

2025 CARB Annual Network Plan (ANP) & 5-Year Network Assessment

Public Workshop May 29, 2025

Logistics

• Presentation will be available on-line

Annual Monitoring Network Report | California Air Resources Board

- Draft 2025 ANP posted on May 23 for 30 days public comments. Please submit your comments to
 Jin Xu at <u>Jin.Xu@arb.ca.gov</u>
 Sunghoon Yoon at <u>Sunghoon.Yoon@arb.ca.gov</u>
- Problems during presentation

Email Matthew Densberger at *Matthew.Densberger@arb.ca.gov*



Draft 2025 ANP Overview

- Types of monitoring networks in California
- Regulatory Monitoring Network
- Annual Network Plan and requirements



Types of Monitoring Networks in California

Regulatory (criteria pollutants)

- Ground-level ozone (O₃)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)

- Particulate matter (PM_{2.5} and PM₁₀)
- Sulfur dioxide (SO₂)
- Lead (Pb)
- Toxic air contaminants
- Greenhouse gas emissions (e.g., CO_2 , CH_{4} , and N_2O)
- Community-scale



Regulatory Monitoring Network

- Criteria pollutant monitoring
- Over 250 sites in California
- Operated by CARB, Districts, Tribes, and Federal Agencies
- Monitors audited by MLD on annual or semi-annual basis
- Network Plans submitted on an annual basis to EPA
- Monitoring Network Assessments on a 5-year basis to EPA



Environmental Justice (EJ) in Regulatory Monitoring Network

- ANP network system modification process
- Five-Year Monitoring Network Assessment
- More than one third of the regulatory monitoring sites are located within disadvantaged communities and tribal communities



Regulatory Monitoring Objectives

40 CFR 58, Appendix D

- Support compliance with state and federal standards
- Provide air quality data to the general public
- Support air quality research



Federal Site Types

- Highest concentration
- Maximum precursor emissions impact
- Population exposure
- Source oriented
- Upwind background
- General/background
- Extreme downwind

- Regional transport
- Welfare related impacts
- Quality assurance
- Other



Spatial Scale of Different Site Types

| Spatial Scale of Representativeness | Definition |
|-------------------------------------|--|
| Microscale | Several meters up to about 100 meters |
| Middle scale | About 100 meters to 0.5 kilometer |
| Neighborhood scale | 0.5 to 4.0 kilometers range |
| Urban scale | On the order of 4 to 50 kilometers |
| Regional scale | From tens to hundreds of kilometers |
| National and global scales | Characterizing the nation and the globe as a whole |



Regulatory Monitoring Stations

- Types of monitoring stations
 - State and Local Air Monitoring Station (SLAMS)
 - National Core Network (NCore)
 - Photochemical Assessment Monitoring Station (PAMS)
 - PM Chemical Speciation Network(CSN)
 - Special Purpose Monitor (SPM)
 - Interagency Monitoring of Protected Visual Environments (IMPROVE)
 - Clean Air Status and Trends Network (CASTNET)
- Types of regulatory monitors
 - Federal Reference Method (FRM)
 - Federal Equivalent Method (FEM)

Appendix C to Part 58–Ambient Air Quality Monitoring Methodology



Annual Monitoring Network Plan



Annual Monitoring Network Plan (ANP)

- Annual network plan
- Content of CARB annual network plan
- Federal minimum monitoring requirements
- Detailed site information
- Ozone waiver requests



Annual Network Plan Requirements

- Required under federal regulations submitted to the U.S. EPA by July 1st of each year
- 40 CFR 58.10: Annual Monitoring Network Plan and periodic network assessment

"The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, D, and E of this part, where applicable."

- 40 CFR 58, Appendix A: audits; collocation
- 40 CFR 58, Appendix D: Network Design Criteria
- 40 CFR 58, Appendix E: Probe and Monitor Path Siting Criteria
- It is more of a documentation tool than a planning tool.



Areas Covered in the CARB ANP



Primary Quality Assurance Organization (PQAO) Drafting Their Own ANP

CARB, Bay Area, South Coast, San Diego

• CARB PQAO

26 Districts Included in the CARB ANP

Amador County, Antelope Valley, Butte County, Calaveras County, Colusa County, Eastern Kern,

El Dorado County, Feather River, Glenn County, Imperial County, Lake County, Lassen County, Mariposa County, Mendocino County, Modoc County, Mojave Desert, Monterey Bay, Northern Sierra, Northern Sonoma County, Placer County, Shasta County, Siskiyou County, Tehama County, Tuolumne County, Ventura County, Yolo-Solano

<u>6 Districts Drafting Their Own ANP</u>

Great Basin,, North Coast, Sacramento, San Joaquin Valley, San Luis Obispo County, Santa Barbara

What is in the CARB ANP?

- Federal requirements
 - Minimum monitoring requirements
 - Quality assurance requirements
 - Particulate Matter collocation requirements
- Site information
 - Detailed information on each monitor
 - Recently implemented and proposed changes
 - Supporting documents
- Ozone waiver request
- Public Comments and CARB Responses





Federal Minimum Monitoring Requirements

• Each pollutant requires a minimum number of monitors based upon certain criteria

| Pollutant | Minimum Monitor Criteria |
|---|--|
| Ozone, PM ₁₀ and PM _{2.5} | Metropolitan Statistical Area (MSA) Population, Design Value Concentration |
| NO ₂ | MSA Population |
| Near Road NO ₂ | MSA Population, Annual Average Daily Traffic |
| SO ₂ | MSA Population, SO ₂ Emissions (tons/year) |
| Pb | Pb Emissions (NEI) - airports >1.0 tons/year - non-airport sources >0.50 tons/year |



Federal Minimum Monitoring Requirements

Example: Ozone Minimum Monitoring Requirements

| Metropolitan Statistical Area population | 3-year design value concentrations ≥85% of any Ozone NAAQS | 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 |

- o MSA: Sacramento-Roseville-Arden Arcade
- o Population: 2,398,834
- o Design Value: 0.075 ppm
- Design Value = 107 % of 0.070 ppm NAAQS

HOW MANY MONITORS ARE REQUIRED?





Federal Minimum Monitoring Requirements

Example: PM_{2.5} Minimum Monitoring Requirements

| Population | DV exceeds ≥ 85% of any NAAQS | DV exceeds < 85% of any NAAQS |
|---------------------|-------------------------------|-------------------------------|
| > 1 million | 3 sites | 2 sites |
| 500,000 - 1 million | 2 sites | 1 sites |
| 50,000 - <500,000 | 1 sites | 0 sites |

- o MSA: Bakersfield
- o Population: 909,233
- o Design Value: 48 μg/m³ (24-hour) and 14.7 μg/m³ (Annual)
- Design Value = 137% (24-hour) and 163% (Annual)

HOW MANY MONITORS ARE REQUIRED?





Minimum Monitoring Requirements

- Need more than minimum monitoring requirements?
 - State and Federal planning
 - Community needs
 - Emergency monitoring
 - Other Federal requirements
 - Highest concentration site
 - Background site
 - Transport site



Detailed Site Information

| Local Site Name: | | stass Vallen-Litton Building | |
|--|---------------------|--|--|
| 40 S ID: | 06-057-0005 | | |
| CBS Constitution | 29 02250 101 05567 | | |
| GF3 COOTAMACES. | 33,23332, 421,03301 | | |
| Screet Address. | 200 Likks | in Dr., Suite 520, Grass Valley, 55545 | |
| County: | | Nevada | |
| Distance to roadways [meters]: | | 1,256 to CA-20 | |
| Traffic Count (AADT,year) | | 37,000 (2015) | |
| Ground Cover: | | Asphalt | |
| Depresentative statistical area same (i.e. MSA_CRSA | TruckersGr | see Vallen Micronolitan Statistical Area | |
| Pollutant, POC | Ozone, 1 | PM2.5, 3 | |
| Primary, QA-Audit, Supplementary, or N/A | N/A | Primary | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective[s] | NAAQS | NAAQS | |
| Site type[s] | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledyne APIT400 | Met One BAM 1022 | |
| Method code | 87 | 203 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Probe height (meters) | 11.9 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |
| Distance between monitors fulfilling a GA collocation requirement (meters) | N/A | N/A | |
| Unrestricted airflow (degrees around probe/inlet or % of monitoring path) | 270 | 270 | |
| Probe material for reactive gases NO/NO2/NOy, SO2, O3; PAMS: VOCs, | Teflon | N/A | |
| Carbonyls (e.g. Pyrex, stainless steel, Teflon) | | | |
| Residence time for reactive gases NO/NO2/NOv, SO2, O3; PAMS; VOCs, | 10.3 | N/A | |
| Carbonyls (seconds) | | | |
| Will there be changes within the next 18 months? | No | No | |
| is it suitable for comparison against the annual PM2.5 NAA@S? | N/A | Yes | |
| Frequency of flow rate verification for manual PM samplers, including Pb | N/A | N/A | |
| samplers | | | |
| Frequency of flow rate verification for automated PM analyzers | N/A | Monthle | |
| Frequency of one-point QC check for gaseous instruments | Weeklu | N/A | |
| Date of Appual performance evaluation conducted in the past calendar year | 7/30/2024 | N/A | |
| for gaseous parameters | | | |
| Date of two semi-annual flow rate audits conducted in the past calendar year | N/A | 02/15/24 | |
| for DM - science | 1 | 1107/04 | |

| Local Site Name: | Grass Valley-Litton Building | | |
|---|------------------------------|----------------------------|----------------|
| AQS ID: | 06-057-0005 | | |
| GPS Coordinates: | 39.23352, -121.05567 | | |
| Street Address: | 200 Litton | Dr., Suite 320, Grass Val | ley, 95945 |
| County: | | Nevada | |
| Distance to roadways (meters): | | 1,256 to CA-20 | |
| Traffic Count (AADT,year) | | 37,000 (2015) | |
| Ground Cover: | | Asphalt | |
| Representative statistical area name (i.e. MSA, CBSA, other): | Truckee-Gras | ss Valley Micropolitan Sta | atistical Area |
| Pollutant, POC | Ozone, 1 | PM2.5, 3 | |
| Primary, QA-Audit, Supplementary, or N/A | N/A | Primary | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective(s) | NAAQS | NAAQS | |
| Site type(s) | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledyne API T400 | Met One BAM 1022 | |
| Method code | 87 | 209 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Probe height (meters) | 11.9 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |



Detailed Site Information

| Local Site Name: | Grass Valley-Litton Building | | |
|--|--|---|--|
| AQS ID: 06-057-0005 | | 06-057-0005 | |
| GPS Coordinates: | 29220101, 22222 92 | | |
| Streat Address: | 200 Libbar Dr. Saits 200 Carac Vallar SEAF | | |
| Caraba | E00 Ente | New de | |
| Councy. | | 1050 01 00 | |
| Distance to roadways (meters): | | 1,256 to CA-20 | |
| Traffic Count [AADT,year] | | 37,000 (2015) | |
| Ground Cover: | | Asphalt | |
| Representative statistical area name (i.e. MSA, CBSA, | Truckee-Gr | es Valley Micropolitan Statistical Area | |
| Pollutant, PUC | U2056, 1 | PM2.5, 3 | |
| Primary, QA-Audit, Supplementary, or N/A | N/A | Primary | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective(s) | NAAQS | NAAQS | |
| Site type(a) | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledyne APIT400 | Met One BAM 1022 | |
| Method code | 87 | 209 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Probe height (meters) | 11.9 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |
| Distance between monitors fulfilling a QA collocation requirement (meters) | N/A | N/A | |
| ,, | | | |
| Uprestricted airflow (degrees around probe/inlet or % of monitoring path) | 270 | 270 | |
| Probe material for reactive gases NO/NO2/NO# SO2_O3: PAMS: VOC4 | Teflon | N/A | |
| Carbonuls (e.g. Purey, stainless steel Teflon) | | | |
| Pasidance time for resulting and a NO/NO2/NO2 202 02: PAM2: VOCa | 10.9 | MU A | |
| Cash cashs (seconds) | 10.0 | nii o | |
| Carbonyis (seconds) | N. | N. | |
| Will there be changes within the next to months? | PNO NULL | No No | |
| Is it suitable for comparison against the annual Piviz,5 INPAGES | 1976 | 1 es | |
| rrequency or now rate venification for manual PMI samplers, including PD | III/A | nico. | |
| samplets | | Mandala | |
| r requency or now rate verification for automated PMI analyzers | <u>n/A</u> | ivionthiy | |
| rrequency or one-point wu check for gaseous instruments | w eekly | 1975 | |
| Date or Annual performance evaluation conducted in the past calendar year | 1/30/2024 | INCS. | |
| ror gaseous parameters | | | |
| Date of two semi-annual flow rate audits conducted in the past calendar year | N/A | 02/15/24 | |
| | | | |

| Local Site Name: | Grass Valley-Litton Building | | |
|---|------------------------------|----------------------------|----------------|
| AQS ID: | 06-057-0005 | | |
| GPS Coordinates: | 39.23352, -121.05567 | | |
| Street Address: | 200 Litton | Dr., Suite 320, Grass Val | ley, 95945 |
| County: | | Nevada | |
| Distance to roadways (meters): | | 1,256 to CA-20 | |
| Traffic Count (AADT,year) | | 37,000 (2015) | |
| Ground Cover: | | Asphalt | |
| Representative statistical area name (i.e. MSA, CBSA, other): | Truckee-Gras | ss Vallev Micropolitan Sta | atistical Area |
| Pollutant, POC | Ozone, 1 | PM2.5, 3 | |
| Primary, QA-Audit, Supplementary, or N/A | N/A | Primary | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective(s) | NAAQS | NAAQS | |
| Site type(s) | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledyne API T400 | Met One BAM 1022 | |
| Method code | 87 | 209 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Proba haight (matara) | 11.0 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |



Detailed Site Information

| Local Site Name: | Grass Valley-Litton Building | | |
|--|--|--|--|
| AQS ID: | 06-057-0005 | | |
| GPS Coordinates: | 38,23352, -121,05567 | | |
| Street Address: | 200 Litton Dr., Suite 320, Grass Valley, 35345 | | |
| County: | | Nevada | |
| Distance to roadwaws (meters): | | 1,256 to CA-20 | |
| Traffic Count (AADT near) | | 37.000 (2015) | |
| Ground Cover: | | Asphalt | |
| Representative statistical area name (i.e. MSA_CBSA | TrackeesGr | ass Valley Micropolitan Statistical Area | |
| Pollutost POC | 03444 1 | DM05.3 | |
| Primaru Rá-áudit Supplementaru or N/A | N/A | Primaru | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective(s) | NAAQS | NAAQS | |
| Site tupe(d) | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledone APIT400 | Met One BAM 1022 | |
| Method code | 87 | 203 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Probe height (meters) | 11.9 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |
| Distance between monitors fulfilling a GA collocation requirement (meters) | N/A | N/A | |
| Unrestricted airflow (degrees around probe/inlet or % of monitoring path) | 270 | 270 | |
| Probe material for reactive gases NO/NO2/NOy, SO2, O3; PAMS: VOCs, | Teflon | N/A | |
| Carbonyls (e.g. Pyrex, stainless steel, Teflon) | | | |
| Residence time for reactive gases NO/NO2/NOv, SO2, O3; PAMS; VOCs, | 10.3 | N/A | |
| Carbonyis (seconds) | | | |
| Will there be changes within the next 18 months? | No | No | |
| Is it suitable for comparison against the annual PM2.5 NAAQS? | N/A | Yes | |
| Frequency of flow rate verification for manual PM samplers, including Pb | N/A | N/A | |
| samplers | | | |
| Frequency of flow rate verification for automated PM analyzers | N/A | Monthly | |
| Frequency of one-point QC check for gaseous instruments | Weekly | N/A | |
| Date of Annual performance evaluation conducted in the past calendar year | 7/30/2024 | N/A | |
| for gaseous parameters | | | |
| Date of two semi-annual flow rate audits conducted in the past calendar year | N/A | 02/15/24 | |
| | 1 | | |

| Local Site Name: | Grass Valley-Litton Building | | |
|---|------------------------------|----------------------------|----------------|
| AQS ID: | 06-057-0005 | | |
| GPS Coordinates: | 39.23352, -121.05567 | | |
| Street Address: | 200 Litton | Dr., Suite 320, Grass Val | ley, 95945 |
| County: | | Nevada | |
| Distance to roadways (meters): | | 1,256 to CA-20 | |
| Traffic Count (AADT,year) | | 37,000 (2015) | |
| Ground Cover: | | Asphalt | |
| Representative statistical area name (i.e. MSA, CBSA, other): | Truckee-Gras | ss Valley Micropolitan Sta | atistical Area |
| Pollutant, POC | Ozone, 1 | PM2.5, 3 | |
| Primary, QA-Audit, Supplementary, or N/A | N/A | Primary | |
| Parameter Code | 44201 | 88101 | |
| Basic monitoring objective(s) | NAAQS | NAAQS | |
| Site type(s) | Population Exposure | Population Exposure | |
| Monitor type(s) | SLAMS | SLAMS | |
| Network affiliation(s) | N/A | N/A | |
| Instrument manufacturer and model | Teledyne API T400 | Met One BAM 1022 | |
| Method code | 87 | 209 | |
| FRM/FEM/ARM/Other | FEM | FEM | |
| Collecting Agency | Northern Sierra | Northern Sierra | |
| Analytical Lab (i.e. weigh lab, toxics lab, other) | N/A | N/A | |
| Reporting Agency | Northern Sierra | Northern Sierra | |
| Spatial scale | Neighborhood | Neighborhood | |
| Monitoring start date | 06/01/1993 | 12/6/2017 | |
| Current sampling frequency | Continuous | Continuous | |
| Required sampling frequency including exceptional events | N/A | N/A | |
| Sampling season | 1-Jan - 31-Dec | 1-Jan - 31-Dec | |
| Probe height (meters) | 11.9 | 12.1 | |
| Distance from supporting structure (meters) | 3.8 | 4 | |
| Distance from obstructions on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions on roof (meters) | N/A | N/A | |
| Distance from obstructions not on roof (meters) | No obstructions | No obstructions | |
| Height above probe for obstructions not on roof (meters) | N/A | N/A | |
| Distance to nearest tree drip line (meters) | >10 | >10 | |
| Distance to furnace or incinerator flue (meters) | N/A | N/A | |



Monitoring Site Changes (examples)

- Site Relocation
 - Shelter and power issues, area development, end of lease term, etc.
- Discontinuation
 - attainment during the previous 5 years
 - consistently measured lower concentration than other monitors in the same county during the previous 5 years
 - not required by an attainment or maintenance plan
- 40 CFR 58.14 System modification

| District | Site (AQS ID) | Comment |
|-------------|---|--|
| El Derada | 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. CARB received approval from the U.S. EPA on April 15, 2025. |
| County AQMD | 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 Taboo. CAPP received approval from the U.S. |
| CARB | | EPA on April 15, 2025. |

23

Ozone Seasonal Monitoring Waiver Request

• Five seasonal monitoring sites:

- o Echo Summit
- o Cool
- o Jerseydale
- Sutter Buttes
- o Tuscan Butte
- April October
- Justification:
 - O₃ concentrations are significantly lower in the early spring and late fall months
 - Located in remote, mountainous area
 - Winter weather conditions





Summary

- The CARB ANP provides detailed information about criteria pollutant monitoring sites and instruments operating in the regulatory monitoring network of 26 Air Districts within the CARB Primary Quality Assurance Organization (PQAO).
- The ANP also describes the proposed and recently implemented monitoring site changes.
- It shows that the monitoring sites in the areas covered by CARB ANP meet the federal air monitoring and quality assurance requirements of 40 CFR 58.10.



Contact Information

Sunghoon Yoon <u>Sunghoon.Yoon@arb.ca.gov</u> Jin Xu <u>Jin.Xu@arb.ca.gov</u>

Draft 2025 ANP and presentation available on-line Annual Monitoring Network Report | California Air Resources Board





CARB 5-Year Network Assessment



CARB 5-Year Network Assessment

• Federal regulations require State and local monitoring agencies to conduct a network assessment every 5 years [40 CFR 58.10(d)]

Review of the network

- Make sure requirements are met
- Identify monitoring gaps
- Considers whether existing sites can meet new monitoring requirements, continue to accurately characterize air quality in areas with large populations of sensitive groups, and support critical federal, State, local emission control programs
- Discuss future plans



CARB 5-Year Network Assessment

- Covers 26 of the 32 districts within the CARB PQAO
 - Remaining 6 opted out of being included in the CARB 5-Year Network Assessment
- Covers all, or a portion of, the monitoring programs in 11 air basins
 - Meteorology and topography of the air basins
 - Monitoring Sites and Population
 - Nature of the air quality problems Specifically Ozone and PM
- Specific Issues
 - Residential Wood Burning, Wildland and Prescribed Fires, Salton Sea PM Impacts, and Drought Related Impacts



Example: Sacramento Valley Air Basin

Ozone Design Values by County in the Sacramento Valley Air Basin

| County | Design Value Site | 2024 DV (ppm) |
|------------|-----------------------------|---------------|
| Butte | Chico-East Avenue | 0.066 |
| Colusa | Colusa-Sunrise Blvd | 0.058 |
| Glenn | Willows-720 N Colusa Street | 0.060 |
| Placer | Roseville-N Sunrise Blvd | 0.074 |
| Sacramento | Sacramento-Del Paso Manor | 0.075 |
| Shasta | Redding-Health Dept Roof | 0.067 |
| Solano | Vacaville-Ulatis Drive | 0.060 |
| Sutter | Sutter Buttes-S Butte | 0.068 |
| Tehama | Tuscan Butte | 0.069 |
| Yolo | Woodland-Gibson Road | 0.065 |
| Yuba | No Sites | - |





* Non-Regulatory sites & sites not covered in this Assessment are not labeled

Example: Placer County APCD

- Spans over a portion of three different air basins
 - Lake Tahoe Air Basin Tahoe City-221 Fairway Drive sites
 - Mountain Counties Air Basin Colfax-City Hall sites
 - Sacramento Valley Air Basin Remaining sites
- No additional monitoring needs are anticipated over the next five years

| County | Site | Operating Agency | Map# | Ozone | со | NO ₂ | SO ₂ | PM _{2.5} | PM ₁₀ |
|--------|------------------------------|---------------------|------|-------|----|-----------------|-----------------|-------------------|------------------|
| Placer | Auburn-11645 Atwood Road | District | | Х | | | | Х | |
| | Colfax-City Hall | District | | Х | | | | Χ* | |
| | Lincoln-2885 Moore Road | District | | Х | | | | Χ* | |
| | Roseville-N Sunrise Blvd | CARB | | Х | | Х | | Х | Х |
| | Tahoe City-221 Fairway Drive | District | | Х | | | | Χ* | |

* Non-Regulatory monitor



Enhanced Monitoring Plan (EMP)

- When the U.S. EPA revised the federal 8-hour average ozone standard to 0.070ppm
 - Revised monitoring requirements for the Photochemical Assessment Monitoring Station (PAMS) network
 - Added each state with ozone nonattainment areas that have been classified as Moderate or above must prepare an EMP
- CARB is responsible for submitting the EMP for the entire state



Enhanced Monitoring Plan

| Air District | County | Site | NCORE | PAMS |
|--------------|-------------|-------------------------|-------|------|
| Bay Area | Santa Clara | San Jose - Jackson | Х | |
| Bay Area | Alameda | Livermore | | Х |
| Great Basin | Inyo | White Mountain Research | Х | |
| Unified | | Center | | |
| Sacramento | Sacramento | Sacramento-Del Paso | Х | Х |
| Metro | | Manor | | |
| San Diego | San Diego | El Cajon - Lexington | Х | Х |
| | | Elementary School | | |
| San Joaquin | Fresno | Fresno - Garland | Х | Χ* |
| Valley | | | | |
| South Coast | Los Angeles | Los Angeles-North Main | Х | Х |
| | | Street | | |
| South Coast | Riverside | Rubidoux | Х | Х |

* PAMS measurements will be active in June 2025

CARB



NCore Monitoring Sites

- 40 CFR 58, Appendix D, Section 3, require that every state must operate at least one NCore site
 - 1-2 additional NCore sites for states with many metropolitan areas above the standard and complex terrain
- Long-term sites
- Measure a wide range of pollutants
- Provides data that are useful for a variety of purposes
 - Evaluating air quality trends, assessing regional and national model performance, and analyzing the formation, distribution, and transport of ozone and ozone precursors



PAMS Monitoring Sites

- 40 CFR 58, Appendix D, Section 5(a)
 - "State and local agencies are required to collect and report PAMS measurements at each NCore site ... located in a CBSA with a population of 1,000,000 or more, based on the latest census figures"
- Purpose is to help develop a deeper understanding of ozone precursor sources and ozone formation processes within major high ozone concentration areas



Summary

- The CARB 5-year Network Assessment Report determines that the existing network meets the federal monitoring objectives defined in 40 CFR Part 58 Appendix D.
- CARB continually assesses the monitoring needs and capabilities of the districts within the CARB PQAO, looking for ways to optimize resources while meeting as many monitoring needs as possible.
- The Enhanced Monitoring Plan determines that California meets or exceeds minimum monitoring requirements for ozone, NCore, and PAMS.



Contact Information

For the 5-Year Network Assessment and Enhanced Monitoring Plan

Ayla Moretti Ayla.moretti@arb.ca.gov Jin Xu <u>Jin.Xu@arb.ca.gov</u>



