR 58.10 and Appendices A through E.

Section 1: Introduction

Federal regulations require state and local agencies that conduct ambient air monitoring for regulatory purposes to submit an Annual Network Plan (ANP) to U.S. EPA annually. ANPs are required to include detailed information about sites and instruments operating in the ambient air monitoring network. This ANP meets the federal regulatory requirements set forth in 40 CFR 58.10 and Appendices A through E.

The CARB Primary Quality Assurance Organization (PQAO) is comprised of 32 of the 35 local air districts in California. The air districts in the CARB PQAO may elect to prepare their own ANP or have their information included in the CARB ANP. The CARB ANP covers the monitoring networks of 26 air districts within the CARB PQAO. Six air districts in the CARB PQAO will prepare their own ANPs and submit them directly to U.S. EPA. Three other air districts in California, the Bay Area Air Quality Management District (AQMD), San Diego County Air Pollution Control District (APCD), and South Coast AQMD represent their own PQAOs and are responsible for preparing their own ANPs and submitting them directly to U.S. EPA.

The 2025 ANP details the operations of the monitoring networks in 2024 and describes the changes that are planned to occur within the next 18 months. Consistent with direction from U.S. EPA, this ANP describes monitors operated by air districts, CARB, and other agencies such as the National Park Service (NPS), within the jurisdictions of the air districts covered by this report. As required by federal regulations, this ANP includes detailed information about monitors using Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM) that are included in the State and Local Air Monitoring Station (SLAMS) network, National Core (NCore) multipollutant monitoring station, Chemical Speciation Network (CSN), Special Purpose Monitor (SPM) stations, and Photochemical Assessment Monitoring Stations (PAMS).

Areas Covered in this Network Plan

The geographic boundaries of the 26 air districts covered in this ANP as well as the air districts preparing their own ANPs are identified in Table 1 and Figure 1. Monitoring sites operated by air districts that are not covered by this ANP are included when necessary to demonstrate fulfillment of federal monitoring requirements.

Public Inspection and Comment Period

The 2025 ANP will be available for a 30-day public inspection and comment period prior to its submittal to U.S. EPA. If public comments are received, CARB will provide responses to the comments in Appendix E when this ANP is submitted to U.S. EPA.

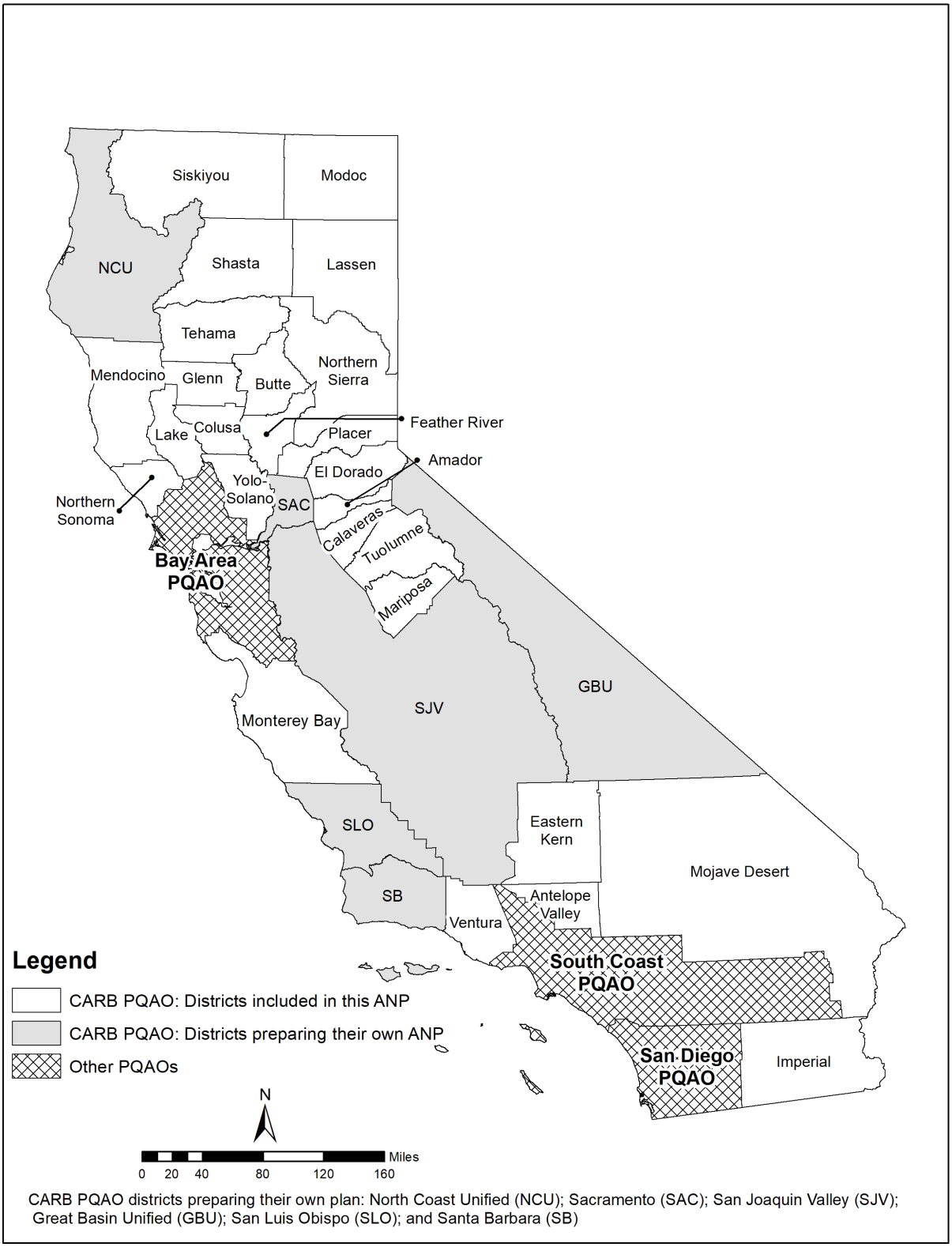
The final version of the 2025 ANP is available for download from *https://www.arb.ca.gov/aqd/amnr/amnr.htm*.

Table 1: Districts in the CARB Primary Quality Assurance Organization

Districts Included in the CARB ANP	
Amador County APCD	Mendocino County AQMD
Antelope Valley AQMD	Modoc County APCD*
Butte County AQMD	Mojave Desert AQMD
Calaveras County APCD	Monterey Bay ARD
Colusa County APCD	Northern Sierra AQMD
Eastern Kern APCD	Northern Sonoma County APCD
El Dorado County AQMD	Placer County APCD
Feather River AQMD	Shasta County AQMD
Glenn County APCD	Siskiyou County APCD
Imperial County APCD	Tehama County APCD
Lake County AQMD	Tuolumne County APCD
Lassen County APCD*	Ventura County APCD
Mariposa County APCD	Yolo-Solano AQMD
Districts Drafting Their Own ANP	
Great Basin Unified APCD	San Joaquin Valley APCD
North Coast Unified AQMD	San Luis Obispo County APCD
Sacramento Metropolitan AQMD	Santa Barbara County APCD

* Lassen County APCD and Modoc County APCD are covered by this ANP; however, no ambient air quality monitors are currently sited in these districts.

Figure 1: California Primary Quality Assurance Organizations



CARB PQAO districts preparing their own plan: North Coast Unified (NCU); Sacramento (SAC); San Joaquin Valley (SJV); Great Basin Unified (GBU); San Luis Obispo (SLO); and Santa Barbara (SB)

Section 2: Monitoring Network Overview

California's ambient air monitoring network includes over 250 sites and more than 700 monitors, making it one of the most extensive in the world. Many regions in California are characterized by complex terrain, variable meteorological conditions, and diverse emission sources. A large monitoring network is critical for assessing the State's progress in meeting clean air standards, understanding spatial and temporal variation in air pollutants, and evaluating pollutant exposure. Monitors are operated by CARB, air districts, and other entities including the NPS, private contractors, and tribal authorities. Tribal monitors are not included in this report.

Ambient concentration data are collected for a wide variety of pollutants including ozone, particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), particulate matter with a diameter of 10 microns or less (PM_{10}), CO, NO_2, SO_2, and Pb, which are the federal criteria pollutants. Meteorological parameters, volatile organic compounds (VOCs), and a host of toxic air contaminants are also monitored at a number of sites. While toxics, VOCs, and meteorological monitoring play an integral role in California's air quality programs, the focus of this ANP, as specified by federal requirements, is on sites that conduct monitoring of the federal criteria pollutants, as well as PAMS data, within the jurisdiction of air districts covered by this ANP.

Although most sites monitor multiple pollutants, not all pollutants are monitored at every site because the data needs vary by locale. One fundamental purpose of air monitoring is to distinguish between areas where pollutant levels violate the ambient air quality standards and areas that meet ambient air quality standards. Areas in violation of a standard usually have increasingly stringent mandates to reduce the sources of pollution that result in the exceedances. Based in part on monitoring data, air districts develop strategies, programs, and regulations to achieve needed emission reductions. Data from the ambient air monitoring network are then used to assess the efficacy of those strategies, programs, and regulations.

The pollutants and the number of monitors at each monitoring site in the area covered by this ANP are shown in Table 2; additional site and monitor-level details are provided in Appendix A.

Table 2: Pollutants Monitored in the Districts Covered by this ANP

District	Site (AQS ID)	CO	NO_2	Ozone	SO_2	PM_{10}	$PM_{2.5}$	CARB Operated
Amador	Jackson-Clinton (06-005-0002)			1				Yes
Antelope Valley	Lancaster-Fairgrounds (06-037-9035)		1	1		1	1	
Butte	Chico-East (06-007-0008)	1	1	1		1	1	Yes
	Gridley (06-007-4001)						1	Yes
	Paradise-Clark (06-007-2003)			1			1	Yes
Calaveras	San Andreas (06-009-0001)			1		1	1	Yes
Colusa	Colusa-Sunrise Blvd (06-011-1002)			1		1	1	Yes
Eastern Kern	Canebrake (06-029-0017)					1		
	Mojave Pat Ave (06-029-0020)			1		1	1	Yes
	Ridgecrest-Ward (06-029-0018)					1	1	
El Dorado	Cool (06-017-0020)			1				Yes
	Echo Summit (06-017-0012)			1				Yes
	Placerville-Canal St (06-017-2004)			1				Yes
	South Lake Tahoe (06-017-0011)					1		Yes
Feather River	Sutter Buttes (06-101-0004)			1				Yes
	Yuba City (06-101-0003)		1	1		1	2	Yes
Glenn	Willows-Colusa (06-021-0003)			1		1	1	Yes
Imperial	Brawley-Main (06-025-0007)					1	1	
	Calexico-Ethel (06-025-0005)		1	1	1	1	2	Yes
	El Centro-9th (06-025-1003)		1	1		1	1	
	Niland-English (06-025-4004)			1		1		
	Westmorland (06-025-4003)			1		1		
Lake	Lakeport-S. Main (06-033-3002)			1		1	1	
Mariposa	Jerseydale (06-043-0006)			1				Yes
	Yosemite Village (06-043-1001)					1	1	Yes
	Yosemite NP-Turtleback (06-043-0003)*			1				
Mendocino	Fort Bragg-300 Dana (06-045-0010)					1		
	Ukiah-Municipal Airport (06-045-0011)			1				
	Ukiah-Library (06-045-0006)						1	
	Willits-Blosser (06-045-2003)						1	
Mojave Desert	Barstow (06-071-0001)		1	1		1		
	Blythe-Murphy (06-065-9003)			1				Yes
	Hesperia-Olive (06-071-4001)			1		1		
	Joshua Tree-Black Rock (06-071-9002)*			1				
	Lucerne Valley (06-071-0013)					1		
	Mojave NP (06-071-1001)*			1				
	Trona-Athol/Telescope (06-071-1234)		1	1		1		
	Victorville-Park (06-071-0306)		1	1		1	2	

District	Site (AQS ID)	CO	NO_2	Ozone	SO_2	PM_{10}	$PM_{2.5}$	CARB Operated
Monterey Bay	Carmel Valley (06-053-0002)			1			1	
	Hollister (06-069-0002)			1		1	1	
	King City (06-053-0008)			1		1	1	
	Pinnacles NM (06-069-0003)			1				
	Salinas 3 (06-053-1003)	1	1	1			2	
	San Juan Bautista (06-069-0004)					1		
	San Lorenzo Valley (06-087-1005)						1	
	Santa Cruz (06-087-0007)			1			1	
Northern Sierra	Chester (06-063-1007)						1	
	Grass Valley (06-057-0005)			1			1	
	Portola (06-063-1010)						1	
	Quincy-N Church (06-063-1006)						1	
	Truckee-Fire Station (06-057-1001)						1	
Northern Sonoma	Cloverdale (06-097-0001)					1		
	Guerneville-Church (06-097-3002)					1		
	Healdsburg-Matheson (06-097-0002)					1		
Placer	Auburn-Atwood (06-061-0003)			1			1	
	Colfax-City Hall (06-061-0004)			1			1	
	Lincoln-Moore (06-061-2003)			1			1	
	Roseville-N Sunrise (06-061-0006)		1	1		1	1	Yes
	Tahoe City-Fairway (06-061-1004)			1			1	
Shasta	Lassen Volcanic NP (06-089-3003)*			1				
	Redding-Health Dept (06-089-0004)			1		1	2	
	Shasta Lake-Lake (06-089-0009)			1				
Siskiyou	Yreka (06-093-2001)			1			1	
Tehama	Red Bluff-Walnut (06-103-0007)			1		1	1	
	Tuscan Butte (06-103-0004)			1				Yes
Tuolumne	Sonora-Barretta (06-109-0005)			1				Yes
Ventura	El Rio-Rio Mesa School (06-111-3001)		1	1		1	1	
	Ojai-East Ojai (06-111-1004)			1			1	
	Piru-Pacific (06-111-0009)			1			1	
	Simi Valley-Cochran (06-111-2002)		1	1		1	2	
	Thousand Oaks (06-111-0007)			1			1	
Yolo-Solano	Davis-UCD Campus (06-113-0004)		1	1			1	Yes
	Vacaville-Merchant (06-095-3001)					1		
	Vacaville-Ulatis (06-095-3003)			1				
	West Sacramento-15th (06-113-2001)					1		
	Woodland-Gibson (06-113-1003)			1		1	2	

* These sites are operated by National Park Service (NPS).
Note: CARB operating sites are delineated with grey shading.

Section 3: Site and Monitoring Information

U.S. EPA requires that the ANPs include the federal site type, federal monitoring objective, and federal monitor type. These elements are described in the following sections and identified at the monitor-level in the detailed site reports in Appendix A.

Federal Site Type

Monitoring sites must be capable of informing air quality program managers about peak air pollution levels, typical levels in populated areas, air pollution transported into and out of a city or region, and air pollution levels near specific sources. For these reasons, U.S. EPA requires that each monitor at a site be designated, at a minimum, with one of the following site types established in the Air Quality System (AQS) database:

- Extreme Downwind
- Highest Concentration
- Maximum Ozone Concentration
- Maximum Precursor Emissions Impact
- Population Exposure
- Source Oriented
- Upwind Background
- General/Background
- Regional Transport
- Welfare Related Impacts
- Quality Assurance
- Other

U.S. EPA requires that a monitor be designated with an appropriate site type so that the data collected can be used to support a specific federal monitoring objective. The site type designations are at the monitor level rather than the site level because U.S. EPA has determined that a single site type may not be adequate to describe all of the monitors at a particular site.

Federal regulations note that the spatial scale of representativeness of a monitor should be consistent with the stated site type. The spatial scale of representativeness is a measure of the physical dimensions of the air mass through which pollutant

concentrations are expected to be relatively homogeneous. The scales of representativeness that are most relevant to ambient air monitoring are defined as follows:

- *Microscale*: Measured concentrations are expected to be similar for an area ranging from several meters up to about 100 meters.
- *Middle scale*: Measured concentrations are expected to be similar for areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometers.
- *Neighborhood scale*: Measured concentrations are expected to be similar within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range.
- *Urban scale*: Measured concentrations are expected to be similar within an area of city-like dimensions, on the order of 4 to 50 kilometers.
- *Regional scale*: Measured concentrations are expected to be similar within a rural area of reasonably homogeneous geography without large sources and extend from tens to hundreds of kilometers.
- *National and global scales*: These measurement scales represent concentrations characterizing the nation and the globe as a whole.

The spatial scale of representativeness that is generally most appropriate for each of the most common federal site types are shown in Table 3, which is based on Table D-1 in Appendix D of 40 CFR 58.

Table 3: Site Type and Recommended Spatial Scale

Appropriate Site Type	Appropriate Spatial Scales
Highest concentration	Micro, middle, neighborhood (sometimes urban or regional for secondarily formed pollutants)
Population exposure	Neighborhood, urban
Source oriented	Micro, middle, neighborhood
General background	Urban, regional
Regional transport	Urban, regional
Welfare-related impacts	Urban, regional

The types of monitoring sites and the spatial scales designated in the area covered by this ANP are listed in Table 4 and included in the detailed site reports in Appendix A. The site type is listed first followed by the spatial scale. Note that a monitor may have

more than one site type. Since local development may change the spatial scale of representativeness of a monitor, CARB periodically evaluates the relevant information to make sure the site type and spatial scale are still appropriate.

Table 4: Site Type and Spatial Scale in the Districts Covered by this ANP

District	Site	CO	NO_2	Ozone	SO_2	PM_{10}	$PM_{2.5}$
Amador	Jackson-Clinton			pop/n			
Antelope Valley	Lancaster-Fairgrounds		pop/m	pop/m		pop/n	pop/n
Butte	Chico-East	pop/n	pop/n	pop/n		pop/n	pop/n
	Gridley						pop/n
	Paradise-Clark			high/n			pop/n
Calaveras	San Andreas			high/n		gen/n	gen/n
Colusa	Colusa-Sunrise Blvd			gen/r		high,pop/n	pop/ n
Eastern Kern	Canebrake					gen,pop/r	
	Mojave Pat Ave			high/r		pop/u	high/u
	Ridgecrest-Ward					high/n	pop/n
El Dorado	Cool			high/r			
	Echo Summit			trans/r			
	Placerville-Canal St			high/n			
	South Lake Tahoe					pop/m	
Feather River	Sutter Buttes			high,trans/r			
	Yuba City		pop/n	high/n		pop/n	pop/n
Glenn	Willows-Colusa			pop/n		pop/n	pop/n
Imperial	Brawley-Main					pop/n	pop/n
	Calexico-Ethel		pop/n	high/n	pop/n	pop/n	pop/n
	El Centro-9th		pop/n	high/n		pop/n	pop/n
	Niland-English			pop/n		pop/n	
	Westmorland			pop/r		pop/m	
Lake	Lakeport-S. Main			pop/u		gen/n	pop/n
Mariposa	Jerseydale			high/r			
	Yosemite Village					pop/m	pop/ m
	Yosemite NP-Turtleback*			gen/r			
Mendocino	Fort Bragg-300 Dana					gen/n	
	Ukiah-Municipal Airport			pop/n			
	Ukiah-Library						pop/n
	Willits-Blosser						pop/n
Mojave Desert	Barstow		pop/m	pop/m		pop/n	
	Blythe-Murphy			pop/n			
	Hesperia-Olive			high/n		gen,pop/n	
	Joshua Tree-Black Rock*			high/r			

District	Site	CO	NO_2	Ozone	SO_2	PM_{10}	$PM_{2.5}$
	Lucerne Valley					pop/n	
	Mojave NP*			gen/r			
	Trona-Athol/Telescope		source/n	pop/n		high,source/n	
	Victorville-Park		pop/n	pop/n		pop/n	trans,pop/n
Monterey Bay	Carmel Valley			pop/n			high/n
	Hollister			high/n		high/n	high/u
	King City			high/n		high/n	pop/n
	Pinnacles National Park			trans/r			
	Salinas	pop/n	pop/n	pop/n			pop/n
	San Juan Bautista					pop/n	
	San Lorenzo Valley						high/n
	Santa Cruz			pop/n			pop/u
Northern Sierra	Chester						pop/n
	Grass Valley			pop/n			pop/n
	Portola						pop/n
	Quincy-N Church						pop/n
	Truckee-Fire Station						pop/n
Northern Sonoma	Cloverdale					pop/n	
	Guerneville-Church					pop/n	
	Healdsburg-Matheson					gen/u	
Placer	Auburn-Atwood			pop/n			pop/n
	Colfax-City Hall			pop/n			pop/n
	Lincoln-Moore			pop/n			pop/n
	Roseville-N Sunrise		pop/n	high/n		high/n	pop/n
	Tahoe City-Fairway			gen/u			gen/u
Shasta	Lassen Volcanic NP*			gen/r			
	Redding-Health Dept			pop,high/n		high/n	pop/n
	Shasta Lake-Lake			pop/n			
Siskiyou	Yreka			high,trans,pop/n			pop/n
Tehama	Red Bluff-Walnut			pop/n		high/n	gen/n
	Tuscan Butte			high/r			
Tuolumne	Sonora-Barretta			high/n			
Ventura	El Rio-Rio Mesa School		pop/u	pop/u		pop/n	pop/n
	Ojai-East Ojai			pop/u			pop/n
	Piru-Pacific			pop/u			high/n
	Simi Valley-Cochran		high/u	high/u		pop/n	high/n
	Thousand Oaks			pop/u			pop/n
Yolo-Solano	Davis-UCD Campus		pop/n	pop/n			pop/n
	Vacaville-Merchant					pop/n	

District	Site	CO	NO_2	Ozone	SO_2	PM_{10}	$PM_{2.5}$
	Vacaville-Ulatis			high,pop/n			
	West Sacramento-15th					pop/n	
	Woodland-Gibson			pop/n		pop/n	pop/ n

* These sites are operated by National Park Service (NPS).

Site Types: gen-general background; high-highest concentration; pop-population exposure; trans-regional transport; source-source oriented

Spatial Scales: m-middle scale; n-neighborhood scale; u-urban scale; r-regional scale

Federal Monitoring Objective

The federal monitoring objectives are defined in Appendix D of 40 CFR 58. Federal monitoring regulations require that each monitor measuring a criteria pollutant is sited to meet at least one monitoring objective. The three federal monitoring objectives are:

- To provide air quality data to the public in a timely manner;
- To support compliance with national ambient air quality standards (NAAQS); and
- To support air quality research studies.

Many air quality agencies operate monitors with multiple objectives in mind. For example, monitoring is conducted to provide both air quality data to the public as well as to support compliance with NAAQS. There are a number of monitoring purposes besides the federal monitoring objectives that are directly related to the needs of state and local agencies. Some of the most common State and local monitoring purposes include determination of agricultural and residential burn periods, geyser air monitoring, and state designations. These are outside of the scope of the ANP.

Federal Monitor Type

The federal monitor type refers to the agency operating the monitor or the specific purpose for which the monitor is operated. There are seven federal monitor types:

- SLAMS
- SPM
- Industrial
- Non-EPA federal
- Tribal
- EPA
- Other *

* U.S. EPA states that "Other" is intended for a monitor not addressed by 40 CFR Part 58. (i.e., it will not be allowed for criteria pollutants or monitoring network such as NCore, PAMS or NATTS).

Most monitors established and operated by state and local air agencies are identified as SLAMS. SLAMS monitors meet specific siting and quality assurance criteria defined in federal regulations. Some monitors are identified as SPMs and are operated by state and local monitoring agencies to fulfill very specific or short-term monitoring goals. SPMs are required to meet 40 CFR Part 58 Appendix A requirements, and

40 CFR Part 58 Appendix E requirements are optional. Many SPMs operated in California by the State and local agencies do fulfill these requirements. SPMs that operate for more than two years can be used by U.S. EPA to determine compliance with NAAQS.

In this ANP, all the monitors identified as non-EPA federal monitors are operated by the NPS. Industrial monitors and U.S. EPA monitors are not operated in the area covered by this ANP. Tribal monitors are operated on tribal lands by tribal entities and are outside of the scope of this ANP. Table 5 shows the types of monitors, their monitoring objectives and the network affiliations. Some monitors are operated under specific types of monitoring network programs. Examples of the network affiliations are CASTNET, PAMS, NCore, Near-road and CSN. The full list can be found at *https://aqs.epa.gov/aqsweb/documents/codetables/networks.html.*

Table 5: Monitoring Objective, Monitor Type, and Network Affiliation

District	Site	Monitoring Objective	Monitor Type	Network Affiliation
Amador	Jackson-Clinton	NAAQS Comparison	SLAMS	
Antelope Valley	Lancaster-Fairgrounds	NAAQS Comparison, Public Info.	SLAMS	
Butte	Chico-East	NAAQS Comparison, Public Info.	SLAMS	CSN Supplemental
	Gridley	Public Info.	Other	
	Paradise-Clark	NAAQS Comparison, Public Info.	SLAMS, Other	
Calaveras	San Andreas	NAAQS Comparison, Public Info.	SLAMS	
Colusa	Colusa-Sunrise Blvd	NAAQS Comparison, Public Info.	SLAMS, Other	
Eastern Kern	Canebrake	NAAQS Comparison	SLAMS	
	Mojave Pat Ave	NAAQS Comparison	SLAMS	
	Ridgecrest-Ward	NAAQS Comparison	SLAMS	
El Dorado	Cool	NAAQS Comparison	SLAMS	
	Echo Summit	NAAQS Comparison	SLAMS	
	Placerville-Canal St	NAAQS Comparison	SLAMS	
	South Lake Tahoe	NAAQS Comparison	SLAMS	
Feather River	Sutter Buttes	NAAQS Comparison	SLAMS	
	Yuba City	NAAQS Comparison	SLAMS	
Glenn	Willows-Colusa	NAAQS Comparison, Public Info.	SLAMS, Other	
Imperial	Brawley-Main	NAAQS Comparison	SLAMS	
	Calexico-Ethel	NAAQS Comparison	SLAMS	CSN Supplemental
	El Centro-9th	NAAQS Comparison	SLAMS	
	Niland-English	NAAQS Comparison	SLAMS	
	Westmorland	NAAQS Comparison	SLAMS	
Lake	Lakeport-S. Main	NAAQS Comparison	SLAMS	
Mariposa	Jerseydale	NAAQS Comparison	SLAMS	
	Yosemite Village	NAAQS Comparison, Public Info.	SLAMS, Other	

District	Site	Monitoring Objective	Monitor Type	Network Affiliation
	Yosemite NP-Turtleback*	NAAQS Comparison	non-EPA Federal	CASTNET
Mendocino	Fort Bragg-300 Dana	NAAQS Comparison	SLAMS	
	Ukiah-Municipal Airport	NAAQS Comparison	SLAMS	
	Ukiah-Library	NAAQS Comparison	SLAMS	
	Willits-Blosser	NAAQS Comparison	SLAMS	
Mojave Desert	Barstow	NAAQS Comparison	SLAMS	
	Blythe-Murphy	NAAQS Comparison, Public Info.	SLAMS	
	Hesperia-Olive	NAAQS Comparison	SLAMS	
	Joshua Tree-Black Rock*	NAAQS Comparison	non-EPA Federal	CASTNET
	Lucerne Valley	NAAQS Comparison	SLAMS	
	Mojave NP*	Public Info.	non-EPA Federal	
	Trona-Athol/Telescope	NAAQS Comparison	SLAMS	
	Victorville-Park	NAAQS Comparison	SLAMS	
Monterey	Carmel Valley	NAAQS Comparison	SLAMS, SPM	
	Hollister	NAAQS Comparison	SLAMS	
	King City	NAAQS Comparison	SLAMS, SPM	
	Pinnacles National Park	NAAQS Comparison	non-EPA Federal	
	Salinas	NAAQS Comparison	SLAMS	
	San Juan Bautista	NAAQS Comparison	SPM	
	San Lorenzo Valley	NAAQS Comparison	SLAMS	
	Santa Cruz	NAAQS Comparison	SLAMS	
Northern Sierra	Chester	Public Info.	non-EPA Federal	
	Grass Valley	NAAQS Comparison	SLAMS	
	Portola	NAAQS Comparison	SLAMS	CSN Supplemental
	Quincy-N Church	NAAQS Comparison	SLAMS	
	Truckee-Fire Station	NAAQS Comparison	SLAMS	
Northern Sonoma	Cloverdale	NAAQS Comparison	SLAMS	
	Guerneville-Church	NAAQS Comparison	SLAMS	
	Healdsburg-Matheson	NAAQS Comparison	SLAMS	
Placer	Auburn-Atwood	NAAQS Comparison	SLAMS	
	Colfax-City Hall	NAAQS Comparison, Public Info.	SLAMS, Other	
	Lincoln-Moore	NAAQS Comparison, Public Info.	SLAMS, Other	
	Roseville-N Sunrise	NAAQS Comparison, Public Info.	SLAMS, Other	
	Tahoe City-Fairway	NAAQS Comparison, Public Info.	SLAMS, Other	
Shasta	Lassen Volcanic NP	NAAQS Comparison, Research	non-EPA Federal	CASTNET
	Redding-Health Dept	NAAQS Comparison	SLAMS	
	Shasta Lake-Lake	NAAQS Comparison	SLAMS	
Siskiyou	Yreka	NAAQS Comparison	SLAMS	
Tehama	Red Bluff-Walnut	NAAQS Comparison	SLAMS	

District	Site	Monitoring Objective	Monitor Type	Network Affiliation
	Tuscan Butte	NAAQS Comparison	SLAMS	
Tuolumne	Sonora-Barretta	NAAQS Comparison	SLAMS	
Ventura	El Rio-Rio Mesa School	NAAQS Comparison	SLAMS	
	Ojai-East Ojai	NAAQS Comparison	SLAMS	
	Piru-Pacific	NAAQS Comparison	SLAMS	
	Simi Valley-Cochran	NAAQS Comparison, Public Info.	SLAMS	
	Thousand Oaks	NAAQS Comparison	SLAMS	
Yolo-Solano	Davis-UCD Campus	NAAQS Comparison, Public Info.	SLAMS, Other	
	Vacaville-Merchant	NAAQS Comparison	SLAMS	
	Vacaville-Ulatis	NAAQS Comparison	SLAMS	
	West Sacramento-15th	NAAQS Comparison	SLAMS	
	Woodland-Gibson	NAAQS Comparison	SLAMS	

Section 4: Additional Information about the Monitors

Required Monitor Information

U.S. EPA regulations (40 CFR Part 58.10) require that the annual monitoring network plan lists specific additional information that characterizes the nature and location of the monitors. U.S. EPA Region 9 identified all of the information that is required on each site/monitor basis. The full list of required information is included in Table 6. This detailed information for each site is provided in the detailed site tables in Appendix A of this ANP. Detailed information for CARB-operated sites outside of the CARB ANP is provided in Appendix D of this ANP.

Table 6: Required Detailed Monitoring Site Information

Local site name
AQS ID
GPS coordinates (decimal degrees)
Street address
County
Distance to roadways (meters)
Traffic count (AADT, year)
Groundcover (e.g., paved, vegetative, dirt, sand, gravel)
Representative statistical area name (i.e., MSA, CBSA, other)
Pollutant, POC
Primary / QA Collocated / Other
Parameter code
Basic monitoring objective(s)
Site type(s)
Monitor type
Network affiliation(s), if applicable
Instrument manufacturer and model
Method code
FRM/FEM/other
Collecting agency
Analytical lab (i.e., weigh lab, toxics lab, other)
Reporting agency
Spatial scale (e.g., micro, neighborhood)
Monitoring start date
Current sampling frequency
Required sampling frequency
Sampling season
Probe height (meters)
Distance from supporting structure (meters)
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters).
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters).
Distance from tree drip-lines (meters)
Distance to furnace or incinerator flue (meters)
Distance between monitors fulfilling a QA collocation requirement (meters).

Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (seconds)
Will there be changes within the next 18 months? (Y/N)
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)
Frequency of flow rate verification for manual PM samplers, including Pb samplers
Frequency of flow rate verification for automated PM analyzers
Frequency of one-point QC check for gaseous instruments
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors

Information on the continuous $PM_{2.5}$ non-FEM monitors

The federal regulations require that monitors are FRMs or FEMs and meet certain siting criteria in order for the data to be used for NAAQS comparison. While all continuous PM_{10} monitors discussed in this report are FEM monitors, there are some continuous $PM_{2.5}$ monitors that are non-FEMs and report under the pollutant codes of 88501 or 88502. Table 7 lists the continuous $PM_{2.5}$ non-FEM monitoring sites covered in this ANP. The continuous $PM_{2.5}$ data reported from these non-FEM monitors are excluded from NAAQS comparison. However, many of these non-FEM monitors are California Approved Samplers (CAS) and the data are used for State designation purposes and/or in AirNow for Air Quality Index reporting.

Table 7: Monitoring Sites Operating Continuous $PM_{2.5}$ Non-FEM Monitors

District	Site
Butte	Gridley (06-007-4001)
	Paradise-Clark (06-007-2003)
Glenn	Willows-Colusa (06-021-0003)
Mariposa	Yosemite Village (06-043-1001)
Northern Sierra	Chester (06-063-1007)
	Truckee-Fire Station (06-057-1001) [1]
Placer	Colfax-City Hall (06-061-0004)
	Lincoln-Moore Street (06-061-2003)
	Tahoe City-Fairway Drive (06-061-1004)
Yolo-Solano	Davis-UCD Campus (06-113-0004)

[1]Truckee-Fire Station non-FEM was replaced with an FEM (method code 209) in August 2024.

Core-Based Statistical Areas

Appendix A of this ANP also lists the location of each monitor, including the Core-Based Statistical Area (CBSA) in which each monitor is located. CBSAs are defined by the United States Office of Management and Budget (OMB) and provide a consistent set of geographical areas for federal agencies to use in collecting, tabulating, and

publishing statistical data. Two types of areas are included as CBSAs: Metropolitan Statistical Areas (MSA) and Micropolitan Statistical Areas, which differ by population threshold. A Metropolitan Statistical Area has an urban core with a population of 50,000 or more, whereas a Micropolitan Statistical Area has an urban core with a population of at least 10,000, but less than 50,000. Several counties in California are sparsely populated and do not meet the classification requirements for incorporation into a CBSA (Figure 2).

U.S. EPA specifies the number of monitors required for each pollutant based on the CBSA. Table 8 contains a comprehensive list of CBSAs and associated air districts for California. Several of the 26 air districts covered by this ANP are located in CBSAs that also include air districts that are preparing their own ANPs. Information regarding monitors operated by air districts outside of those covered by this ANP will be included in this ANP when necessary to demonstrate fulfillment of federal monitoring requirements.

For CBSAs that include multiple districts, fulfillment of minimum monitoring requirements is dependent upon coordination between air monitoring staff, particularly when changes to the monitoring network are considered. The Roles and Responsibilities documents developed by CARB specify that air districts and CARB must communicate with each other when changes to the network are being considered. When proposed changes are communicated between air districts and CARB, staff from both agencies will work closely to evaluate impacts on minimum monitoring requirements and develop pathways that ensure federal requirements are met. The Roles and Responsibilities documents are available on the CARB website at *https://ww2.arb.ca.gov/our-work/programs/quality-assurance/qm-document-repository/roles-responsibility-agreements*.

Assessing the $PM_{2.5}$ monitoring network

The Roles and Responsibilities outlined in the documents described above direct CARB to coordinate all changes to the $PM_{2.5}$ monitoring network with air districts, the general public and affected CARB divisions. Any $PM_{2.5}$ network changes are thoroughly reviewed by CARB and air district working groups, both separately and in coordinated discussions, and impacts on all CFR requirements are assessed. CARB and the air districts then work together, and with U.S. EPA Region 9, to mitigate impacts of any changes to the monitoring network, particularly with regard to any changes that impact any monitors that have violated the NAAQS. Public comment is solicited through the ANP process as required by 40 CFR 58.10(c) and any comments received are addressed either in this document or in the documents of the individual district ANPs.

Figure 2: Core-Based Statistical Areas in California

U.S. Census Bureau, Population Division

Table 8: List of Core-Based Statistical Areas included in CARB ANP and Other ANPs in California

CBSA Name*	County	Included in the CARB ANP?	Included in other ANP?
Bakersfield	Kern	Partially; Eastern Kern	San Joaquin Valley
Chico	Butte	Yes	- -
Clearlake	Lake	Yes	- -
Crescent City	Del Norte	No	North Coast Unified
El Centro	Imperial	Yes	- -
Eureka-Arcata-Fortuna	Humboldt	No	North Coast Unified
Fresno	Fresno	No	San Joaquin Valley
Hanford-Corcoran	Kings	No	San Joaquin Valley
Los Angeles-Long Beach-Anaheim	Los Angeles; Orange	Partially; Antelope Valley	South Coast
Madera	Madera	No	San Joaquin Valley
Merced	Merced	No	San Joaquin Valley
Modesto	Stanislaus	No	San Joaquin Valley
Napa	Napa	No	Bay Area
Oxnard-Thousand Oaks-Ventura	Ventura	Yes	- -
Red Bluff	Tehama	Yes	- -
Redding	Shasta	Yes	- -
Riverside-San Bernardino-Ontario	Riverside; San Bernardino	Partially; Mojave Desert	South Coast
Sacramento-Roseville-Folsom	El Dorado; Placer; Sacramento; Yolo	Partially; Placer, Yolo-Solano, and El Dorado	Sacramento Metropolitan
Salinas	Monterey	Yes	- -
San Diego-Carlsbad	San Diego	No	San Diego County
San Francisco-Oakland-Hayward	Alameda; Contra Costa; Marin; San Francisco; San Mateo	No	Bay Area
San Jose-Sunnyvale-Santa Clara	San Benito; Santa Clara	Partially; Monterey Bay	Bay Area
San Luis Obispo-Paso Robles-Arroyo Grande	San Luis Obispo	No	San Luis Obispo County
Santa Cruz-Watsonville	Santa Cruz	Yes	- -
Santa Maria-Santa Barbara	Santa Barbara	No	Santa Barbara County
Santa Rosa-Petaluma	Sonoma	Partially; Northern Sonoma	Bay Area
Sonora	Tuolumne	Yes	- -
Stockton-Lodi	San Joaquin	No	San Joaquin Valley

CBSA Name*	County	Included in the CARB ANP?	Included in other ANP?
Susanville	Lassen	Yes	- -
Truckee-Grass Valley	Nevada	Yes	- -
Ukiah	Mendocino	Yes	- -
Vallejo-Fairfield	Solano	Partially; Yolo-Solano	Bay Area
Visalia-Porterville	Tulare	No	San Joaquin Valley
Yuba City	Sutter; Yuba	Yes	- -

* Micropolitan Statistical Areas are delineated with grey shading.

Section 5: Federal Minimum Monitoring Requirements

For criteria pollutants, U.S. EPA has established minimum monitoring requirements that are specified in federal regulations (Appendix D of Title 40, Part 58 of the CFR). Generally, requirements are based on the population from the most recent census data, the severity of the air quality problem as specified by the design value, or emissions.

This ANP uses 2020 census populations to determine official minimum monitoring requirements. Upon direction from U.S. EPA, this ANP also includes the most recent available population census estimates (July 1, 2024) to estimate any changes to these requirements.

Section 5A: Ozone

Minimum Number of Ozone Monitoring Sites

The criteria for minimum monitoring requirements for ozone are shown in Table 9. The requirements are based on the population of the MSA and the magnitude of the design value (i.e., if the design value is greater or equal to 85 percent or less than 85 percent of the ozone NAAQS). There are no minimum monitoring requirements outside of MSAs. NCore and SLAMS monitors can be used to meet minimum monitoring requirements for ozone. In the absence of a valid design value, requirements for "less than 85 percent of any ozone NAAQS" apply.

Table 9: Minimum Ozone Monitoring Requirements for SLAMS

MSA population	Monitors required for MSAs with most recent 3-year design value concentrations ≥85% of any Ozone NAAQS	Monitors required for MSAs with 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

Within each MSA, at least one site should be sited to capture maximum ozone concentrations and the site type should be identified as "Highest Concentration". As shown in Table 10, the 14 MSAs covered by this ANP met the minimum monitoring requirements for ozone. Sites from air districts not covered by this ANP are also listed to provide a complete picture of all the sites contributing towards the minimum

monitoring requirements in each MSA. Note that percentages are relative to the 0.070 ppm 8-hour ozone NAAQS and high concentration sites are denoted with bold text.

SPMs and non-EPA federal ozone monitors are operated in some areas covered by this ANP but cannot be counted towards the minimum monitoring requirements. Information about these monitors is provided in Appendix A of this ANP.

Table 10: MSAs with Minimum Ozone Monitoring Requirements

MSA	2020 Census Population (2024 Population Estimate*)	2024 Design Value (% of NAAQS) *DV Site*	Required # of Sites	SLAMS Sites Operating in 2024 (District where site is located) *Highest Concentration Sites Denoted by Bold Text*
Bakersfield-Delano	909,233 (922,529)	0.088 ppm (126%) *Edison*	2	**Arvin-Di Giorgio (San Joaquin Valley)** Bakersfield-5558 California Avenue (San Joaquin Valley) **Bakersfield-Municipal Airport (San Joaquin Valley**) **Edison (San Joaquin Valley)** Maricopa-Stanislaus Street (San Joaquin Valley) **Mojave (Eastern Kern)** Oildale-3311 Manor Street (San Joaquin Valley) Shafter-Walker Street (San Joaquin Valley)
Chico	211,632 (208,334)	0.066ppm (94%) *Paradise*	1	Chico-East Avenue (Butte County) **Paradise-lark (Butte County)**
El Centro	179,710 (181,724)	0.077ppm (110%) *Calexico*	1	**Calexico-Ethel Street (Imperial)** **El Centro-9th Street (Imperial)** Niland-English Road (Imperial) Westmorland (Imperial)
Los Angeles-Long Beach-Anaheim	13,204,657 (12,927,614)	0.101 ppm (144%) *Glendora-Laurel*	4	Anaheim-Pampas Lane (South Coast) Azusa (South Coast) Compton-700 North Bullis Road (South Coast) **Glendora-Laurel (South Coast)** La Habra (South Coast) Lancaster (Antelope Valley) Long Beach-Signal Hill (South Coast) Los Angeles-LAX (South Coast) Los Angeles-North Main Street (South Coast) Mission Viejo-26081 Via Pera (South Coast) North Hollywood (South Coast) Pasadena-S Wilson Avenue (South Coast) Pico Rivera-4144 San Gabriel (South Coast) Pomona (South Coast) Reseda (South Coast) **Santa Clarita (South Coast)** West Los Angeles-VA Hospital (South Coast)
Oxnard-Thousand Oaks-Ventura	844,363 (835,427)	0.076 ppm (109%) *Simi Valley*	2	El Rio-Rio Mesa School #2 (Ventura) Ojai-Ojai Avenue (Ventura) Piru-3301 Pacific Avenue (Ventura) **Simi Valley-Cochran Street (Ventura)** Thousand Oaks-Moorpark Road (Ventura)

MSA	2020 Census Population (2024 Population Estimate*)	2024 Design Value (% of NAAQS) *DV Site*	Required # of Sites	SLAMS Sites Operating in 2024 (District where site is located) *Highest Concentration Sites Denoted by Bold Text*
Redding	182,452 (181,121)	0.067 ppm (96%) *Redding*	1	**Redding-Health Dept Roof (Shasta County)** Shasta Lake-13791 Lake Blvd (Shasta County)
Riverside-San Bernardino-Ontario	4,601,631 (4,744,214)	0.108 ppm (154%) *Redlands; San Bernardino*	3	Banning Airport (South Coast) Barstow (Mojave Desert) Blythe-445 West Murphy Street (Mojave Desert) **Crestline (South Coast)** Fontana-Arrow Highway (South Coast) Hesperia-Olive Street (Mojave Desert) Indio-Jackson Street (South Coast) Lake Elsinore-W Flint Street (South Coast) Mira Loma-Van Buren (South Coast) Palm Springs-Fire Station (South Coast) Redlands-Dearborn (South Coast) Riverside-Rubidoux (South Coast) **San Bernardino-4th Street (South Coast)** Trona-Athol and Telegraph (Mojave Desert) Upland (South Coast) Victorville-14306 Park Avenue (Mojave Desert) Winchester-33700 Borel Road (South Coast)
Sacramento-Roseville-Folsom	2,398,834 (2,463,127)	0.075 ppm (107%) Sacramento-Del Paso Manor	2	Auburn-11645 Atwood Road (Placer County) Colfax-City Hall (Placer County) **Cool-Highway 193 (El Dorado County)** Davis-UCD Campus (Yolo-Solano) Echo Summit (El Dorado County) Elk Grove (Sacramento) **Folsom (Sacramento)** Lincoln-2885 Moore Rd (Placer County) **Placerville (El Dorado County)** **Roseville-N Sunrise Blvd (Placer County)** Sacramento-Del Paso Manor (Sacramento) Sacramento-T St (Sacramento) Sloughhouse (Sacramento) Tahoe City-221 Fairway Drive (Placer County) Woodland-Gibson Road (Yolo-Solano)
Salinas	441,012 (436,251)	0.054 ppm (77%) King City	1	Carmel Valley (Monterey Bay) **King City (Monterey Bay)** Salinas (Monterey Bay)
San Jose-Sunnyvale-Santa Clara	2,000,487 (1,995,484)	0.064 ppm (91%) Pinnacles NM	2	Gilroy (Bay Area) **Hollister (Monterey Bay)** Los Gatos (Bay Area) Pinnacles NM (National Park Service) San Jose-Jackson (Bay Area) **San Martin (Bay Area)**
Santa Cruz-Watsonville	272,140 (262,406)	0.049 ppm (70%) Stanta Cruz	0	Santa Cruz (Monterey Bay)

MSA	2020 Census Population (2024 Population Estimate*)	2024 Design Value (% of NAAQS) *DV Site*	Required # of Sites	SLAMS Sites Operating in 2024 (District where site is located) *Highest Concentration Sites Denoted by Bold Text*
Santa Rosa-Petaluma	488,862 (485,375)	0.45 ppm (64%) *Sebastopol*	1	**Sebastopol (Bay Area)**
Vallejo	453,551 (455,101)	0.060ppm (86%) *Vacaville-Ulatis*	2	Fairfield-Chadbourne Road (Bay Area) Vallejo-304 Tuolumne Street (Bay Area) **Vacaville-Ulatis Drive (Yolo-Solano)**
Yuba City	181,210 (186,014)	0.068 ppm (97%) *Sutter Buttes*	1	**Sutter Buttes-S Butte (Feather River)** **Yuba City-Almond Street (Feather River)**

* Source: U.S. Census Bureau. Retrieved from *https://www.census.gov/programs-surveys/popest.html*

Seasonal Ozone Monitoring

The ozone monitoring season is year-round in California; however, monitoring at the five sites shown in Table 11 have operated on a seasonal basis since they were established. The ozone monitoring season for these sites is April through October, the period in which peak ozone is expected or when sites are physically accessible. A seasonal waiver for ozone monitoring in 2024 at these sites was granted by U.S. EPA. The waiver must be updated each year, and a copy of the waiver request for 2025 is provided in Appendix B.

Table 11: Seasonal Ozone Monitoring Sites

AQS ID	Site Name	District	Start Year
060170012	Echo Summit	El Dorado County	2000
060170020	Cool	El Dorado County	1996
060430006	Jerseydale	Mariposa County	1995
061010004	Sutter Buttes	Feather River	1993
061030004	Tuscan Butte	Tehama County	1995

Section 5B: Nitrogen Dioxide (NO_2)

Minimum Number of NO_2 Monitoring Sites

Federal regulations specify three types of NO_2 minimum monitoring requirements:

- Area-wide;
- Near-road NO_2 monitoring; and
- Monitoring in communities with susceptible populations.

Area-wide monitoring must be conducted in CBSAs with populations of one million or more. For these areas, a minimum of one monitor is required and should be sited to capture the highest concentrations at a neighborhood or larger spatial scale. PAMS sites can be used to meet area-wide minimum monitoring requirements if they meet siting criteria.

The CBSAs in California that meet the population thresholds for required area-wide NO_2 monitoring are the Los Angeles-Long Beach-Anaheim, Riverside-San Bernardino-Ontario, Sacramento-Roseville-Folsom, San Diego-Carlsbad, San Francisco-Oakland-Hayward and San Jose-Sunnyvale-Santa Clara. The areas of expected highest concentration in these CBSAs are not within the jurisdictions of the air districts covered by this ANP. As such, area-wide NO_2 monitoring for these CBSAs is addressed in the ANPs prepared by the South Coast AQMD, Sacramento Metropolitan AQMD, San Diego County APCD, and Bay Area AQMD. Although not required, NO_2 monitors are operated in several districts covered by this ANP. Information about these monitors can be found in Appendix A of this ANP.

Near-road NO_2 monitoring requirements are based on population of the CBSA and Annual Average Daily Traffic (AADT) counts on road segments within the CBSA. One monitor is required in CBSAs with a population of one million or more. A second monitor is required in CBSAs with a population greater than or equal to 2.5 million; or CBSA's with populations greater than or equal to 1 million and roadway AADT greater than or equal to 250,000 on one or more road segments. Near-road monitors should be sited to capture maximum one-hour concentrations at a micro spatial scale. The near-road requirements are being implemented in phases, over the course of several years. For informational purposes, all of the CBSAs in California that are required by current federal regulations to conduct near-road NO_2 monitoring are shown in Table 12.

The near-road areas with road segments with the highest AADT for the Bakersfield, Los Angeles-Long Beach-Anaheim, Riverside-San Bernardino-Ontario, and Sacramento-Roseville-Folsom CBSAs are not within the jurisdiction of the air districts covered by this ANP. Near-road NO_2 monitoring for these CBSAs in the CARB PQAO

is addressed in the ANPs prepared by the San Joaquin Valley APCD and the Sacramento Metropolitan AQMD. Information about near-road NO_2 monitoring for the other PQAOs in California can also be found in the ANPs prepared by the San Diego County APCD, South Coast AQMD and the Bay Area AQMD.

Table 12: CBSAs with Near-Road NO_2 Monitoring Requirements

CBSA	Population 2020 Census (2024 Population Estimate)	Area-wide Monitoring	Maximum AADT (2021) *	Required Near-road Sites	Near-road Sites (AQS ID); District where sites are located
Bakersfield	909,233 (922,529)	No	139,000	0	Bakersfield–Westwind (060292019); San Joaquin Valley [1]
Fresno	1,164,903 (1,189,557)	Yes	155,000	1	Fresno-2482 Foundry Park (060192016); San Joaquin Valley
Los Angeles-Long Beach-Anaheim	13,204,657 (12,927,614)	Yes	386,000	2	Anaheim-Route 5 (060590008); South Coast Long Beach-Route 710 (060374008); South Coast
Riverside-San Bernardino-Ontario	4,601,631 (4,744,214)	Yes	274,000	2	Ontario-Etiwanda (060710026); South Coast Ontario-Route 60 (060710027); South Coast
Sacramento-Roseville-Folsom	2,398,834 (2,463,127)	Yes	224,000	2	Sacramento-Bercut Drive (060670015); Sacramento [2]
San Diego-Chula Vista-Carlsbad	3,298,647 (3,298,799)	Yes	272,000	2	Rancho Carmel Drive (060731017); San Diego San Ysidro (060731025); San Diego[3]
San Francisco-Oakland-Berkeley	4,753,655 (4,648,486)	Yes	283,000	2	Laney College (060010012); Bay Area Berkeley-Aquatic Park (060010013); Bay Area
Salinas	441,012 (436,251)	Yes	22,395	0	Salinas (060531003); Monterey
San Jose-Sunnyvale-Santa Clara	2,000,487 (1,995,484)	Yes	243,000	1	San Jose-Knox Ave (060850006); Bay Area Pleasanton (060010015); Bay Area

* Source: Traffic Census Program, California Department of Transportation *https://dot.ca.gov/programs/traffic-operations/census*.

[1] The San Joaquin Valley APCD established a near-road NO_2 monitoring station in the Bakersfield CBSA, which is nearing a population of 1,000,000.

[2] In the Sacramento Metropolitan AQMD's 2023 5-Year Air Monitoring Network Assessment, the Sacramento CBSA exceeded traffic volume threshold for a second near-road monitoring site (2015-2019 traffic volume exceeded the threshold, 2020 traffic volume fell below the threshold). The District is working with U.S. EPA and CARB to determine the appropriate timing, location, and funding for a second near-road monitoring site.

As part of the final rule revising the NO_2 NAAQS in 2010 (75 FR 6474), U.S. EPA required the Regional Administrators to identify an additional 40 monitoring sites nationwide that would be located in areas representing susceptible and vulnerable populations. Seven of these sites are located in California, and the locations of them are shown in Table 13 along with the responsible monitoring agency. More information on this monitoring can be found in the ANPs prepared by the Bay Area AQMD, the San Diego County APCD, the San Joaquin Valley APCD and the South Coast AQMD.

Table 13: Regional Administrator Required NO_2 Monitoring Site

District	Site (AQS ID)
San Diego	Sherman Elementary School (060731026)
Bay Area	Oakland West (060010011)
San Joaquin Valley	Parlier (060194001)
	Bakersfield-Muni (060292012)
South Coast	Compton (060371302)
	Los Angeles-Main St. (060371103)
	San Bernardino (060719004)

Section 5C: Carbon Monoxide (CO)

Minimum Number of CO Monitoring Sites

The only federal requirement for CO monitoring is for near-road CO monitoring. In CBSAs with a population of one million or more, one CO monitor is required to operate collocated with one near-road NO_2 monitor. If a CBSA has more than one near-road NO_2 monitoring site, a CO monitor is only required at one near-road site in the CBSA. The CO monitor was required to be operational by January 1, 2015 in CBSAs with a population more than 2.5 million, and by January 1, 2017 for all other CBSAs.

Table 14: CBSAs with CO Minimum Monitoring Requirements

CBSA	Population 2020 Census (2024 Population Estimate)	Required # of Near-road Sites	Near-road Sites (AQS ID); District where sites are located
Fresno	1,164,903 (1,189,557)	1	Fresno-2482 Foundry Park (060192016); San Joaquin Valley
Los Angeles-Long Beach-Anaheim	13,204,657 (12,927,614)	1	Anaheim-Route 5 (060590008); South Coast
Riverside-San Bernardino-Ontario	4,601,631 (4,744,214)	1	Ontario-Etiwanda (060710026); South Coast
Sacramento-Roseville-Folsom	2,398,834 (2,463,127)	1	Sacramento-Bercut Drive (060670015); Sacramento
San Diego-Chula Vista-Carlsbad	3,298,647 (3,298,799)	1	Rancho Carmel Dr. (060731017); San Diego
San Francisco-Oakland-Berkeley	4,753,655 (4,648,486)	1	Laney College (060010012); Bay Area; Berkeley-Aquatic Park (060010013); Bay Area
San Jose-Sunnyvale-Santa Clara	2,000,487 (1,995,484)	1	San Jose-Knox Ave (060850006); Bay Area

As shown in Table 14, three CBSAs that include an air district covered by this ANP meet the population threshold and have minimum monitoring requirements for CO; however, the near-road areas with road segments that have the highest AADT for the Los Angeles-Long Beach-Anaheim, Riverside-San Bernardino-Ontario, and Sacramento-Roseville-Folsom CBSAs are not within the areas covered by this ANP. Subsequently, near-road monitoring for these CBSAs is addressed in the ANPs prepared by the South Coast AQMD, Bay Area AQMD, and the Sacramento Metropolitan AQMD.

Two air districts covered by this ANP (Butte County AQMD and Imperial County APCD) operate two area-wide CO monitors as listed in Table 2. The data from these monitors are used for various purposes such as estimating the general population exposure and also determining the impact of emissions from wildfires. CO

concentrations at area-wide monitors are well below the NAAQS, and California has long attained federal NAAQS and State CO standards. Information about these monitors is provided in Appendix A.

Regional Administrators may require additional CO monitoring in other areas where data or other indicators suggest that concentrations may approach or exceed the NAAQS.

Section 5D: Sulfur Dioxide (SO_2)

Minimum Number of SO_2 Monitoring Sites

Monitoring regulations for SO_2 are based on the population weighted emissions index (PWEI) in a CBSA. The PWEI considers population and aggregated county-level emissions data and is calculated using the equation:

$$CBSA\ PWEI\ = \frac{CBSA\ Population\ \times \sum_{County} Emission}{1{,}000{,}000}$$

One monitor is required in CBSAs with PWEIs equal to or greater than 5,000 but less than 100,000; two monitors are required in CBSAs with PWEIs equal to or greater than 100,000 but less than one million; and three monitors are required in CBSAs with PWEI values of one million or more. As shown in Table 15, two CBSAs that contain an air district covered by this plan meet the PWEI threshold and have minimum monitoring requirements for SO_2. Site types identified as population exposure, high concentration, source oriented, general background, or regional transport can satisfy minimum monitoring requirements. SO_2 monitors at NCore sites shall be counted toward minimum monitoring requirements.

The most recent emission data available to calculate PWEI was from the California Emissions Projection Analysis Model.

Table 15: CBSAs with Minimum Monitoring Requirements for SO_2

CBSA	District covered by this ANP	Other District ANPs covering this CBSA	County SO_2 (TPY) (2024 Data)*	Population 2020 Census (2024 Population Estimate)	PWEI	Required Sites	SLAMS Sites Operating in 2024
Los Angeles-Long Beach-Anaheim	Antelope Valley AQMD	South Coast AQMD	Los Angeles: 5,161 Orange: 541	13,204,657 (12,927,614)	67,876 (73,707)	1	Los Angeles-Main Street (South Coast) Los Angeles-Lax (South Coast)
Riverside-San Bernardino-Ontario	Mojave Desert AQMD	South Coast AQMD	Riverside: 400 San Bernardino: 1,314	4,601,631 (4,744,214)	6,155 (8,130)	1	Fontana (South Coast) Rubidoux (South Coast)

* Source: Criteria Pollutant Emission Inventory Data, California Air Resources Board *https://ww2.arb.ca.gov/criteria-pollutant-ei*

All air districts covered by this ANP met the minimum monitoring requirements for SO_2 in 2024. In December 2017, U.S. EPA designated all areas of California as unclassifiable/attainment for the SO_2 NAAQS.

Section 5E: Lead (Pb)

Minimum Number of Pb Monitoring Sites

Monitoring is required near Pb sources which are expected or have been shown to contribute to a maximum Pb concentration in excess of the NAAQS. Specifically, monitoring is required at airports which emit more than 1.0 tons per year or non-airport sources which emit 0.50 tons per year or more of Pb.

Based on the 2020 National Emissions Inventory, U.S. EPA identified the Twentynine Palms United States Marine Corps Air Ground Combat Center (MCAGCC) in the Mojave Desert as a source that exceeded the threshold for Pb monitoring in 2019, primarily attributed to live fire explosives (i.e., munitions) used during range training operations. The Mojave Desert Air Quality Management District submitted a Pb monitoring waiver for the MCAGCC to the U.S. EPA in February 2025, which demonstrated that, based on modeling, despite the facility exceeding the 0.50 ton per year emission threshold in calendar year 2019, the facility will not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS of 0.15 $\mu g/m^3$ as a rolling three-month average, and therefore no monitoring is required for this source. In April 2025, the U.S. EPA approved the waiver request. The waiver will be renewed every five years as part of the network assessment required under Appendix D of 40 CFR Part 58. None of the other areas covered by this ANP exceed the threshold for source monitoring.

Pb monitoring at NCore site is no longer required. However, agencies that operate NCore sites are required to obtain approval to terminate an existing Pb monitor.

Section 5F: PM_{10}

Minimum Number of PM_{10} Monitoring Sites

Monitoring requirements for PM_{10} are based on population and air quality conditions in each MSA. The criteria for determining the minimum number of monitoring sites are listed in Table 16. The number of sites is given as a range rather than an absolute number because the goal of establishing a network of monitoring sites is to characterize national and regional air quality trends and geographic patterns, which can vary in complexity from place to place.

Table 16: Minimum Monitoring Requirements for PM_{10} Monitoring Sites

Population	High Concentration (Exceeds NAAQS by ≥20%)	Medium Concentration (≥80% of NAAQS)	Low Concentration (<80% of NAAQS)
> 1 million	6 – 10 sites	4 – 8 sites	2 – 4 sites
500,000 - 1 million	4 – 8 sites	2 – 4 sites	1 – 2 sites
250,000 - 500,000	3 – 4 sites	1 – 2 sites	0 – 1 sites
100,000 - 250,000	1 – 2 sites	0 – 1 sites	0 sites

The number of required monitoring sites in MSAs with populations that are greater than or equal to 100,000 are shown in Table 17. Only sites designated as SLAMS may be counted to meet PM_{10} minimum monitoring requirements. In contrast to the information presented on the gaseous monitoring network, sites outside of the scope of this ANP are only included in Table 17 if needed to meet minimum monitoring requirements because of the complex nature of PM monitoring.

Fourteen MSAs include at least a portion of the areas covered by this ANP. The Los Angeles-Long Beach-Anaheim MSA includes the Antelope Valley AQMD; however, most of the area is under the jurisdiction of the South Coast AQMD. Monitoring sites operated by South Coast AQMD are necessary to meet minimum monitoring requirements for PM_{10} and include sites located in areas where high concentrations are expected. The sole monitoring site run by Antelope Valley AQMD is not needed to meet minimum monitoring requirements for this area but serves to complement the network of monitors operated by South Coast AQMD.

The monitors operated in air districts covered by this ANP are adequate to meet minimum monitoring requirements in the remaining MSAs; however, there are additional monitors operated in these areas that are in jurisdictions outside of the

scope of this ANP. Information about these monitors can be found in the ANPs prepared by the South Coast AQMD, San Joaquin Valley APCD, and Sacramento Metropolitan AQMD.

Table 17: MSAs with Minimum Monitoring Requirements for PM_{10}

MSA	2020 Census Population (2024 Population Estimate)	2022-2024 Max Concentration (% of NAAQS) *Max Concentration Site*	Required Sites	SLAMS Sites Operating in 2024 (District where site is located)
Bakersfield	909,233 (922,529)	416 µg/m^3 (277%) *Ridgecrest*	4-8	Canebrake (Eastern Kern); Mojave (Eastern Kern); Ridgecrest (Eastern Kern); Bakersfield-California (San Joaquin); Bakersfield-Golden (San Joaquin); Oildale (San Joaquin)
Chico	211,632 (208,334)	113 µg/m^3 (75%) *Chico*	0	Chico (Butte County)
El Centro	179,710 (181,724)	866 µg/m^3 (577%) *Westmorland*	1-2	Brawley (Imperial County); Calexico (Imperial County); El Centro (Imperial County); Niland (Imperial County); Westmorland (Imperial County)
Los Angeles-Long Beach-Anaheim*	13,204, 657 (12,927,614)	187 µg/m^3 (125%) *Glendora*	6-10	Lancaster (Antelope Valley); Anaheim (South Coast); Glendora (South Coast); Los Angeles-N Main St (South Coast); Long Beach (Hudson)/Webster (South Coast); Santa Clarita (South Coast); Signal Hill (South Coast)
Oxnard-Thousand Oaks-Ventura	844,363 (835,427)	272 µg/m^3 (182%) *El Rio*	4-8*	Simi Valley (Ventura County); El Rio (Ventura County)
Redding	182,452 (181,121)	53 µg/m^3 (35%) *Redding*	0	Redding (Shasta County)
Riverside-San Bernardino-Ontario	4,601,631 (4,744,214)	529 µg/m^3 (353%) *Palm Springs*	6-10	Barstow (Mojave Desert); Lucerne Valley (Mojave Desert); Victorville (Mojave Desert); Hesperia (Mojave Desert); Trona (Mojave Desert); Banning (South Coast); Crestline (South Coast); Mecca (South Coast); Palm Springs (South Coast); Rubidoux (South Coast)
Sacramento-Roseville-Folsom	2,398,834 (2,463,127)	136 µg/m^3 (91%) *South Lake Tahoe*	4-8*	So. Lake Tahoe (El Dorado County); Roseville (Placer County); Del Paso (Sacramento); Sacramento-T St (Sacramento); Sacramento-Branch (Sacramento); Woodland (Yolo-Solano); West Sacramento (Yolo-Solano)
Salinas	441,012 (436,251)	81 µg/m^3 (54%) *King City*	0-1	King City (Monterey Bay)
San Jose-Sunnyvale-Santa Clara**	2,000,487 (1,995,484)	77 µg/m^3 (51%) *Hollister*	2-4	Hollister (Monterey Bay) San Juan Bautista (Monterey Bay)[1] San Jose-Jackson (Bay Area)

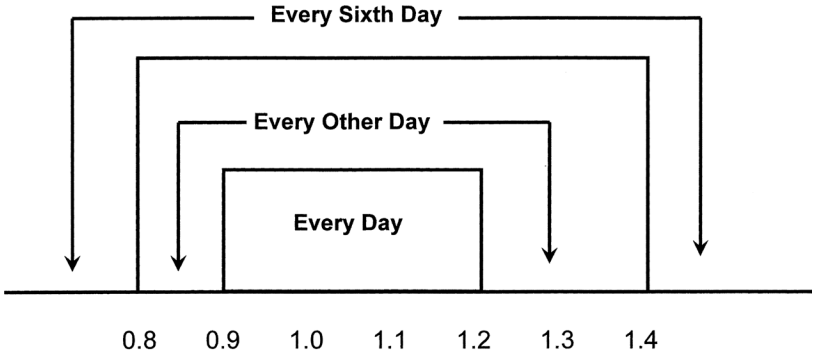
MSA	2020 Census Population (2024 Population Estimate)	2022-2024 Max Concentration (% of NAAQS) *Max Concentration Site*	Required Sites	SLAMS Sites Operating in 2024 (District where site is located)
Santa Rosa-Petaluma	488,862 (485,375)	49 µg/m^3 (33%) *Healdsburg*	0-1	Cloverdale (Northern Sonoma); Healdsburg (Northern Sonoma); Guerneville (Northern Sonoma)
Vallejo-Fairfield	453,491 (455,101)	37 µg/m^3 (25%) *Vacaville*	0-1	Vacaville (Yolo-Solano)
Yuba City	181,210 (186,014)	72 µg/m^3 (48%) *Yuba City*	0	Yuba City (Feather River)

* Some monitoring sites were impacted by wildfire smoke. Some of these impacts will be addressed under the Exceptional Events Rule (81 FR 68216, 40 CFR 50.14) while others did not lead to exceedance of the standard but impacted the minimum monitoring requirements. CARB is working with local air districts to evaluate the minimum monitoring requirements for all impacted areas.
** Incomplete data at some sites in MSA, estimates provided by Bay Area AQMD
[1]The San Juan Bautista monitor, part of the Monterey Bay ARD, has been listed as a Special Purpose Monitor (SPM) since March 2021.

PM_{10} Sampling Frequency Requirements for Primary FRM Monitors

Federal regulations establish procedures for determining an appropriate sampling frequency for PM_{10} monitors. All 24-hour samples must be taken from midnight to midnight, local standard time, to ensure consistency among measurements nationwide. Figure 3, reproduced from Figure 1 in 40 CFR 58.12e, shows the required sampling frequency based upon the ratio of the design value to the standard.

Figure 3: Required Sampling Frequency for Manual PM_{10} Monitors



The calculated required sampling frequencies for all FRM PM_{10} monitors in the air districts covered by this ANP are shown in Table 18. Note that exceptional events have not been removed from the concentrations shown.

Table 18: Required Sampling Frequency for PM_{10} FRM Monitors

Site Name	District	AQS ID	2022-2024 Max Concentration	Ratio of Max Concentration to Standard	Required Sampling Frequency	Current Sampling Frequency
Lakeport	Lake	060333002-1	35	0.23	1:6	1:6
Redding	Shasta	060890004-2	53	0.35	1:6	1:6
Red Bluff[1]	Tehama	061030007-1	53	0.35	n/a	n/a
Vacaville	Yolo-Solano	060953001-2	37	0.25	1:6	1:6
West Sacramento	Yolo-Solano	061132001-1	54	0.36	1:6	1:6
Woodland	Yolo-Solano	061131003-1	64	0.43	1:6	1:6

[1]The FRM at Red Bluff was replaced with a continuous monitor in April 2023.

Section 5G: $PM_{2.5}$

Minimum Number of $PM_{2.5}$ Monitoring Sites

The minimum number of monitoring sites that are required for the $PM_{2.5}$ network is based on population and air quality within each MSA, as shown in Table 19. Each MSA is required to have at least one monitoring site situated to measure maximum concentrations at a neighborhood or larger scale.

Table 19: Minimum Monitoring Requirements for $PM_{2.5}$

Population	DV ≥ 85% of any $PM_{2.5}$ NAAQS	DV < 85% of any $PM_{2.5}$ NAAQS
> 1 million	3 sites	2 sites
500,000 - 1 million	2 sites	1 site
50,000 - <500,000	1 site	0 sites

Only SLAMS sites situated to measure concentrations that are representative of area-wide $PM_{2.5}$ concentrations should be used to meet minimum monitoring requirements. NCore and PAMS sites can count towards meeting minimum monitoring requirements if the site(s) are representative of area-wide $PM_{2.5}$ concentrations. In contrast to the information presented on the gaseous monitoring network, sites outside of the scope of this ANP were only included in Table 20 if needed to meet minimum monitoring requirements because of the complex nature of PM monitoring.

$PM_{2.5}$ Near-Road Monitoring

Federal regulations require that at least one $PM_{2.5}$ monitor is collocated at a near-road NO_2 monitoring site in CBSAs with a million or more people. No near-road sites are located in the areas covered by this ANP. Information about near-road sites can be found in the ANPs prepared by the Bay Area AQMD, Sacramento Metropolitan AQMD, San Joaquin Valley APCD, and South Coast AQMD.

$PM_{2.5}$ Monitoring at At-Risk Communities

In February 2024, U.S. EPA lowered the primary $PM_{2.5}$ annual NAAQS from 12.0 ug/m^3 to 9.0 ug/m^3. To enhance protection of air quality in communities subject to disproportionate air pollution risk, U.S. EPA modified the $PM_{2.5}$ monitoring network design criteria to include an environmental justice (EJ) factor that accounts for proximity of at-risk populations as part of the new $PM_{2.5}$ NAAQS, consistent with the statutory requirement that the NAAQS protect the health of at-risk populations (89 FR 16202, March 6, 2024). Specifically, U.S. EPA modified the existing requirement at 40

CFR part 58, appendix D, section 4.7.1(b)(3)): ''For areas with additional required SLAMS, a monitoring station is to be sited in an at-risk community with poor air quality,'' to additionally address at-risk communities with a focus on anticipated exposures from local sources of emissions (*e.g.*, a major industrial area, point source(s), port, rail yard, airport, or other transportation facility or corridor). U.S. EPA proposed that communities with relatively higher proportions of subpopulations at greater risk from $PM_{2.5}$ exposure within the jurisdiction of a state or local monitoring agency should be considered ''at-risk communities'' for these purposes.

Section 9 of this report summarizes California's efforts to address and advance environmental justice into our monitoring network design. The next 5-year assessment (40 CFR 58.10(d)) in 2025 will also examine the ability of existing and proposed sites to support air quality characterization for at-risk communities and the existing network objectives.

$PM_{2.5}$ Continuous Monitoring

Federal regulations require that at least half of the minimum number of required monitors operated in each MSA should be continuous monitors. In each MSA, at least one continuous monitor should be collocated with a required FRM/FEM monitor unless one of the required monitors is a continuous monitor. Sites outside of the scope of this ANP were only included in Table 21 if needed to meet minimum monitoring requirements.

Table 20: MSAs with Minimum Monitoring Requirements for $PM_{2.5}$

MSA	2020 Census Population (2024 Population Estimate)	2024 Design Value (% of NAAQS) Design Value Site		Required Sites	SLAMS Sites Operating in 2024 (District where site is located) Highest Concentration Site Types Denoted by Bold Text
		24-hour (35 µg/m³)	Annual (9.0 µg/m³)		
Bakersfield	909,233 (922,529)	48 µg/m³ (137%) *Bakersfield-Golden/M*	14.7 µ/m³ (163%) *Bakersfield-Planz*	3	Mojave (Eastern Kern) Ridgecrest (Eastern Kern) Bakersfield-California (San Joaquin) Bakersfield-Golden/M (San Joaquin) Bakersfield-Planz (San Joaquin)
Chico	211,632 (208,334)	25 µg/m³ (71%) *Chico*	7.4 µg/m³ (82%) *Chico*	0	Chico (Butte)
El Centro	179,710 (181,724)	33 µg/m³ (94%) *Calexico*	10.2 µg/m³ (113%) *Calexico*	1	Brawley (Imperial) Calexico (Imperial) El Centro (Imperial)
Los Angeles-Long Beach-Anaheim	13,204,657 (12,927,614)	32 µg/m³ (91%) *Compton*	11.9 µg/m³ (132%) *Compton*	3	Lancaster (Antelope Valley) Compton (South Coast) Long Beach-Rte 710 (South Coast) **Los Angeles-N Main (South Coast)** Pico Rivera (South Coast)

MSA	2020 Census Population (2024 Population Estimate)	2024 Design Value (% of NAAQS) Design Value Site		Required Sites	SLAMS Sites Operating in 2024 (District where site is located) Highest Concentration Site Types Denoted by Bold Text
		24-hour (35 µg/m³)	**Annual (9.0 µg/m³)**		
Oxnard-Thousand Oaks-Ventura	844,363 (835,427)	15 µg/m³ (43%) *Simi Valley/Thousand Oaks*	7.0 µg/m³ (78%) *Thousand Oaks*	1	El Rio (Ventura) Ojai (Ventura) **Piru (Ventura)** **Simi Valley (Ventura)** Thousand Oaks (Ventura)
Redding	182,452 (181,121)	23 µg/m³ (66%) *Redding*	6.1 µg/m³ (68%) *Redding*	0	Redding (Shasta)
Riverside-San Bernardino-Ontario	4,601,631 (4,744,214)	35 µg/m³ (100%) *Fontana*	12.7 µg/m³ (141%) *Ontario*	3	Victorville (Mojave Desert) Fontana (South Coast) **Mira Loma (South Coast)** Ontario (South Coast)
Sacramento-Roseville-Folsom	2,398,834 (2,463,127)	30 µg/m³ (86%) *Del Paso*	8.9 µg/m³ (99%) *Sacramento-Bercut*	3	Auburn (Placer) **Roseville (Placer)** **Del Paso-Avalon Dr (Sacramento)** Sacramento-Bercut (Sacramento) Woodland (Yolo-Solano)
Salinas	441,012 (436,251)	15 µg/m³ (43%) *Salinas*	6.2 µg/m³ (69%) *Salinas*	0	Carmel Valley (Monterey Bay) [1] King City (Monterey Bay) [1] Salinas (Monterey Bay)
San Jose-Sunnyvale-Santa Clara*	2,000,487 (1,995,484)	25 µg/m³ (71%) *San Jose-Jackson*	9.2 µg/m³ (102%) *San Jose-Jackson*	3	Hollister (Monterey Bay) Gilroy (Bay Area) San Jose-Jackson (Bay Area) San Jose-Knox (Bay Area)
Santa Cruz-Watsonville	272,140 (262,406)	16 µg/m³ (46%) *San Lorenzo Valley*	5.6 µg/m³ (62%) *Santa Cruz*	0	San Lorenzo Valley (Monterey Bay) Santa Cruz (Monterey Bay)
Santa Rosa-Petaluma*	488,862 (485,375)	16 µg/m³ (46%) *Sebastopol*	5.0 µg/m³ (56%) *Sebastopol*	0	Sebastopol (Bay Area)
Vallejo-Fairfield*	453,551 (455,101)	20 µg/m³ (57%) *Vallejo*	6.5 µg/m³ (72%) *Vallejo*	0	**Vallejo (Bay Area)**
Yuba City	181,210 (186,014)	25 µg/m³ (71%) *Yuba City*	8.8 µg/m³ (98%) *Yuba City*	1	Yuba City (Feather River)

*Incomplete data at some sites in MSA, estimates provided by Bay Area AQMD

[1]Listed as SPM in AQS but in operation over two years and counted as SLAMS for the purposes of this report.

Table 21: MSAs with Minimum Continuous $PM_{2.5}$ Monitoring Requirements

MSA	Minimum # of Required Sites	Required Continuous Monitors	Sites with Continuous Monitors Operating in 2024[1] (District where site is located)
Bakersfield	3	2	Mojave (Eastern Kern); Ridgecrest (Eastern Kern)
Chico	0	0	Chico (Butte); Gridley (Butte)**; Paradise (Butte)**
El Centro	1	1	Brawley (Imperial); Calexico (Imperial)
Los Angeles-Long Beach-Anaheim	3	2	Lancaster (Antelope Valley); Anaheim (South Coast)
Oxnard-Thousand Oaks-Ventura	1	1	El Rio (Ventura); Ojai (Ventura); Piru (Ventura); Simi Valley (Ventura); Thousand Oaks (Ventura)
Redding	0	0	Redding (Shasta)
Riverside-San Bernardino-Ontario	3	2	Victorville (Mojave Desert); Rubidoux (South Coast
Sacramento-Roseville-Folsom	3	2	Auburn (Placer); Colfax (Placer)**; Lincoln (Placer)*; Roseville (Placer); Tahoe City (Placer)**; Davis (Yolo-Solano)**
Salinas	0	0	Carmel Valley (Monterey)***; King City (Monterey)***; Salinas (Monterey)
San Jose-Sunnyvale-Santa Clara	3	2	Holliser (Monterey); Gilroy (Bay Area); San Jose-Jackson (Bay Area); San Jose-Knox (Bay Area)
Santa Cruz-Watsonville	0	0	Santa Cruz (Monterey), San Lorenzo Valley (Monterey)
Santa Rosa-Petaluma	0	0	Sebastopol (Bay Area)
Vallejo-Fairfield	0	0	Vallejo (Bay Area)
Yuba City	1	1	Yuba City (Feather River)

*These sites operate continuous SLAMS monitors reporting only under non-regulatory parameter codes 88501 or 88502.
**These sites operate continuous monitors reporting under non-regulatory parameter codes 88501 or 88502 but not as SLAMS monitors (e.g., SPM or Other).
***Listed as SPM in AQS but in operation over two years and counted as SLAMS for the purposes of this report.
[1]The monitors listed here are primarily those in the districts covered by this ANP. Sites outside of the scope of this ANP are only included if needed to meet minimum monitoring requirements.

$PM_{2.5}$ Sampling Frequency Requirements for Primary FRM Monitors

Sampling frequency for FRM $PM_{2.5}$ monitoring can vary by site. Determination of the required sampling frequency for primary $PM_{2.5}$ monitors is based upon the site level design value and a number of different factors identified in federal regulations and summarized in Table 22. Sites located in areas with more severe air quality conditions generally are required to collect measurements more frequently than other sites.

The current and required sampling frequency for $PM_{2.5}$ FRM monitors located in air districts covered by this ANP are shown in Table 23 and also in Appendix A. Exceptional events are included in the determination of the design values shown here.

Table 22: Criteria for Minimum Sampling Frequency for FRM $PM_{2.5}$ Monitoring

1:6 may be approved by Regional Administrator	1:3	1:1
Collocated with continuous FEM monitor	Not collocated with continuous FRM/FEM monitor	Not collocated with continuous FRM/FEM monitor
AND	**OR**	**AND**
Annual DV is <90% of NAAQS and not the highest in the area	Annual DV is ± 10% of NAAQS and highest in the area	24-hour DV is ± 5% of NAAQS and the highest in the area
AND	**OR**	**AND**
24-hour DV is <90% of NAAQS and not the highest in the area	24-hour DV is ± 10% of NAAQS and highest in the area	Annual DV is below annual NAAQS
AND	**OR**	
24-hour NAAQS has not been exceeded one or more times in each of the past three years	24-hour NAAQS has been exceeded one or more times in each of the past three years	
	OR	
	NCore Site	
	OR	
	Required regional background site	
	OR	
	Required regional transport site	

Table 23: Required $PM_{2.5}$ Sampling Frequency for FRM monitors

Site Name	AQS ID	District	2024 24-hr DV	2024 Annual DV	Required Sampling Frequency	Current Sampling Frequency
Lakeport[1]	060333002	Lake	10	3.9	1:3	1:6
Woodland[2]	061131003	Yolo-Solano	25	7.9	1:3	1:6

[1] The Lake County AQMD is working with CARB and U.S. EPA to resolve district staffing and funding issues as well as QA issues with the continuous monitors before replacing FRM with FEM.
[2] The Woodland primary FRM monitor was replaced with an FEM monitor in July 2024.

Suitability for comparison to the annual $PM_{2.5}$ standard

The CFR states that for $PM_{2.5}$ FRM or FEM monitors used in area-wide monitoring and that meet siting criteria, the reported data are comparable to the annual $PM_{2.5}$ NAAQS. For a $PM_{2.5}$ monitor to be considered area-wide, the concentration values measured by the monitor should be representative of concentrations expected over an area with dimensions of a few kilometers. The $PM_{2.5}$ FRM and FEM monitors included in this report are sited per the definition of area-wide monitoring in the CFR and meet applicable requirements; therefore, the FRM and FEM data are suitable for comparison to the annual $PM_{2.5}$ NAAQS.

Requirements for $PM_{2.5}$ Background and Transport Sites

Within each state, federal regulations require at least one site measuring concentrations representative of regional background and at least one site representative of regional transport. The regulatory language referenced in 40 CFR 58 Appendix C 2.9 indicates that IMPROVE samplers used for regional background/regional transport requirements can be considered SLAMS.[1] Federal regulations require that monitors required to characterize regional background and transport have a minimum sampling frequency of one in every three days (1:3). The monitors sited to meet these requirements are listed below.

Table 24: Regional Background and Transport Sites for $PM_{2.5}$

Regional Background Sites (Monitor Type/AQS ID)	Regional Transport Sites (Monitor Type/AQS ID)
Northern: Point Reyes National Seashore (EPA/060410002) Southern: San Rafael Wilderness (EPA/060839000)	Vallejo (SLAMS/060950004)

All districts covered by this ANP meet the requirements for $PM_{2.5}$ minimum monitoring, near-road monitoring, and continuous monitoring. CARB is working with air districts to reassess the current sampling schedules and assist in applying for additional funding to comply with sampling frequency requirements and associated continuous collocation requirements.

[1] January 13, 2017 email communication from A.Meburst, EPA, to R.Fine/G.Sweigert/T.Najita/W.Tasat citing 40 CFR 58 Appendix C 2.9.

Section 6: Other Federal Monitoring Requirements

Chemical Speciation Network (CSN)

Federal regulations also require that states continue to conduct speciated particulate measurements at CSN sites. These measurements are intended to support the development of State Implementation Plans and research activities. Some air districts in California conduct additional speciated particulate measurements to fulfill specific local objectives. Table 25 lists the California sites in the National Speciation Trends Network (CSN STN and CSN Supplemental) and local district speciation sites. CSN STN sites are required to use the national contract for shipping, handling, and analysis of samples for consistency. CSN Supplemental sites have the option of using other state, local, or contract laboratories for analysis. Local district speciation sites are not required to submit data to AQS.

Table 25: $PM_{2.5}$ CSN Sites in California

Site Name	AQS ID	District	CSN STN Site	CSN Supplemental Site	Local Air District Site
Anaheim-Pampas	060590007	South Coast			x
Bakersfield-California Ave	060290014	San Joaquin Valley	x		
Calexico-Ethel St	060250005	Imperial County		x	
Chico-East Ave*	060070008	Butte County		x	
El Cajon-Lexington	060731022	San Diego	x		
Fontana-Arrow	060712002	South Coast			x
Fresno-Garland	060190011	San Joaquin Valley	x		
Livermore-Rincon	060010007	Bay Area			x
Los Angeles-North Main St	060371103	South Coast	x		
Modesto-14th	060990005	San Joaquin Valley		x	
Oakland-West	060010011	Bay Area			x
Portola-Gulling	060631010	Northern Sierra		x	
Riverside-Rubidoux	060658001	South Coast	x		
Sacramento-Del Paso Manor	060670006	Sacramento	x		

Site Name	AQS ID	District	CSN STN Site	CSN Supplemental Site	Local Air District Site
Sacramento-T Street	060670010	Sacramento		x	
San Jose-Jackson	060850005	Bay Area	x		
Vallejo-Tuolumne	060950004	Bay Area			x
Visalia-Ashland St	061072003	San Joaquin Valley		x	

* The speciation monitor at Chico is expected to be relocated to the Willits-Blosser site (060452003) in Mendocino County in July 2025

PM Monitor Spacing

Federal regulations require that high volume monitors, defined as monitors that have a sample flow rate > 200 liters per minute, are more than 2 meters away from all other PM samplers. Further, low volume monitors, those with a sample flow rate < 200 liters per minute, are required to be more than 1 meter away from all other PM monitors.

The PM monitors in the air districts covered by this ANP meet spacing requirements.

National Core Multipollutant Network (NCore) Monitoring

Sites in the NCore Monitoring measure multiple pollutants to support a wide range of air quality management objectives. NCore sites are intended to be long-term sites that will generate datasets useful for trend analyses and model evaluation. The NCore Monitoring includes rural and metropolitan sites. As shown in Table 26, seven NCore sites are located in California; none of the sites are located in the air districts covered by this ANP, although the Fresno-Garland site is operated by CARB. More information about specific sites can be found in the ANPs submitted by air districts in which the sites are located.

Table 26: NCore Sites in California

Site	AQS ID	District	Site Type
El Cajon-Lexington Elementary	060731022	San Diego	Urban
Fresno-Garland	060190011	San Joaquin Valley	Urban
Los Angeles-N Main St.	060371103	South Coast	Urban
Riverside-Rubidoux	060658001	South Coast	Urban
Sacramento-Del Paso Manor	060670006	Sacramento	Urban
San Jose-Jackson	060850005	Bay Area	Urban
White Mountain Research Station	060270002	Great Basin	Rural

Photochemical Assessment Monitoring Station (PAMS)

Ozone nonattainment areas classified as serious, severe, or extreme were required to establish PAMS site(s) which provide enhanced monitoring of ozone, NOx, VOCs, and meteorological parameters. The enhanced monitoring is intended to provide comprehensive data to evaluate the nature of ozone pollution and craft effective planning strategies to improve air quality in effected areas.

On October 1, 2015, U.S. EPA substantially revised the PAMS requirements in 40 CFR part 58 Appendix D. As part of the revision, U.S. EPA required state and local monitoring agencies to make PAMS measurements (including hourly averaged mixing height) at NCore sites in CBSAs with a population of 1,000,000 or more. The revisions also required state monitoring agencies with moderate and above 8-hour ozone nonattainment areas and states in the Ozone Transport Region (OTR) to develop and implement an Enhanced Monitoring Plan (EMP) detailing enhanced ozone and ozone precursor monitoring activities to be performed to better understand area specific ozone issues.

In California, the Bay Area AQMD, Sacramento Metropolitan AQMD, San Diego County APCD, San Joaquin Valley APCD, and South Coast AQMD have established PAMS sites. The Fresno CBSA has triggered the PAMS 1 million population requirement according to the 2020 census results. CARB is working with the San Joaquin Valley APCD and the U.S. EPA to implement PAMS monitoring at the Fresno-Garland NCore site. Ventura County does not have any NCore sites and its CBSA (Oxnard-Thousand Oaks Ventura) is under 1,000,000. Therefore, it is not required to have a PAMS site at this time. However, Ventura County is nonattainment - serious for ozone and is required to develop and implement an EMP. CARB worked with Ventura County APCD and U.S. EPA Region 9 to develop an EMP in 2019, which was updated as part of the CARB 5-year Network Assessment in 2020.

Ozone air quality continues to improve in Ventura County due to the implementation of Ventura County APCD and State programs designed to reduce local and statewide ozone precursor emissions and ozone formation; therefore, no additional ozone or ozone precursor monitoring is planned or needed for the Ventura County nonattainment area at this time. The Ventura County APCD continues to monitor NO_2/NO/NO_X at the Simi Valley and El Rio sites; and surface meteorological parameters at its five monitoring sites.

Special Purpose Monitors (SPM)

In 2024, the following SPM monitors were operating in the area covered by this ANP.

- One PM_{10} FEM monitor was established on 3/1/2021 at San Juan Bautista (Monterey Bay ARD). The District is seeking EPA approval for closure. Additional information is included in Section 8.
- Two $PM_{2.5}$ monitors in the Monterey Bay ARD (Carmel Valley and King City) have been operating for more than two years and now serve as SLAMS.

Section 7: Federal Quality Assurance Requirements

Section 7A: CARB PQAO Collocation Requirements

Appendix A of 40 CFR 58 includes requirements for collocation of samplers to ensure that measurements of $PM_{2.5}$, PM_{10}, and Pb are of comparable quality throughout monitoring networks located in each PQAO.

$PM_{2.5}$ Collocation Status

Federal regulations require that 15 percent of the FEM and FRM monitors in the network of primary $PM_{2.5}$ monitors must have a collocated monitor. Collocated FRM monitors must have the same method of measurement. For each site with collocated $PM_{2.5}$ FEM monitors, half of the collocated monitors must have the same method of measurement and half must be FRM monitors. If there are an odd number of required collocated monitors, then the additional monitor must be an FRM monitor.

Federal regulations require that 80 percent of collocated $PM_{2.5}$ monitors are located at sites where the design values are within 20 percent of the $PM_{2.5}$ NAAQS. However, California is a large state in which environmental conditions can cause significant variation in ambient $PM_{2.5}$ concentrations across spatial and temporal scales. Thus, CARB determined that limiting the focus of collocation efforts on meeting the 80 percent metric would result in collocated monitors being tightly clustered in a limited geographic range, which would not adequately represent the range of environmental conditions in the PQAO that could potentially affect $PM_{2.5}$ measurements.

The current locations of collocated $PM_{2.5}$ samplers were collaboratively identified by CARB and air districts as representative of areas of expected high concentrations as well as areas with environmental conditions that could potentially affect measurements, which effectively addresses the quality control function of the collocated monitoring requirement.

Table 27: Collocation Requirements for $PM_{2.5}$ Monitoring Methods

Method Type	Method Description	# of Primary Monitors	# of Required Collocated Monitors	Sites with Collocated Monitors - Method Type (District)
143 (FRM)	R&P Model 2000 with VSCC	2	1	Eureka-Jacobs - 143/143 (North Coast)
145 (FRM)	R&P Model 2025 with VSCC	4	1	Bakersfield-California – 145/145 (San Joaquin Valley) Sacramento-Del Paso – 145/145 (Sacramento)
170 (FEM)	Met One BAM 1020 with VSCC	55	8	Calexico – 170/143 (Imperial) Folsom – 170/170 (Sacramento) Fresno-Garland – 170/145 (San Joaquin Valley) Sacramento-T St – 170/143 (Sacramento) Salinas – 170/143 (Monterey Bay) Simi Valley – 170/170 (Ventura) Victorville – 170/170 (Mojave Desert) Yuba City – 170/170 (Feather River)
181 (FEM)	Thermo TEOM 1400	1	1	Keeler – 181/145 (Great Basin)
209 (FEM)	Met One BAM-1022 with VSCC or TE-$PM_{2.5}$C	8	1	Redding – 209/143 (Shasta)
638 (FEM)[1]	Teledyne T640X at 16.67 LPM (w/ Network Data Alignment enabled)	2	1	Bishop/White Mountain – 638/145 (Great Basin)

[1]The FEM (238) monitors at Bishop/WMRC and Lee Vining (Great Basin) were converted to FEM (638) in July and August 2023, respectively.

PM_{10} Collocation Status

Federal regulations require that 15 percent of PM_{10} sites using manual FRMs in a PQAO have collocated monitors. Collocated monitors must use the same method of measurement as the primary FRM monitor.

Per U.S. EPA's guidance, the required number of collocation sites was determined by counting all of the PM_{10} manual FRM primary monitors, regardless of method code.

Table 28: Collocation Requirements for PM_{10}

Number of Primary FRM Monitors	# of Required Collocated Monitors	Sites with Collocated Monitors - Method Types (District)
9	1	Keeler-Cerro – 127/127 (Great Basin) Sacramento-Del Paso – 063/063 (Sacramento)

Pb Collocation Status

There are no Pb monitors operating within CARB PQAO, and therefore collocation requirements for Pb monitoring do not apply.

Section 7B: CARB Quality Management Branch (QMB)

The information in this section, along with the information available on CARB's Quality Assurance website, *https://ww2.arb.ca.gov/our-work/programs/quality-assurance*, provides an overview of CARB's Quality Management Branch (QMB) compliance status with the requirements of 40 CFR Part 58, Appendices A, C, and E. The compliance status overview is part of the annual network plan requirement.

QMB Background

The Quality Assurance Section (QAS), Standards Laboratory Section (SLS), and Quality Management Section (QMS) fulfill the QMB mission to ensure ambient air quality data meet or exceed the quality and program objectives of the end users. QAS, SLS, and QMS perform various quality assurance activities to verify that the data collected comply with procedures and regulations set forth by U.S. EPA and can be considered good quality data and data-for-record.

The quality assurance activities are achieved through various audits which are independent from the ambient air monitoring program responsibilities. California's large network and unique ambient air monitoring challenges require a comprehensive state-of-the-art audit program. CARB's audit program meets the federal requirements for conducting annual performance evaluations. Audits are conducted by using independent National Institute of Standards and Technology (NIST) traceable standards.

SLS is responsible for ensuring air monitoring equipment and QAS standards are in compliance with federally established acceptance criteria and traceable to national and international standards. QAS is responsible for conducting performance audits of criteria and non-criteria gaseous analyzers, particulate matter samplers, meteorological equipment, and laboratory analyses utilized for generating ambient pollutant level measurements. QAS also performs site reviews as well as reports quality assessment and quality control results. In addition, QAS in collaboration with SLS and QMS performs technical systems audits (TSA). QMS is responsible for ensuring CARB meets its federally mandated PQAO responsibilities and provides quality assurance oversight to monitoring organizations within CARB's PQAO. QMS also assesses the quality of data collected by air monitoring stations operating within CARB's PQAO through the

analysis of data submitted to U.S. EPA's Air Quality System (AQS) database and certified by monitoring organizations.

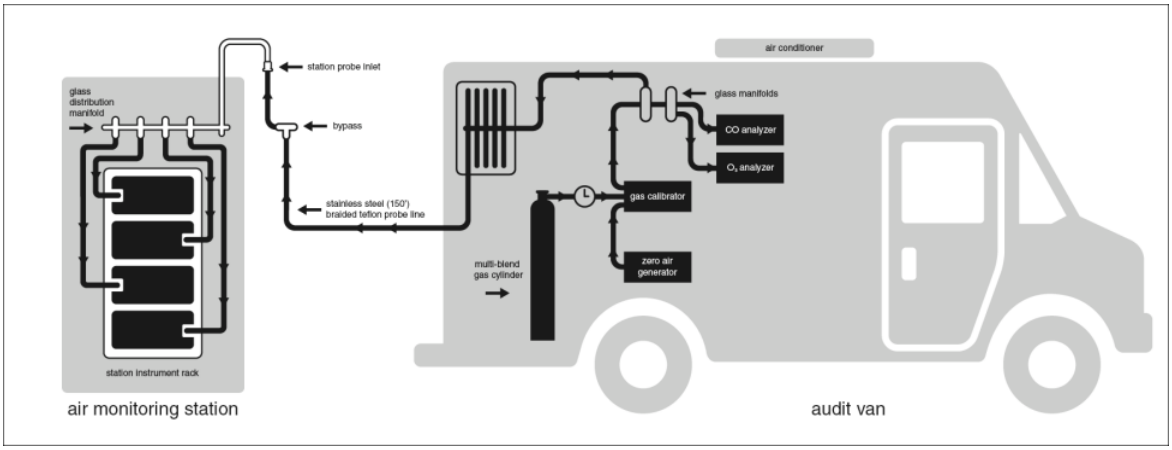
CARB Quality Assurance Activities

Monitoring Station Audits

Annually, QAS conducts through-the-probe (TTP) audits for all continuous gaseous analyzers in the network. TTP audits of the gaseous analyzers, which monitor for CO, NO_2, H_2S, SO_2, and ozone, are conducted in accordance with U.S. EPA requirements (Title 40, CFR, Part 58, Appendix A). These audits verify the accuracy of the gaseous analyzers and ensure the integrity of the entire sampling system. For most TTP audits, an audit van is transported by QAS to the ambient air monitoring station. Audit vans house the necessary instrumentation and equipment to allow the audit to be conducted at the same condition as the station instruments. TTP audits, depicted in Figure 4, are conducted by introducing NIST traceable gases from the van into the station sampling probe inlet at various concentrations. QAS compares the results obtained from the station analyzer to the known values generated in the van.

TTP audit methodology can identify deficiencies caused by poor analyzer response, pollutant scavenging contaminants, and sampling system leaks. Deficiencies like these can cause the gaseous analyzers to fail an audit and possibly affect the quality of the ambient air data.

Figure 4: Through-the-Probe Audit



Biannually, QAS determines the accuracy of each particulate matter sampler in the network by comparison of the instrument's flow rate to either a certified orifice or a mass flow meter. These devices are certified against a NIST traceable flow device or calibrator. The audit device is connected in-line with the sampler's flow path and the flow rate is measured while the sampler is operating under normal sampling

conditions. The true flow is calculated from the audit device's calibration curve. The sampler's flow is then compared to the true flow and a percent difference is determined for verifying compliance.

QAS also conducts annual audits of meteorological sensors using NIST traceable equipment. Accurate meteorological data are important for characterizing meteorological processes such as transport and diffusion, and to make air quality forecasts and burn-day decisions.

An integral part of a performance audit is conducting a siting evaluation. Stations that meet siting criteria at the time of initial setup may no longer conform due to updated regulations or changes in surrounding conditions and land use. Physical measurements and observations are noted on the site survey or accompanying documentation to determine compliance with 40 CFR Part 58, Appendix E requirements. Many of the siting issues result from the growth of vegetation such as trees infringing on the minimum distance required from probe inlets.

Laboratory Performance and System Audits

Laboratory mass analysis performance audits are conducted annually by QAS. These audits utilize NIST certified weights, hygrometers, and temperature sensors to verify the accuracy of the laboratory balance, relative humidity, and temperature sensors.

Technical System Audit

A TSA is an on-site inspection and review of a monitoring organization's entire ambient air monitoring program. CARB conducts TSAs of monitoring organizations within its PQAO in accordance with U.S. EPA Quality Assurance Guidance Document: Conducting Technical Systems Audits of Ambient Air Monitoring Programs, EPA-454/B-17-004, November 2017. Each monitoring organization within a PQAO must be audited on a six-year schedule. The entire measurement system is reviewed which includes sample collection, sample analysis, and data processing. TSAs include a review of staff records, procedures, instrumentation, facilities, and documentation to assure compliance with all applicable requirements. Following evaluation of available information, a report is issued which includes a summary of the audit process, and a summary of findings and recommendations to correct any issues identified.

Quality Assessment and Quality Control

QMS assesses the quality of data collected, in accordance with 40 CFR 58, Appendix A, by air monitoring stations operating within CARB’s PQAO through the analysis of data submitted to U.S. EPA’s AQS database and certified by monitoring organizations. The criteria by which the assessments are made are prescribed in 40 CFR 58,

Appendix A and U.S. EPA's Quality Assurance Handbook, and are defined by measurement quality objectives (MQO) including ambient data capture rate, precision, and bias. The ambient data capture rate represents the percentage of ambient data collected and uploaded to AQS compared to the total amount of data possible.

Gaseous pollutants assessed include CO, NO_2, O_3, and SO_2). For gaseous pollutants one-point quality control checks (1-pt QC check) are performed by respective monitoring organizations to confirm an instrument's ability to respond to a known concentration of gas. Precision represents the degree of variability among the 1-pt QC checks (i.e., how close they are to each other). These checks are also used to assess bias for each instrument by comparing how far the instrument's response is from the true value of a reference gas of known concentration.

PM assessed include PM_{10} and $PM_{2.5}$. Precision for most PM samplers is assessed by collocated sampling in which two identical or equivalent samplers are operated side-by-side. Bias for PM samplers is assessed by using the routine flow rate verifications (FRV) performed by respective monitoring organizations. During an FRV, flow rate from a PM sampler is compared against the flow rate from a reference standard. Total $PM_{2.5}$ bias for a PQAO is also assessed through the Performance Evaluation Program (PEP) audit administered by U.S. EPA.

Bias for both gaseous instruments and PM samplers is further verified by CARB's performance evaluation audits. CARB's performance evaluation audits include through-the-probe audits on gaseous instruments and flow rate audits on PM samplers.

Identifying and Correcting Deficiencies

A comprehensive corrective action system is an essential component for the enhancement of data quality and the facilitation of continuous improvement to the data collection process. During a performance audit, if a parameter fails to meet critical criteria (QA Handbook Volume II, Appendix D) or CARB control limits, an Air Quality Data Action (AQDA) request is issued to the facility operator. All AQDAs must be investigated by the operator and resolved to bring the parameter in question into compliance. The station operator completes the AQDA by documenting the resolution, specifying the time period during which data were potentially affected, and recommending whether the data are to be released, corrected, or invalidated. QMB reviews the completed AQDA and discusses any concerns with the operator. A finalized copy of the AQDA is forwarded to the operator and CARB's Air Quality Analysis Section.

Other issues identified as systematic or operational criteria that may impact or potentially impact data quality are documented through the issuance of a Corrective

Action Notification (CAN). The CAN process may be initiated by any person in CARB's PQAO who identifies an air monitoring issue that impacts or may impact the quality of air monitoring data. The responsible monitoring organization is expected to investigate the issue and implement appropriate corrective action(s) to resolve the issue and prevent recurrence. A copy of the completed CAN form including the corresponding corrective action is submitted to QMB for review. Once QMB and the responsible organization have worked together to implement an appropriate corrective action, a CAN closure notice is sent by QMB to the responsible organization.

Audit Report Summary

Information about each air monitoring station audited by QMB is available at *https://ww2.arb.ca.gov/applications/quality-assurance-air-monitoring-site-list-generator-1*. This web page provides the map location, latitude and longitude coordinates, site photos, the pollutants monitored, along with a detailed site survey of the instrumentation and physical parameters for each site.

The 2024 calendar year audit dates for both the gaseous analyzers and PM monitors and residence time for each gas analyzer operating at the monitoring sites covered in this report are provided in the detailed site tables in Appendix A. Audit results are directly submitted to AQS quarterly per Appendix A of 40 CFR Part 58.

In addition, as required by 40 CFR Part 58.15, CARB submits a data certification letter along with the required AQS reports (AMP450NC and AMP600) to U.S. EPA annually. The most recent certification letter was sent to the U.S. EPA on April 21, 2025.

Section 8: Proposed and Recently Implemented Monitoring Site Changes

CARB utilizes the annual network plan process to document and provide the public opportunities to comment on any proposed changes to the monitoring network. Any received comments are formally addressed via letters and are documented in the network plan. The network plan is submitted to the U.S. EPA annually for formal approval of all network modifications.

Table 29 lists the proposed and recently implemented monitoring site changes that CARB is currently aware of in the areas covered by this ANP. All available supporting documentation is provided in Appendix C of this ANP.

Table 29: Proposed and Recently Implemented Changes to the Sites in the CARB ANP

District	Site (AQS ID)	Comment
Butte County APCD	Paradise-Clark (060072003)	CARB has completed the consolidation of two Paradise monitoring stations to a single new location at 5913 Clark Road. Sampling at the new Paradise-Clark station began in May 2023, installation of the site Met tower is scheduled for Summer 2025.
El Dorado County AQMD	Echo Summit (060170012)	CARB has requested the closure of the Echo Summit ozone seasonal monitoring station due to logistic complexities. Excessive winter snows load prevents site access delaying the operational start date. The site infrastructure is past its lifetime and in need of major repairs, this is coupled with damage to the shelter from snow load and plowing activities. An alternative location at South Lake Tahoe has been proposed to conduct ozone monitoring in the airshed. CARB received approval from the U.S. EPA on April 15, 2025.
	South Lake Tahoe-Sandy Way (060170011)	CARB has requested the startup of the ozone monitoring at the South Lake Tahoe monitoring station as the preferred replacement for monitoring currently conducted at Echo Summit monitoring station. The site offers similar air-shed representativeness as the Echo Summit, however, allows year-round access. Ozone monitoring can be initiated utilizing the existing infrastructure at South Lake Tahoe. CARB received approval from the U.S. EPA on April 15, 2025.
Imperial County APCD	Westmorland (060254003) Niland (060254004) IV Desert Museum (new site)	District plans to install a $PM_{2.5}$ BAM 1022 as a Special Purpose Monitor (SPM) at these sites by the end of 2025; however, the timeline remains uncertain. Currently, efforts are focused on providing information to the U.S. EPA and CARB.
Lake County AQMD	Lakeport-S. Main Street (06-033-3002)	District is working with CARB and EPA to resolve District staffing and funding issues, as well as identifying equipment options for PM_{10} & $PM_{2.5}$ to resolve the sampling frequency issue.
Mendocino County AQMD	Ukiah - Municipal Airport (06-045-0011)	District relocated its ozone site from Ukiah-Gobbi Street to Ukiah - Municipal Airport. The monitoring start date at the new site was 10/04/2024. See CARB note below.

District	Site (AQS ID)	Comment
Monterey Bay ARD	Hollister (06-069-0002)	District installed a $PM_{2.5}$ Met One BAM 1020 on 1/11/2024 and installed a Thermo 49iQS ozone analyzer 5/1/2024.
	San Lorenzo Valley (06-087-1005)	The site was relocated across the campus due to construction activities at the school. This relocation was approved by EPA.
	San Juan Bautista (06-069-0004)	District is soliciting EPA for permission to shut down this Special Purpose Monitor (SPM) station that monitors for PM_{10}.
	King City (06-053-0008) Santa Cruz (06-087-0007)	District replaced TEI 49C ozone analyzer with TEI 49iQ.
	-	District is planning on purchasing various new monitoring equipment and items with the EPA IRA grant. District is migrating from a server-based database system to a cloud-based database system with DR DAS using EPA IRA grant funds.
Northern Sierra AQMD	Truckee (06-057-1001)	District installed a $PM_{2.5}$ BAM 1022 at Truckee site to replace the BAM 1020 on 8/28/24. This change was necessitated due to the BAM 1020 becoming inoperable. District anticipates having to relocate the Truckee (06-057-1001) site within the next 18 months due to potential changes in building ownership.
	Chester (06-063-1007)	District is planning to replace the $PM_{2.5}$ BAM 1020 with a BAM 1022.
	-	District is planning to establish a new monitoring site in Loyalton, Sierra County, by installing a BAM 1022. Sierra County currently has no monitoring sites.
Northern Sonoma County APCD	Healdsburg-Matheson (06-097-0002)	District has replaced the PM_{10} Met One BAM 1020 at Healdsburg-Matheson site due to equipment failure caused by water damage. A new PM_{10} Met One BAM 1020 was installed on March 11, 2025.
Placer County APCD	-	District was awarded a USEPA IRA Air Monitoring grant to purchase additional ozone calibrators (API T703U) to perform auto calibration at each site. The grant provides the District with five years to accomplish the project.
Shasta County APCD	Shasta Lake - Lake Blvd (06-089-0009)	District has replaced the Teledyne API T265 ozone analyzer with a Teledyne API T400 ozone analyzer.
	Redding-Health Department (060890004)	District is seeking approval from the EPA to shut down the PM_{10} HiVol monitor in Redding. District is also planning to replace the BAM 1022 $PM_{2.5}$ monitor with a BAM $1020_{2.5}$ monitor. If the District receives funding to switch to a 1020, District will no longer be required to co-locate and will shut down the R&P $PM_{2.5}$ monitor.
Siskiyou County APCD	Mount Shasta (None)	District is operating the $PM_{2.5}$ Met One BAM 1022 monitor at the Mount Shasta site. The site is under review due to data inconsistencies and unreliable network connectivity.
	Happy Camp (None)	District plans to deploy a $PM_{2.5}$ Met One BAM 1022 and API T400 Photometric Ozone Analyzer as Special Purpose Monitors and is awaiting proper site selection approvals.

District	Site (AQS ID)	Comment
Ventura County APCD	Simi Valley-Cochran Street (061112002)	The Simi Valley Upper Air site (06-111-0008) was shut down on 5/11/23 due to land use development needs by the property owner. A Vaisala Ceilometer CL61 was installed at the Simi Valley – Cochran Street (06-111-2002) site on 6/8/2023. The CL61 data is used to calculate and observe mixing heights as part of the district's Enhanced Ozone Monitoring Program (EMP).
Yolo-Solano AQMD	Woodland (061131003)	The R&P Partisol-Plus 2025 was shut down on July 1, 2024; the Met One BAM 1020 is now the only $PM_{2.5}$ sampler at the Woodland site.
CARB	Nevada City	CARB is currently assessing monitoring station options in Nevada City to establish an Ozone monitoring site. Operation is expected to begin in the Fall of 2025.
CARB, Butte County APCD, and Mendocino County AQMD	Chico-East Avenue (06-007-0008) Willits-Blosser Lane (06-045-2003)	CARB is working with the Butte County APCD, Mendocino County AQMD, and the EPA to move the Chico-East Avenue (06-007-0008) supplemental speciation monitor to the site at Willits-Blosser Lane (06-045-2003). The goal is to have monitor operational by July 1st, 2025. This change is being proposed because Chico-East has been recording values below the annual $PM_{2.5}$ standard of 9 ug/m3 and has a long-term data record for speciation analysis, while $PM_{2.5}$ annual averages at Willits-Blosser Lane are currently above the new annual standard with no speciation data to aid in understanding the cause.

CARB operates multiple sites in districts that are not covered by this ANP. Table 30 lists proposed and recently implemented changes to the CARB operated sites in San Joaquin Valley APCD. For more detailed information of changes in these districts, please see the individual district plans.

In 2022, CARB submitted a request to the U.S. EPA to discontinue CO monitoring at four locations, Chico-East (06-007-0008), Stockton-University Park (06-077-1003), Modesto-14th Street (06-099-0005) and Calexico-Ethel (06-025-0005). The U.S. EPA approved the closure of the CO monitor at the Calexico – Ethel site in 2023 (the approval letter is attached in Appendix C of the 2024 ANP). However, U.S. EPA decided that CARB's 2004 Carbon Monoxide Maintenance State Implementation Plan (SIP) needed to be updated before they would approve the site closure request for three CO maintenance areas: Chico Urbanized Area, Modesto Urbanized Area, and Stockton Urbanized Area. On April 4, 2024, CARB submitted the 2023 Revision to the California SIP for CO to the U.S. EPA, and on March 31, 2025, the U.S. EPA issued a notice of proposed rulemaking to approve the revision to the California SIP that removes CO contingency measures and monitoring requirements from the maintenance plan for three CO maintenance areas: Chico Urbanized Area, Modesto Urbanized Area, and Stockton Urbanized Area.[2]

[2] Federal Register, Air Plan Approval; California; State Implementation Plan Revision for Chico, Modesto, and Stockton Carbon Monoxide Maintenance Areas, *2025-05369.pdf*

Table 30: Proposed and Recently Implemented Changes to the CARB Operated Sites in the Other District ANPs

District	Site (AQS ID)	Comment
San Joaquin Valley APCD	Yosemite Village-Visitor Center (0604310010)	CARB is working with NPS staff to transition $PM_{2.5}$ and PM_{10} samplers from a MetOne BAM1020N to MetOne BAM1022 in 2025 due to required roof repair and building maintenance. Samplers are currently offline due to restricted rooftop access, per NPS Health and Safety staff.
	Bakerfield- Airport (Planz) (060290016)	Community engagement for Thermo 2025i $PM_{2.5}$ FRM sampler relocation is in process. Once community input is attained, relocation is planned for 2025.
	Fresno- Garland (060190011)	Legacy, MetOne Gen2 BAM1020 instruments for course PM_{10}/PM_{10}_S will be updated to the MetOne Gen3 BAM1020N as a network-wide update for outdated instrumentation.
	Fresno- Garland (PAMS) (060190011)	AutoGC installed and collecting VOC data in anticipation for June PAMS season launch.

Section 9: Environmental Justice and Community-Scale Monitoring in California

Consideration of Environmental Justice in California's Regulatory Monitoring Network

CARB is fully committed to developing a suitable template to incorporate its Racial Equity Lens tool and Community Engagement Model to address and advance environmental justice into our monitoring network design. CARB will seek to optimize future relocation efforts, inclusive of disadvantaged communities, by using resources such as the *CalEnviroScreen*[3] (developed by CalEPA) mapping tool to evaluate locations that are a benefit to underrepresented communities while meeting the criteria for regional SLAMS monitoring objectives. More structured procedures are anticipated to be unveiled as we work towards the next Five-Year Network Assessment Report. For example, CARB has extensively engaged with community members in the process of relocating the monitoring sites in Stockton.

Presently, more than one third of the regulatory monitoring sites in California are located within the disadvantaged communities and tribal communities as designated by CalEPA using *CalEnviroScreen* for California's Senate Bill (SB) 535 (De León, Chapter 830, Statutes of 2012).

California's Community-Scale Air Monitoring Efforts

In addition to considering environmental justice in regulatory network design, California has put tremendous efforts into community-scale monitoring. Besides the use of traditional regulatory monitors, emerging air quality sensors have been widely used in California's community-scale monitoring efforts, because they are generally low in cost, highly portable, and can require less power, siting infrastructure, and expertise than traditional air monitoring methods. The performance of the sensors, as well as the evaluation and correction approaches, are being improved over time. Data from air sensors have been used to help understand spatial variability of air quality in the communities, identify areas with relatively higher pollutant concentrations for further investigation, complement existing regulatory air monitoring networks, and evaluate personal exposure to air pollution.

California's community-scale monitoring has been largely supported under CARB's Community Air Protection Program[4], with a focus to reduce exposure in communities

[3] CalEnviroScreen developed by CalEPA: *https://oehha.ca.gov/calenviroscreen*

[4] CARB's Community Air Protection Program: *https://ww2.arb.ca.gov/capp*

most impacted by air pollution, as required by California's Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017).

Under the Community Air Protection Program, sixteen communities have been selected to develop Community Air Monitoring Plans (CAMP) and conduct community-scale monitoring as guided by the CAMPs. CAMPs are developed by close collaboration among CARB, air districts, and community steering committees (CSC). The community-scale monitoring is designed to provide real-time air quality information to the community, obtain detailed air pollution levels through the community, determine areas in the community of highest risk, quantify sources of air pollution within the community, and inform and potentially track community emissions reduction strategies. For the AB 617 monitoring networks across California, ambient concentrations are collected for a variety of pollutants including $PM_{2.5}$, PM_{10}, BC, CO, NO, NO_2, O_3, SO_2, H_2S, and CH_4. Air toxics are also monitored at a number of sites in some communities. As California moves forward with AB 617 community-scale monitoring, there has been increased stationary monitoring with FEMs (criteria pollutants) and non-FEMs (e.g., BC and H_2S), expanded air sensor network monitoring, as well as mobile monitoring. The numbers of air toxics (e.g., pesticides, BTEX, and VOCs) monitoring equipment and sites have also increased. The air districts also lead monitoring in response to episodic emissions events (e.g., odor complaints and fugitive emissions). In addition to formal recommendations by air districts, CARB continues to receive ongoing community self-nominations from residents and local community-based organizations across the state. Recognizing these self-nominations, CARB actively seeks ways to support these communities. Since the inception of the AB 617 program, CARB has maintained a list of 64 nominated communities that have not been formally selected under the program. CARB remains committed to prioritizing additional support for these impacted communities - where possible - to help improve air quality across the state.

Additionally, included in AB 617 is a provision for grants to community-based organizations (CBO) and California Native American Tribes for technical assistance and to support their efforts in this process. Started in 2018, CARB's Community Air Grants Program has supported more than 110 projects to set up or expand the monitoring networks in some AB 617 communities, as well as many other disadvantaged and low-income communities, primarily using air sensors.

Besides AB 617 monitoring networks and Community Air Grants monitoring projects, there have also been many special projects/studies for community-scale monitoring conducted in California, by CARB, air districts, communities, some major facilities, researchers, as well as private entities. These special projects/studies are generally conducted in response to specific concerns from the communities. Some examples are

the San Ysidro Monitoring Pilot Project to understand air quality in the US-Mexico border area (CARB), Study of Neighborhood Air near Petroleum Sources (SNAPS) (CARB), community monitoring near refineries (air districts and refineries), mobile monitoring across California (CARB, air district, researchers, and private entities), and many community air monitoring projects funded by U.S. EPA's Enhanced Air Quality Monitoring for Communities - Competitive Grant through the American Rescue Plan of 2021 (ARP). In 2023, CARB has also launched a $27M Statewide Mobile Monitoring Initiative (SMMI) through legislative appropriation to conduct mobile air monitoring in communities across the state. The SMMI aims to establish a comprehensive dataset of criteria pollutants, toxic air contaminants, and greenhouse gases, and foster inclusive community engagement to better understand and address local air quality concerns. This initiative complements AB 617's statewide air monitoring efforts by engaging communities beyond those currently selected under the program, filling critical air monitoring gaps, and supporting additional actions to reduce emissions and exposure.

In order to support the data collected under community-scale monitoring efforts, CARB has developed a centralized data portal and management system, AQview, to support a wide range of monitoring technologies, pollutants, and data providers[5]. AQview provides visualization and easy access of air quality data to community members, as well as transparent information on how data are collected and processed. Currently, AQview houses all AB 617 air monitoring data as well as data from several Community Air Grant projects. AQview provides assessments of data quality (especially from the sensor networks) through robust quality control (QC) checks to identify and flag any data records that appear questionable or invalid. AQview's QC checks include instrument-based upper limit and lower limit checks, spike check, and repeating values check. AQview also offers air quality information from approximately 7,000 independently-operated PurpleAir sensors across California, after applying robust California-specific correction algorithms and innovative QC routines to the data. Additionally, AQview hosts a range of air toxics data collected from various communities, encompassing volatile organic compounds (VOCs), toxic metals, and pesticides. In the future, CARB will be working to constantly add more data from community-scale monitoring efforts into AQview, such as those from more non-AB 617 communities and special projects/studies as described above.

Figure 5 shows a map for all the current community-scale monitoring sites (with data available in CARB's AQview system), along with the designated disadvantaged communities under SB 535, all the AB 617 communities, as well as the Consistently

[5] CARB's AQview system: *https://aqview.arb.ca.gov/*

Nominated Communities in California. Table 31 provides a summary of all community-scale monitoring data in CARB's AQview system[6].

[6] Detailed information about community-scale monitoring data can be found: *https://aqview.arb.ca.gov/resources/files/Pollutants_in_AQview.pdf*

Figure 5. Current Community-Scale Monitoring Sites and Independent Sensors (with Monitoring Data Available in CARB's AQview System) with the Designated Disadvantaged Communities

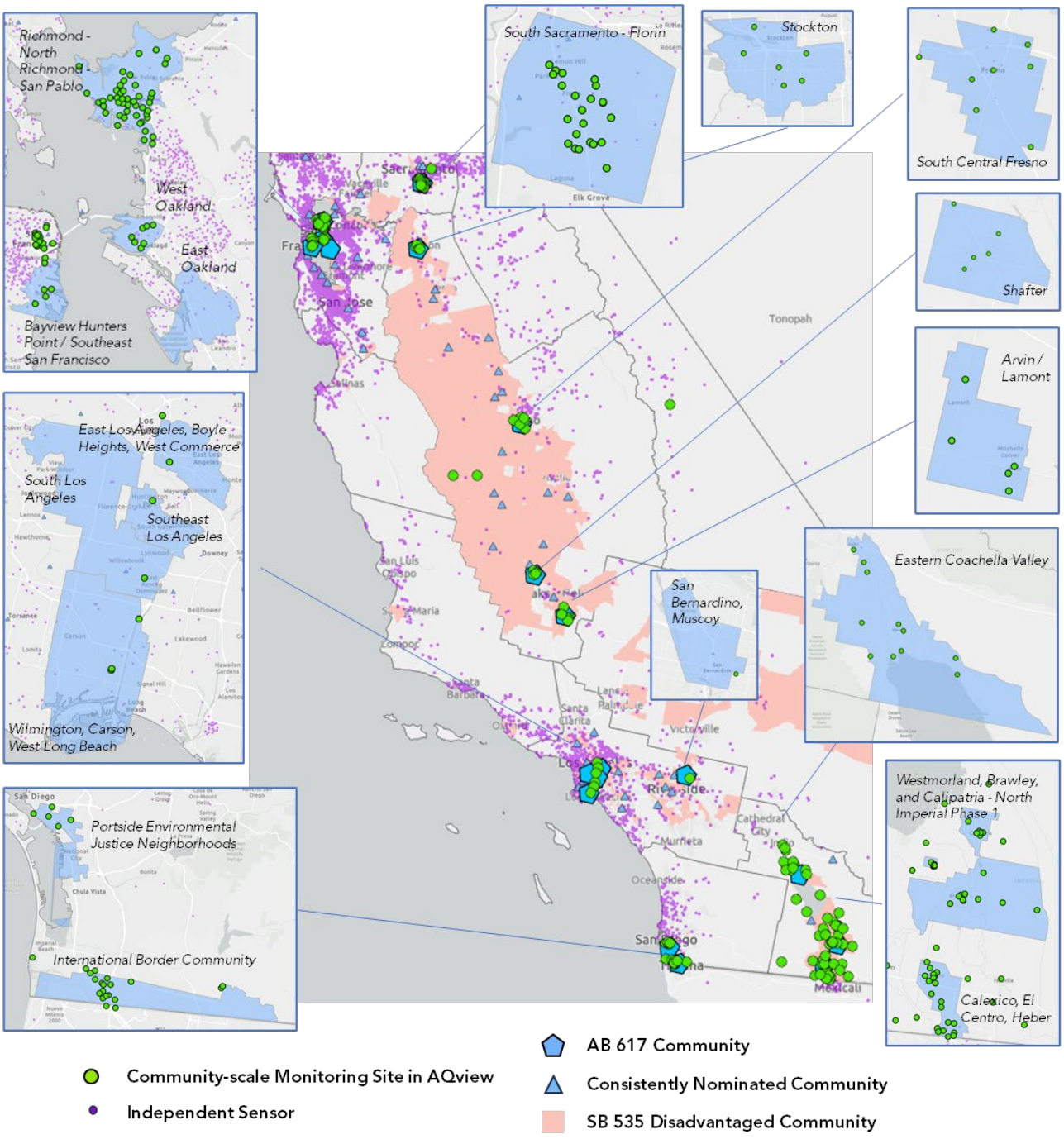


Table 31. List of All California AB 617 Monitoring Networks and Some Community Air Grant Projects with Monitoring Data Available in CARB's AQview System

District	Community	Data Provider	Pollutants *	No. of monitoring sites
AB 617 Monitoring Networks				
South Coast	East Los Angeles, Boyle Heights, West Commerce	South Coast AQMD	$PM_{2.5}$*, PM_{10}*, CO*, Particle count, O_3*, NO, NO_2, NO_x, SO_2*, CH_4*, BC*, H_2S*, Total NMOC*	2
	South Los Angeles	South Coast AQMD	$PM_{2.5}$, BC†, Particle Count, NO, NO_2, NO_x, O_3, CO	1
	Southeast Los Angeles	South Coast AQMD	$PM_{2.5}$†, BC†, Particle count, NO, NO_2, NO_x, CH_4, H_2S	1
	San Bernardino, Muscoy	South Coast AQMD	$PM_{2.5}$*, PM_{10}*, BC, CO*, CO_2†, Particle count*, NO*, NO_2*, NO_x*, O_3	1
	Wilmington, West Long Beach, Carson	South Coast AQMD	$PM_{2.5}$*, PM_{10}*, BC, NO, NO_2†, NO_X, CO*, Particle count, O_3*, SO_2*	2
	Eastern Coachella Valley	South Coast AQMD	$PM_{2.5}$*, PM_{10}*, BC*, O_3*, H_2S	3
	Eastern Coachella Valley	CARB	Pesticides	3
San Diego	Portside EJ Neighborhoods	San Diego County APCD	BC, OC/EC*†, Toxic VOCs*†, Toxic Metals*†, O_3*†, NO_2*†, $PM_{2.5}$*†, PM_{10}*†, Cr^{+6}*†, Ions*†	5
	International Border Community	San Diego County APCD	BC, OC/EC*†, Toxic VOCs*†, Toxic Metals*†, Total VOCs*†, O_3*†, CO*†, H_2S*†, SO_2*†, NO_2*†, $PM_{2.5}$*†, PM_{10}*†	2
	International Border Community	University of Washington, Casa Familiar, SDSU,	$PM_{2.5}$*, NO*, NO_2*, O_3, CO*, BC*	11
San Joaquin Valley	Stockton	San Joaquin Valley APCD	$PM_{2.5}$†, SO_2*†, NO*†, NO_2*†, NO_X*†, H_2S*†, O_3*†, CO*†, Total VOCs*	6
	Arvin / Lamont	San Joaquin Valley APCD	$PM_{2.5}$, SO_2*, H_2S*†, NO_2*†, NO_x*†, O_3*†, CO*†, BTEX*	5
	Shafter	San Joaquin Valley APCD	$PM_{2.5}$, PM_{10}*, SO_2*, H_2S*, NO_2*†, NO_x*, O_3*, CO*, Total VOCs†, BTEX*, Pesticides*	6

District	Community	Data Provider	Pollutants *	No. of monitoring sites
	South Central Fresno	San Joaquin Valley APCD	$PM_{2.5}$, PM_{10}*, CO*, SO_2 *, H_2S*, NO*, NO_2*, NOx*, O_3 *, Total VOCs†, BTEX*	9
Imperial County	Brawley, Westmorland, Calipatria	SCS Engineers	$PM_{2.5}$†, PM_{10}†	14
	Calexico, El Centro, Heber	Comité Civico del Valle, Inc	$PM_{2.5}$, PM_{10}	20
Bay Area	Richmond, North Richmond, San Pablo	Groundwork Richmond	$PM_{2.5}$, PM_{10}, $PM_{1.0}$, NO_2†, Particle Count*†, Total VOCs*†	47
	West Oakland	Aclima	$PM_{2.5}$†, O_3†, NO_2†	7
Sacramento Metro	South Sacramento, Florin	Sacramento Metropolitan AQMD	$PM_{2.5}$*, PM_{10}*, $PM_{1.0}$*, NO_2*†, O_3*, BC*, Particle Count*†, Toxic VOCs*, Toxic Metals*	27
Community Air Grant Projects (currently with data available in AQview)				
South Coast	Eastern Coachella Valley	Comité Civico del Valle, Inc	$PM_{2.5}$, PM_{10}	8
	Soboba Band of Luiseno Indians	Soboba Band of Luiseno Indians	$PM_{2.5}$, PM_{10}	3
San Joaquin Valley	The West Side (Huron, Avenal, and Coalinga)	Comité Civico del Valle, Inc, on behalf of LEAP Institute	$PM_{2.5}$, PM_{10}	2
Imperial County	Imperial County (some in the North Imperial Phase 1)	Comité Civico del Valle, Inc	$PM_{2.5}$†, PM_{10}†	26
Bay Area	San Francisco	Brightline Defense Project	$PM_{2.5}$†, PM_{10}†, $PM_{1.0}$	18
	Bayview Hunters Point/Southeast San Francisco	Comité Civico del Valle, Inc on behalf of Greenaction for Health and Environmental Justice	$PM_{2.5}$†, PM_{10}†	5
Great Basin	Big Pine Paiute Tribe of the Owens Valley	Big Pine Paiute Tribe of the Owens Valley	$PM_{2.5}$, PM_{10}	1

** Pollutants are not measured at all sites in the community*

† Some data are not available for download yet and will be added soon

Section 10: Network Information Resources

While this ANP includes a great deal of information about the ambient air quality monitoring network, much more information, including summaries of the pollutant data from the monitors around the State is readily available on the web. This section lists a number of additional sources of such information. Also listed is contact information for the agencies responsible for the monitoring covered in this report.

CARB's Monitoring and Laboratory Division (MLD) maintains web pages with information about all the existing monitoring sites that routinely monitor and submit air quality data in California. The pages also include detailed local maps showing the location of the sites. This information can be found at *https://ww2.arb.ca.gov/applications/quality-assurance-air-monitoring-site-search-1*. A more general MLD web page that provides links to other aspects of ambient monitoring is located at *https://ww2.arb.ca.gov/our-work/programs/ambient-air-monitoring-regulatory*.

Summaries of the official air quality data from sites around the State can be found at *http://www.arb.ca.gov/adam/welcome.html*. Summaries of the most recent preliminary data can be viewed at: *http://www.arb.ca.gov/aqmis2/aqmis2.php*. These last two sources of information are maintained by CARB staff of the Air Quality Planning and Science Division, as is the following more general web page that lists links to other aspects of the ambient air quality data program: *http://www.arb.ca.gov/html/ds.htm*.

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