SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FIVE YEAR AIR MONITORING NETWORK ASSESSMENT

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Introduction

A periodic network assessment of the South Coast Air Quality Management District (South Coast AQMD) ambient air monitoring network is required by Federal Regulations as a key tool to help ensure that criteria pollutants are measured in important locations and that monitoring resources are used in the most effective and efficient manner to meet the needs of multiple stakeholders. Network assessments help identify new data needs and associated technologies, find opportunities for consolidation of individual sites into multi-pollutant sites and identify geographic areas where network coverage should be increased or decreased based on changes in the population and/or emissions. The United States Environmental Protection Agency (U.S. EPA) requires that local agencies perform an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in Title 40, Part 58 (40 CFR § 58), Appendix D of the Code of Federal Regulations, whether new sites are needed, whether existing sites are no longer needed and can be terminated and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals and for any sites that are being proposed for discontinuance the effect on data users other than the agency itself. This report describes the assessment of the ambient air monitoring network operated by South Coast AQMD and fulfills the requirements for a periodic network review as listed in 40 CFR § 58.10. Regulation requires that the report be submitted to the U.S. EPA by July 1, 2020.

Air Quality Standards

U.S. EPA is required under the Clean Air Act (CAA) to establish National Ambient Air Quality Standards (NAAQS). Ambient air quality standards have been established by U.S. EPA for six principal pollutants, which are called "criteria" pollutants, including ozone (O3), PM (PM10 and PM2.5), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2) and lead (Pb). Local air quality agencies monitor criteria pollutants in order to demonstrate NAAQS attainment or non-attainment. Table 1 shows the current NAAQS.

South Coast AQMD encompasses two Core-Based Statistical Areas (CBSA) whose boundaries and codes mirror those of the Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget. The Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) has an estimated population of 13,214,799 and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) has an estimated population of 4,650,631 according to U.S. Census estimates for 2019. The Los Angeles-Long Beach-Anaheim MSA is designated non-attainment for current and former federal and state O3 standards, as well as the current PM2.5 standards. The Los Angeles County portion of the South Coast Air Basin (Basin) is also designated as a nonattainment area for the federal Pb standard based on source-specific monitoring at two locations. The Coachella Valley Planning Area is part of the Riverside-San Bernardino-Ontario MSA and is designated as a nonattainment area for both O3 and the PM10 NAAQS. The Basin continues to be in attainment of the CO, NO2 and SO2 NAAQS.

The CAA requires areas not attaining the NAAQS to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner. The criteria pollutant monitoring network is designed to support attainment/nonattainment determinations by

considering the most recent three years of data from each monitoring site and pollutant to calculate a design value (DV) for comparison to NAAQS.

TABLE 1. National Ambient Air Quality standards and Design Value Requirements

Pollutant	Averaging Time**	NAAQS Level	Design Value Form of NAAQS*
Ozone (O_3)	1-Hour (1979) [revoked 2005]	0.12 ppm	Not to be exceeded more than once per year averaged over 3 years
	8-Hour (2015)	**0.070 ppm**	**Annual fourth highest 8-hour average concentration, averaged over 3 years**
	8-Hour(2008) [revised 2015]	0.075 ppm	
	8-Hour(1997) [revoked 2015]	0.08 ppm	
Fine Particulate Matter (PM2.5)	**24-Hour (2006)**	**35 µg/m³**	**3-year average of the annual 98th percentile of daily 24-hour concentration**
	Annual (2012)	**12.0 µg/m³**	**Annual average concentration, averaged over 3 years** *(annual averages based on average of 4 quarters)*
	Annual (1997) [revised 2012]	15.0 µg/m³	
Respirable Particulate Matter (PM10)	**24-Hour (1987)**	**150 µg/m³**	**Not to be exceeded more than once per year averaged over 3 years**
	Annual (1987) [revoked 2006]	50 µg/m³	Annual average concentration, averaged over 3 years
Carbon Monoxide (CO)	**1-Hour (1971)**	**35 ppm**	**Not to be exceeded more than once a year**
	8-Hour (1971)	**9 ppm**	
Nitrogen Dioxide (NO_2)	**1-Hour (2010)**	**100 ppb**	**3-year avg. of the annual 98th percentile of the daily maximum 1-hour average concentrations (rounded)**
	Annual (1971)	**0.053 ppm**	**Annual avg. concentration, averaged over 3 years**
Sulfur Dioxide (SO_2)	**1-Hour (2010)**	**75 ppb**	**99th percentile of 1-hour daily maximum concentrations, averaged over 3 years**
	24-Hour (1971)#	0.14 ppm	Not to be exceeded more than once per year
	Annual (1971)#	0.03 ppm	Annual arithmetic average
Lead (Pb)	**3-Month Rolling Average (2008)##**	**0.15 µg/m³**	**Highest rolling 3-month average of the 3 years**

Bold text denotes the current and most stringent NAAQS

* The NAAQS is attained when the design value (form of concentration listed) is equal to or less than the level of the NAAQS; for pollutants with the design values based on "exceedances" (1-hour ozone, 24-hour PM10, CO, and 24-hour SO_2), the NAAQS is attained when the concentration associated with the design value is less than or equal to the standard level:

- For 1-hour ozone and 24-hour PM10, the NAAQS is attained when the fourth highest daily concentrations of the 3-year period is less than or equal to the standard level
- For CO and 24-hour SO_2, the standard is attained when the second highest daily concentration of the most recent year is equal to or less than the standard level

** Year of U.S. EPA NAAQS update review shown in parenthesis and revoked or revised status in brackets; for revoked or revised NAAQS, areas may have continuing obligations until that standard is attained: for 1-hour ozone, the Basin has continuing obligations under the former 1979 standard; for 8-hour ozone, the NAAQS was lowered from 0.08 ppm to 0.075 ppm to 0.070 ppm, but the previous 8-hour ozone NAAQS and most related implementation rules remain in place until that standard is attained

Annual and 24-hour SO_2 NAAQS are expected to be revoked 12/2021, one year from final attainment designations for the (2010) 1-hour SO_2 NAAQS expected 12/2020

3-month rolling averages of the first year (of the three year period) include November and December monthly averages of the prior year; the 3-month average is based on the average of "monthly" averages

Monitoring Network Background

The earliest air monitoring station was operated by the Los Angeles County Air Pollution Control District at 5201 Santa Fe St. before being relocated to the agency's headquarters at 434 South San Pedro in 1955. The oldest monitoring location still in existence is located in Azusa which opened in 1957. The newest permanent sites were added in the cities of North Hollywood and Signal Hill

during 2020 to replace the Burbank and Long Beach (North) sites. The current air monitoring network sites and the date they began monitoring are shown in Table 2.

TABLE 2. Criteria Pollutant Monitoring Sites

	Location	AQS No.	Criteria Pollutants Monitored	Start Date
1	Anaheim	060590007	CO, NO2, O3, PM10, PM2.5	08/01
2	Anaheim Route 5 Near Road	060590008	CO, NO2	01/14
3	ATSF (Exide)	060371406	Pb	01/99
4	Azusa	060370002	CO, NO2, O3, PM10, PM2.5	01/57
5	Banning Airport	060650012	NO2, O3, PM10, PM2.5	04/97
6	Big Bear	060718001	PM2.5	02/99
7	Central San Bernardino Mountains	060710005	O3, PM10, PM2.5	10/73
8	Closet World (Quemetco)	060371404	Pb	10/08
9	Compton	060371302	CO, NO2, O3, Pb, PM2.5	01/04
10	Fontana	060712002	CO, NO2, SO2, O3, PM10, PM2.5	08/81
11	Glendora	060370016	CO, NO2, O3, PM10, PM2.5	08/80
12	Indio	060652002	O3, PM10, PM2.5	01/83
13	La Habra	060595001	CO, NO2, O3	08/60
14	Lake Elsinore	060659001	CO, NO2, O3, PM10, PM2.5	06/87
15	LAX Hastings	060375005	CO, NO2, O3, PM10, Pb	04/04
16	Long Beach (North)	060374002	PM2.5	10/62
17	Long Beach Route 710 Near Road	060374008	NO2, PM2.5	01/15
18	Long Beach (South)	060374004	PM10, Pb, PM2.5	06/03
19	Los Angeles (Main St.)	060371103	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/79
20	Mecca (Saul Martinez)	060652005	PM10	01/11
21	Mira Loma (Van Buren)	060658005	CO, NO2, O3, PM10, PM2.5	11/05
22	Mission Viejo	060592022	CO, O3, PM10, PM2.5	06/99
23	Norco	060650003	PM10	12/80
24	North Hollywood	060374010	NO2, O3, PM2.5	01/2020
25	Ontario Etiwanda Near Road	060710026	CO, NO2	06/14
26	Ontario Route 60 Near Road	060710027	NO2, PM2.5	01/15
27	Palm Springs	060655001	CO, NO2, O3, PM10, PM2.5	04/71
28	Pasadena	060372005	CO, NO2, O3, PM2.5	04/82
29	Perris	060656001	O3, PM10	05/73
30	Pico Rivera #2	060371602	CO, NO2, O3, PM10, Pb, PM2.5	09/05
31	Pomona	060371701	CO, NO2, O3	06/65
32	Redlands	060714003	O3, PM10	09/86
33	Rehrig (Exide)	060371405	Pb	11/07
34	Reseda	060371201	CO, NO2, O3, PM2.5	03/65
35	Rubidoux	060658001	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/72
36	San Bernardino	060719004	CO, NO2, O3, PM10, Pb, PM2.5	05/86
37	Santa Clarita	060376012	CO, NO2, O3, PM10, PM2.5	05/01
38	Signal Hill	060374009	NO2, O3,	01/2020
39	Temecula	060650016	O3, PM2.5	06/10
40	Uddeholm (Trojan Battery)	060371403	Pb	11/92
41	Upland	060711004	CO, NO2, O3, PM10, PM2.5	03/73
42	West Los Angeles	060370113	CO, NO2, O3	05/84

A description of the network for each criteria pollutant is provided below:

O3

The South Coast AQMD operates 29 sites where O3 measurements are made as part of the Air Monitoring Network. O3 sites are spread throughout the Basin with highest concentrations measured inland. Figure 1 in Appendix A shows the spatial distribution of these sites and Table 21 shows the minimum monitoring requirements.

PM2.5

South Coast AQMD operates a total of 19 Federal Reference Method (FRM) sites which exceeds the minimum number of required FRM PM2.5 State and Local Air Monitoring Stations (SLAMS) sites per 40 CFR § 58 Appendix D and shown in Table 22. These sites are located at National Core (NCore) as well as Non-NCore SLAMS sites and designed to complement each other; both types are used to meet the minimum PM2.5 network requirements.

FRM PM2.5 SLAMS monitoring sites are selected to represent area-wide air quality and include monitors collocated with NCore/Photochemical Assessment Monitoring Stations (PAMS) sites. The majority of monitoring sites are neighborhood scale, however, some micro scale PM2.5 monitoring sites are considered to represent area-wide air quality including the Long Beach Route 710 and Ontario Route 60 near road sites.

The Compton and Mira Loma (Van Buren) sites are designated daily design value sites. Minimum sampling frequencies are shown in Table 3. Monitors exceed the minimum NCore 1-in-3 requirements at the Rubidoux and Los Angeles (Main St.) sites. The federal minimum monitoring requirements for PM2.5 are being met and/or exceeded by the South Coast AQMD PM2.5 monitoring network.

Collocated FRM PM2.5 sites include Los Angeles (Main St.), Mira Loma (Van Buren), Pico Rivera and Rubidoux. 40 CFR § 58 Appendix A 3.2.3.4 (b) requires fifty percent of the collocated quality control monitors to be deployed at sites with annual average or daily concentrations estimated to be within plus or minus 20 percent of either the annual or 24-hour NAAQS and the remainder at the Primary Quality Assurance Organizations (PQAO) discretion. Of the collocated sites, Los Angeles (Main St.), Mira Loma (Van Buren), Rubidoux and Pico Rivera are all within 20 percent of the 24-hour or annual average NAAQS as required. Supporting data is shown in Table 3. The latest historical data can be found at:

(http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year).

Continuous PM2.5 monitors are required at 2 sites in each MSA as defined in 40 CFR § 58 Appendix D and shown in Table 23. Federal Equivalent Method (FEM) continuous analyzers are largely collocated with daily FRM monitors.

Where both 24-hour FRM PM2.5 samplers and FEM PM2.5 continuous analyzers are deployed together, they are sited as collocated for data comparison purposes. The FRM

PM2.5 sampler remains the primary analyzer used for attainment purposes and continuous analyzers are designated as audit samplers. If the primary 24-hour FRM PM2.5 is offline then continuous FEM analyzer data can be substituted if the FEM analyzer meets the acceptance criteria under 78 FR 3086.

Coarse particulate matter measurements (PM10-2.5) were required at NCore sites until the revision to 40 CFR § 58 on March 28, 2016. South Coast AQMD continues to measure this optional parameter by utilizing the continuous beta attenuation monitors (BAM) at the Los Angeles (Main St.) and Rubidoux air monitoring sites.

Numerous sites within the South Coast AQMD FRM PM2.5 network are in areas where PM2.5 levels are higher than the NAAQS. Therefore, multiple sites are listed as population exposure and high concentration. If a PM2.5 network modification were to be implemented for a site that was in exceedance of the PM2.5 NAAQS levels, South Coast AQMD would notify U.S. EPA Region IX via written communication. Public notice of network modifications occurs as part of the annual network plan process which is stated in the annual network plan as required in 40 CFR § 58.10 (c). All sites in the network using FRM samplers are suitable for comparison against the annual PM2.5 NAAQS.

TABLE 3. PM2.5 FRM Monitor Sampling Frequency

	Location	AQS No.	24-Hour DV	33-37ug/m^3	Annual DV	< 12 ug/m^3	Required Frequency[1]	Current Frequency
1	Anaheim	060590007	31	No	10.8	Yes	1-in-3	Daily
2	Azusa (composite)	060370002	25	No	10.3	Yes	1-in-3	1-in-3
3	Big Bear[5]	060718001	24	No	6.2	Yes	1-in-3	1-in-6
4	Compton	060371302	**38**	No	**12.5**	No	1-in-3	Daily
5	Fontana	060712002	30	No	11.5	Yes	1-in-3	1-in-3
6	Indio	060652002	15	No	7.9	Yes	1-in-3	1-in-3
7	Long Beach (North) [2]	060374002	29	No	10.5	Yes	1-in-3	Daily
8	Long Beach Route 710 Near Road	060374008	33	Yes	12.4	No	1-in-3	Daily
9	Long Beach (South)	060374004	29	No	10.6	Yes	1-in-3	Daily
10A	Los Angeles (Main St.) "A"	060371103	31	No	11.9	Yes	1-in-3	Daily
10B	Los Angeles (Main St.) "B"[3]	060371103	N/A	Collocated			1-in-6	1-in-6
11A	Mira Loma (Van Buren) "A"	060658005	**37**	Yes	13.5	No	1-in-3	Daily
11B	Mira Loma (Van Buren) "B" [3]	060658005	N/A	Collocated			1-in-6	1-in-6
12	Mission Viejo	060592022	17	No	7.9	Yes	1-in-3	1-in-3
13	Ontario Route 60 Near Road	060710027	34	Yes	**14.0**	No	1-in-3	Daily
14	Palm Springs	060655001	13	No	6.0	Yes	1-in-3	1-in-3
15	Pasadena "A"	060372005	25	No	9.7	Yes	1-in-3	1-in-3
16A	Pico Rivera #2 (composite)	060371602	31	No	11.9	Yes	1-in-3	1-in-3
16C	Pico Rivera #2 "C"[4]	060371602	N/A	Collocated			1-in-6	1-in-6
17	Reseda	060371201	24	No	9.8	Yes	1-in-3	1-in-3
18A	Rubidoux "A"	060658001	31	No	12.0	No	1-in-3	Daily
18B	Rubidoux "B" [3]	060658001	N/A	Collocated			1-in-6	1-in-6
19	San Bernardino	060719004	28	No	11.0	Yes	1-in-3	1-in-3

[1] Required SLAMS stations whose measurements determine the 24-hour DV for their area and whose data are within ±5 percent of the level of the 24-hour PM2.5 NAAQS must have an FRM or FEM operate on a daily schedule if that area's DV for the annual NAAQS is less than the level of the annual PM2.5 standard. Changes in sampling frequency attributable to changes in DV shall be implemented no later than January 1 of the calendar year following the certification of such data as described in § 58.15.

[2]Although the Long Beach (North) station has been closed, FRM PM2.5 measurements continue at the location until a suitable replacement site can be implemented.

[3] Partisol 2025i run as collocated on 1-in-6 run day.

[4]Partisol 2000i run as collocated on 1-in-6 run day.

[5]1-in-6 waiver with U.S. EPA.

PM10

Size-selective inlet manual high volume samplers are operated at 19 sites to meet the requirements for PM10 FRM sampling. The PM10 monitoring network contains two sites within 20% of the NAAQS as shown in the 2019 Air Quality Data Table (http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year). The South Coast AQMD PM10 monitoring network exceeds the minimum number of monitors required as shown in Table 24 and Figure 2.

PM10 sampling frequency requirements specify a 24-hour sample must be taken from midnight to midnight (local standard time) to ensure national consistency. The minimum monitoring schedule for the site in the area of expected maximum concentration (24-hour Design Concentration) shall be based on the relative level of that monitoring site concentration with respect to the 24-hour standard.

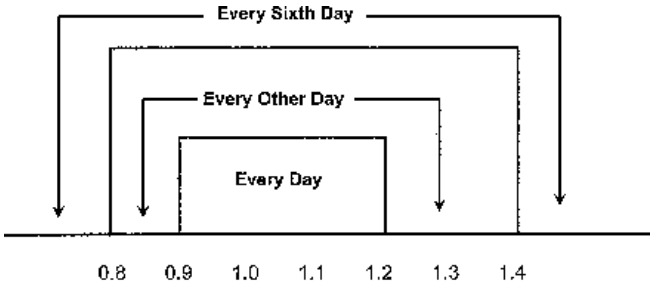

Figure 1 – Ratio to Standard

Evaluation of daily values show all PM10 FRM monitors operate on schedule of one sample every six days (1-in-6) with the exception of Anaheim. The sampling frequency requirement for Anaheim is met by utilizing a continuous FEM PM10 monitor. South Coast AQMD operates Indio, Mira Loma (Van Buren) and Rubidoux on a schedule of one sample every three days (1-in-3) as show in Tables 4 and 5.

Quality control for manual PM10 requires 15 percent of the primary monitors be collocated. Fifty percent of the collocated quality control monitors should be deployed at sites with daily concentrations estimated to be within plus or minus 20 percent of the applicable NAAQS and the remainder at the discretion of the PQAO. Guidance recommends, "if an organization has no sites with daily concentrations within plus or minus 20 percent of the NAAQS, 50 percent of the collocated quality control monitors should be deployed at those sites with the daily mean concentrations among the highest for all sites in the network and the remainder at the PQAOs discretion." The Indio, Mira Loma (Van Buren) and Rubidoux sites meet this requirement and are designated PM10 collocated and shown in Tables 4, 5 and 24.

PM10 continuous analyzers are operated at 11 sampling sites. These real-time devices are capable of making hourly particulate concentration measurements for real-time reporting. Figure 2 in Appendix A shows the spatial distribution of the sampling sites. For the most

part, real monitors are clustered in high concentration areas, with three located in the Coachella Valley desert area where wind-blown crustal material has caused exceedances of the 24-hour standard during exceptional events. In downwind areas of the Basin, a large fraction of particulate is formed in the atmosphere; PM10 typically reaches maximum levels in the Basin during late summer through early winter months.

TABLE 4. PM10 FRM Monitoring Stations Assigned Site Numbers

	Location	Site Code	ARB No.	AQS No.	Start Date	Schedule
1	Anaheim	ANAH	30178	060590007	01/03/99	1-in-6
2	Azusa	AZUS	70060	060370002	01/04/99	1-in-6
3	Banning	BNAP	33164	060650012	04/01/97	1-in-6
4	Central San Bernardino Mountains	CRES	36181	060710005	10/01/73	1-in-6
5	Fontana	FONT	36197	060712002	01/03/99	1-in-6
6A	Indio "A" & "B[1]" Composite	INDI	33157	060652002	01/30/99	1-in-3
6C	Indio "C" [4]	INDI	33157	060652002	01/30/99	1-in-6
7	LAX Hastings	LAXH	70111	060375005	04/01/04	1-in-6
8	Long Beach (South)	SLGB	70110	060374004	06/01/03	1-in-6
9	Mecca (Saul Martinez)	SLMZ	33033	060652005	01/01/11	1-in-6
10A	Los Angeles (Main St.) "A"	CELA	70087	060371103	01/03/99	1-in-6
10B	Los Angeles (Main St.) "B" [2]	CELA	70087	060371103	01/03/99	1-in-6
11A	Mira Loma (Van Buren) "A" & "B[1]" Composite	MLVB	33165	060658005	11/09/05	1-in-3
11C	Mira Loma (Van Buren) "C" [3]	MLVB	33165	060658005	03/08/12	1-in-6
12	Mission Viejo	MSVJ	30002	060592022	06/01/99	1-in-6
13	Norco	NORC	33155	060650003	12/01/80	1-in-6
14	Palm Springs	PLSP	33137	060655001	12/26/99	1-in-6
15	Perris	PERI	33149	060656001	05/01/73	1-in-6
16	Redlands	RDLD	36204	060714003	09/01/86	1-in-6
17A	Rubidoux "A"	RIVR	33144	060658001	01/03/99	1-in-3
17B	Rubidoux "B[3]"	RIVR	33144	060658001	01/03/99	1-in-6
18	San Bernardino	SNBO	36203	060719004	01/03/99	1-in-6
19	Santa Clarita	SCLR	70090	060376012	05/01/01	1-in-6

[1] Run on 1-in-3 run day as composite sampler
[2] Run as collocated NATTS.
[3] Run as collocated on 1-in-6 run day.

TABLE 5. PM10 Monitor Sampling Frequency Requirement

	Location	AQS No.	Design Conc. In ug/m^3 24-hour[1]	Required Sampling Frequency	Sampling Frequency	Primary Method
1	Anaheim[2]	060590007	**123**	1-in-2	1-in-1	FRM
2	Azusa	060370002	67	1-in-6	1-in-6	FRM
3	Banning	060650012	41	1-in-6	1-in-6	FRM
4	Central San Bernardino Mountains	060710005	47	1-in-6	1-in-6	FRM
5	Fontana	060712002	75	1-in-6	1-in-6	FRM
6	Glendora[3]	060370016	90	1-in-6	1-in-1	FEM
7	Indio	060652002	149	1-in-6	1-in-3	FRM
8	Lake Elsinore[3]	060659001	82	1-in-6	1-in-1	FEM
9	LAX (Hastings)	060375005	46	1-in-6	1-in-6	FRM
10	Long Beach (South)	060374004	55	1-in-6	1-in-6	FRM
11	Mecca (Saul Martinez)	060652005	**264**	1-in-6	1-in-6	FRM
12	Los Angeles (Main St.)	060371103	62	1-in-6	1-in-6	FRM
13	Mira Loma (Van Buren)	060658005	229	1-in-6	1-in-3	FRM
14	Mission Viejo	060592022	45	1-in-6	1-in-6	FRM
15	Norco	060650003	85	1-in-6	1-in-6	FRM
16	Palm Springs	060655001	105	1-in-6	1-in-6	FRM
17	Perris	060656001	70	1-in-6	1-in-6	FRM
18	Redlands	060714003	53	1-in-6	1-in-6	FRM
19	Rubidoux	060658001	92	1-in-6	1-in-3	FRM
20	San Bernardino	060719004	101	1-in-6	1-in-6	FRM
21	Santa Clarita	060376012	49	1-in-6	1-in-6	FRM
22	Upland[3]	060711004	93	1-in-6	1-in-1	FEM

[1] Design concentration is the combined 4th highest measurement of all monitors (FRM/FEM) over the most recent three-year period of time.
[2] Increased sampling requirement met through continuous monitor as shown in Table 4.
[3] FEM monitor only.
Note: Sampling frequency requirement per 58.12 (e) "use of the most recent 3 years of data might, in some cases, be justified in order to provide a more representative database."

CO

Area wide CO monitors measure concentrations at 21 ambient locations and 2 near road locations within the South Coast AQMD ambient air monitoring network. Figure 4 in Appendix A shows the spatial distribution of these sites. CO emissions, primarily from motor vehicles, show a pattern consistent with major freeway arteries. A review of data for 2019 shows state and federal standards for CO were not exceeded.

NO2

The NO2 network consists of 23 area wide and 4 near road sites. These sites are located in areas of highest expected NO2 concentrations.

The Near Road monitoring network consists of four sites which were implemented in January of 2014 and 2015. These sites were selected based upon criteria established in

U.S. EPA Near Road Technical Assistance Document and approved by U.S. EPA. The implementation plan was presented publicly at a near road workshop to solicit input. Near Road sites are adjacent to the most heavily traveled roadways identified in the basin where peak hourly NO2 concentrations occur within the near road environment. Site selection took into consideration satisfying siting criteria, site logistics (e.g., gaining access to property and safety) and population exposure for those who live, work, play, go to school, or commute within the near-roadway environment. The spatial distribution of NO2 monitors is shown in Figure 3 in Appendix A.

Additionally, the Regional Administrator (RA) identified 40 NO2 sites nationwide with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The RA in collaboration with South Coast AQMD identified the Los Angeles (Main St.) and San Bernardino sites from the existing area-wide monitoring network to meet this requirement (58.10 [a][5]). On September 30, 2013, Compton was also designated as a RA 40 site. Review of 1992 through 2019 NO2 data shows the state and federal standards for NO2 were not violated.

SO2

SO2 monitors are located at 4 sites. Figure 5 in Appendix A shows the spatial distribution of the sites. Most SO2 emissions result from federally regulated transportation sources such as marine vessels. The monitors are clustered largely in the areas where sources are located.

On June 22, 2010, U.S. EPA strengthened the SO2 NAAQS. Network design requirements included new minimum requirements be determined by the Population Weighted Emissions Index (PWEI).

> The PWEI shall be calculated by States for each Core Based Statistical Area (CBSA) they contain or share with another State or States for use in the implementation of or adjustment to the SO2 monitoring network. The PWEI shall be calculated by multiplying the population of each CBSA, using the most current census data or estimates and the total amount of SO2 in tons per year emitted within the CBSA area, using an aggregate of the most recent county level emissions data available in the National Emissions Inventory (NEI) for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tons per year. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO2 monitors are required within that CBSA and for any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO2 monitor is required within that CBSA.

TABLE 6. PWEI Calculation and Minimum Required SO2

CBSA	Population Estimate[1]	NEI SO2 Emmissions[2]	PWEI Value	Minimum Required SO2
31080	13,214,799	3,676.50	48,584	1
40140	4,650,631	1,382.00	6,427	1

[1] 2019 Census estimate available for download at https://www.census.gov/data/datasets/time-series/demo/popest/2010s-total-metro-and-micro-statistical-areas.html

[2] 2017 NEI Data most recent available at https://www.epa.gov/air-emissions-inventories/national-emissions-inventory

South Coast AQMD exceeds the minimum monitoring requirement for SO2 monitors; the federal standard has not been exceeded for nearly 36 years.

Pb

Total Suspended Particulate (TSP) Pb measurements are collected at 11 sites as part of the particulate network; 4 of the sites are source impact for Pb, 2 are NCore and the remaining 5 sites measure ambient Pb. Monitoring frequency and spatial distribution are shown in Table 7 and Figure 6 in Appendix A.

U.S. EPA regulation requires local agencies to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration in ambient air in excess of the NAAQS, taking into account the logistics and potential for population exposure. At a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year (tpy) and from each airport which emits 1.0 or more tpy based the most recent NEI or other scientifically justifiable methods and data (such as improved emissions factors or site-specific data). The most recent data from the NEI (https://www.epa.gov/air-emissions-inventories/national-emissions-inventory) shows there were no non-airport Pb sources that emit 0.50 or more tpy and no airports that exceeded the 1.0 tpy threshold requiring a monitoring plan.

Although no source Pb monitoring is required based on emission estimates, South Coast AQMD operates source Pb sites surrounding the Exide (Vernon), Quemetco (Industry) and the Trojan Battery facilities. Existing urban Pb monitoring include Compton, LAX Hastings, Pico Rivera, San Bernardino and Long Beach (South). Los Angeles (Main St.) and Rubidoux are designated NCore Pb sites, however, U.S. EPA proposed removing the requirement for Pb monitoring at NCore sites (79 FR 54395, September 11, 2014) and action may be taken to request these monitors be removed in consultation with U.S. EPA. The Van Nuys Airport Pb monitor was granted a retroactive waiver by U.S. EPA during 2017. South Coast AQMD continues to meet or exceed the minimum monitoring requirements for Pb. At of the end of 2019, South Coast AQMD is not in violation of the Pb NAAQS.

TABLE 7. Manual Pb FRM Monitor Sampling Frequency

	Location	AQS No.	Type	Required Sampling Frequency
1	ATSF (Exide)	060371406	Source	1-in-6
2	Closet World (Quemetco)	060371404	Source	1-in-6
3A	Compton "A"	060371302	Area Wide	1-in-6
3B	Compton "B" [2]	060371302	Area Wide	1-in-6
4	LAX Hastings	060375005	Area Wide	1-in-6
5	Long Beach (South)	060374004	Area Wide	1-in-6
6A	Los Angeles (Main St.)[1]	060371103	NCore	1-in-6
6B	Los Angeles (Main St.)[1, 2]	060371103	NCore	1-in-6
7	Pico Rivera #2	060371602	Area Wide	1-in-6
8	Rehrig (Exide)	060371405	Source	1-in-6
9	Rubidoux[1]	060658001	NCore	1-in-6
10	San Bernardino	060719004	Area Wide	1-in-6
11	Uddeholm (Trojan Battery)	060371403	Source	1-in-6

[1] U.S. EPA proposed removing the requirement for Pb monitoring at NCore sites (79 FR 54395, September 11, 2014).
[2] Run as collocated on 1-in-6 run day.
Note: Sampling frequency requirement per 58.12 (b)

Monitoring Programs Background

The following is a brief description of specific programs that are operated within the ambient air monitoring network:

Chemical Speciation Network (CSN)

U.S. EPA requires chemical speciation monitoring and analyses at sites designated to be part of the PM2.5 Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the RA.

PM2.5 speciation sampling is part of the South Coast AQMD PM2.5 monitoring program. Chemical speciation monitors are located at Los Angeles (Main St.) and Rubidoux as part of U.S. EPA PM2.5 CSN. These sites were selected and approved with the concurrence of the RA. The PM2.5 CSN sites include analysis for elements, selected anions, cations and carbon by a U.S. EPA contracted laboratory. Additional PM2.5 chemical speciation is conducted at Los Angeles (Main St.), Rubidoux, Anaheim and Fontana as part of the South Coast AQMD monitoring network. These monitors are separate from CSN and samples are analyzed at the South Coast AQMD laboratory. Speciated data is used to develop implementation plans and support atmospheric/health effects related studies.

National Air Toxics Trends Station (NATTS)

The NATTS program was developed to fulfill the need for long-term Hazardous Air Pollutant (HAP) monitoring data of consistent quality nationwide and is considered part of the larger Urban Air Toxics Monitoring Program (UATMP). The program has allowed for the identification of compounds that are prevalent in ambient air and for participating agencies to screen air samples for concentrations of air toxics that could potentially result in adverse human health effects. South Coast AQMD has conducted several air toxics

measurement campaigns in the past, which demonstrated the variety and spatial distribution of air toxics sources across the Basin. A single air toxics measurement site cannot reflect the levels and trends of air toxics throughout the Basin. For this reason, two NATTS sites are used to characterize the Basin's air toxics levels. The first site is a central urban core site in Los Angeles that reflects concentrations and trends due primarily to urban mobile source emissions. A second, more rural, inland site in Rubidoux captures the transport of pollutants from a variety of upwind mobile and industrial sources in the most populated areas of the air basin. NATTS monitoring began in February 2007 and continues at the Los Angeles (Main St.) and Rubidoux air monitoring sites. During April 2016, a system audit was conducted by U.S. EPA, which assessed the South Coast AQMD NATTS program. The audit found no major issues with the operation of the network.

NCore

NCore monitoring rules required that South Coast AQMD make NCore sites operational by January 1, 2011. To meet this goal, South Coast AQMD installed trace level analyzers for CO, NOY and SO2 at the Rubidoux and Los Angeles (Main St.) sites. Continuous PM10 and PM2.5 BAMs are utilized for PM10-PM2.5 measurements at both sites. Both the Los Angeles (Main St.) and Rubidoux sites are NATTS and PAMS monitoring locations.

PAMS

The South Coast AQMD Enhanced Monitoring Plan (EMP) for PAMS measurements, in accordance with 40 CFR § 58 Appendix D paragraph 5(a) was submitted to the RA on July 1, 2018.

State air monitoring agencies were required to begin EMP PAMS measurements at their NCore location(s) by June 1, 2019. The equipment needed to measure PAMS parameters were to be purchased by U.S. EPA using a nationally negotiated contract and delivered to the monitoring agencies. U.S. EPA announced that due to contract delays, the necessary equipment would not be delivered in time to begin making PAMS measurements by June 1, 2019 and has extended the start date to June 1, 2021. South Coast AQMD may not begin making PAMS measurements at the Los Angeles (Main St.) and Rubidoux NCore locations during the 2020 intensive season and will work with U.S. EPA to begin measurements on or before the final revised start date.

The plan submitted to U.S. EPA is attached as Appendix C and includes PAMS site locations, types of instruments and frequency of measurements. South Coast AQMD utilizes PAMS data for trends analysis, trajectory modeling and source emissions inventory reconciliation. The PAMS network monitoring objectives are summarized in Table 8. Figure 7 in Appendix A shows the distribution of the PAMS network.

TABLE 8. PAMS Network

		June 1 to August 31		
Date Established as PAMS	**Site / AQS ID#**	**VOC**	**Carbonyl**	**Comments**
06/01/2009	Los Angeles (Main St)	Auto GC hourly averages	3 x 8-hr. sample every 3rd day	Direct Measure NO2, Barometric Pressure, UV Radiation, Solar Radiation, Precipitation and Upper Air Measurements are conducted year round.
06/09/2009	Rubidoux	Auto GC hourly averages	3 x 8-hr. sample every 3rd day	Direct Measure NO2, Barometric Pressure, UV Radiation, Solar Radiation, Precipitation and Upper Air Measurements are conducted year round.

Enhanced Ozone Monitoring

On October 1, 2015 U.S. EPA substantially revised the PAMS requirements in 40 CFR § 58 Appendix D. As part of the revision, an EMP for O3 was required by Federal Regulation for states and local agencies with moderate and above eight-hour O3 nonattainment. Agencies are required to develop and implement an EMP detailing enhanced O3 and precursor monitoring activities important to understanding localized O3 challenges. The report attached as Appendix B describes monitoring activities within the South Coast AQMD boundaries.

New Technology

The ability of the ambient monitoring network to support air quality characterization has been enhanced with new technology. In some cases, new technologies have been appropriate for incorporation into the ambient air monitoring network to support air quality characterization. This includes availability of data for forecasting, air quality data tracking in the laboratory, translation into meaningful form for Quality Assurance (QA) and Quality Control (QC) purposes. South Coast AQMD has incorporated the following technologies and recommends further study of alternative methods for analysis.

The South Coast AQMD filter based particulate network generates over 10,000 filters annually. PM10 and Pb samplers had remained unchanged for the last three decades. Recent changes have incorporated sample flow rate data for these samplers to be consistent with PM2.5 FRM analysis. Paper chain of custody forms were manually reviewed and archived for QA/QC purposes. A Laboratory Information Management System (LIMS) along with data processing software EQuIS, have been incorporated to reduce paperwork and streamline the documentation process. This software has been in use by local, state and federal agencies and is accepted by the U.S. EPA. The data generated by the PM programs ultimately resides in U.S. EPA's Air Quality System (AQS) database.

The South Coast AQMD air monitoring network data management system was upgraded from the FORTRAN computer to a new data management system (DMS). The upgraded DMS is able to process, export and archive data. It tracks instruments, performance, applies automatic quality

control checks and allows field staff to apply null codes to data. The DMS alerts staff to performance issues by email and facilitates exports of data into AQS. The incorporation of the upgraded DMS will ensure quality of data and increased completeness.

The PM2.5 and PM10 continuous particulate networks has faced challenges finding a reliable replacement for older Met One BAM and TEOM instruments. Several monitors are undergoing testing including Thermo 5014i and Teledyne T640 instruments which both have performance considerations in certain conditions. South Coast is currently testing newer continuous particulate instruments for reliability and longevity.

Alternative methods for elemental carbon (EC) and organic carbon (OC) analysis within the STN network are under consideration. Analysis of EC and OC using thermal laboratory-based analysis do not provide high temporal data, is labor intensive and are based upon operationally defined methods that vary between instruments. In addition, the thermal instruments that the South Coast AQMD laboratory currently utilize are no longer manufactured and parts are no longer available. South Coast AQMD has collocated the STN network with aethalometers and one hour-based Total Carbon (TC) filter measurements using two Magee Scientific TCA-08 instruments. The correlation between the black carbon (BC) from aethalometers and EC from the laboratory method agree very well along with the TC analysis between methods. South Coast AQMD would like to present these results to U.S. EPA in the near future for consideration of adoption into the STN program in lieu of using thermal based laboratory analysis.

U.S. EPA Guidance and Memos

To facilitate the network assessment, the U.S. EPA issued updated guidance for local air quality agencies. During March 1998, the U.S. EPA Office of Air Quality Planning and Standards (OAQPS) issued SLAMS, National Air Monitoring Stations (NAMS) and PAMS Network Review Guidance. Guidance advocated examination of compliance with Network Design Criteria, monitoring objectives and minimum number of sites required. Guidance also recommended examination of 40 CFR § 58 Appendix E Probe and Monitoring Path Siting Criteria. In February 2007, the U.S. EPA issued Ambient Air Monitoring Network Assessment Guidance, which included analytical techniques for assessments of ambient air monitoring networks. In the guidance, the U.S. EPA summarized the context of network assessments, provided an overview of requirements in 40 CFR § 58 and an overview of the assessment process. The U.S. EPA provided suggested steps in the assessment process and technical approaches including identification of monitoring needs, correlation analysis and population change in order to assess high and low value monitors. The final suggested step in the guidance was to suggest changes to the network, obtain input from state, federal and local stakeholders and revise recommendations based on input.

Pollutant Networks Design Assessment Criteria

The individual criteria pollutant monitoring networks are assessed by evaluating each criteria pollutant network or monitoring program and whether they meet network design criteria for ambient air monitoring as defined in 40 CFR § 58 Appendix D. Individual monitors within the network are rated on scale of one – five. A rating of five means the individual monitor fully supports the criteria. A rating of one indicates the monitor does not meet the criteria or has a low value contribution toward achieving the criteria. The following is a description of the criteria used in the evaluations and summarized in Table 13.

Monitoring Objectives

The ambient air monitoring networks must be designed to meet three basic monitoring objectives. These basic objectives are listed below. The appearance of any one objective in the order of this list is not based upon a prioritized scheme. Each objective is important and must be considered individually.

1. Provide air pollution data to the general public in a timely manner. Data can be presented to the public in a number of attractive ways including through air quality maps, newspapers, internet sites and as part of weather forecasts and public advisories.
2. Support compliance with ambient air quality standards and emissions strategy development. Data from FRM, FEM and Approved Regional Method (ARM) monitors for NAAQS pollutants will be used for comparing an area's air pollution levels against the NAAQS. Data from monitors of various types can be used in the development of attainment and maintenance plans. SLAMS and especially NCore station data, will be used to evaluate the regional air quality models used in developing emission strategies and to track trends in air pollution abatement control measures' impact on improving air quality. In monitoring locations near major air pollution sources, source-oriented monitoring data can provide insight into how well industrial sources are controlling their pollutant emissions.
3. Support for air pollution research studies. Air pollution data from the NCore network can be used to supplement data collected by researchers working on health effects assessments and atmospheric processes, or for monitoring methods development work.

Site Type

In order to support the air quality management work indicated in the three basic air monitoring objectives, a network must be designed with a variety of types of monitoring sites. Monitoring sites must be capable of informing managers about many things including the peak air pollution levels, typical levels in populated areas, air pollution transported into and outside of a city or region and air pollution levels near specific sources. To summarize some of these sites, here is a listing of six general site types:

1. Sites located to determine the highest concentrations expected to occur in the area covered by the network.
2. Sites located to measure typical concentrations in areas of high population density.

3. Sites located to determine the impact of significant sources or source categories on air quality.
4. Sites located to determine general background concentration levels.
5. Sites located to determine the extent of regional pollutant transport among populated areas; and in support of secondary standards.
6. Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare-based impacts.

Spatial Scale

To clarify the nature of the link between general monitoring objectives, site types and the physical location of a particular monitor, the concept of spatial scale of representativeness is defined. The goal in locating monitors is to correctly match the spatial scale represented by the sample of monitored air with the spatial scale most appropriate for the monitoring site type, air pollutant to be measured and the monitoring objective.

Spatial Scale of representativeness is the physical dimension of the air parcel surrounding the air monitoring site where pollutant concentrations are reasonably similar. The scales of representativeness of most interest for the monitoring site types described above are as follows:

1. Microscale: Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
2. Middle scale: Defines the concentration typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.
3. Neighborhood scale: Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range. The neighborhood and urban scales listed below have the potential to overlap in applications that concern secondarily formed or homogeneously distributed air pollutants.
4. Urban scale: Defines concentrations within an area of city-like dimensions, on the order of 4 to 50 kilometers. Within a city, the geographic placement of sources may result in there being no single site that can be said to represent air quality on an urban scale.
5. Regional scale: Defines usually a rural area of reasonably homogeneous geography without large sources and extends from tens to hundreds of kilometers.
6. National and global scales: These measurement scales represent concentrations characterizing the nation and the globe as a whole.

Proper siting of a monitor requires specification of the monitoring objective, the types of sites necessary to meet the objective and then the desired spatial scale of representativeness. Table 9 illustrates the relationship between the various site types that can be used to support the three basic monitoring objectives and the scales of representativeness that are generally most appropriate for that type of site.

TABLE 9. Relationship Between Site Type and Sale of Representativeness

Site type	Appropriate siting scales
1. Highest concentration	Micro, middle, neighborhood (*sometimes* urban or regional for secondarily formed pollutants).
2. Population oriented	Neighborhood, urban.
3. Source impact	Micro, middle, neighborhood.
4. General/background & regional transport	Urban, regional.
5. Welfare-related impacts	Urban, regional.

Minimum Monitoring Requirement

As a general requirement, the U.S. EPA specifies the minimum numbers of sites required in a network based on the latest census population data and DV concentrations for specific criteria pollutants. The minimum number of instruments for monitoring networks are summarized below.

O3

Local agencies must operate O3 sites depending population (in terms MSA) and typical peak concentrations (expressed in percentages below, or near the O3 NAAQS). Specific O3 site minimum requirements are included in Table 10. The total number of O3 sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance and understanding O3 related atmospheric processes are more sites than the minimum required in Table 10.

TABLE 10. O3 Minimum Monitoring Requirement

MSA population	Most recent 3-year design value concentrations ≥85% of any O_3 NAAQS	Most recent 3-year design value concentrations <85% of any O_3 NAAQS
>10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000	1	0

PM2.5

Local agencies must operate the minimum number of PM2.5 SLAMS sites depending on typical DV concentrations in comparison to NAAQS. Specific PM2.5 site minimum requirements are included in Table 11. The total number of PM2.5 sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance may be more sites than the minimum required in Table 11.

TABLE 11. PM2.5 Minimum Monitoring Requirement

MSA population	Most recent 3-year design value ≥85% of any $PM_{2.5}$ NAAQS	Most recent 3-year design value <85% of any $PM_{2.5}$ NAAQS
>1,000,000	3	2
500,000-1,000,000	2	1
50,000-<500,000	1	0

PM10

Local agencies must operate the approximate number of permanent stations required in MSAs to characterize national and regional PM10 air quality trends and geographical patterns. The number of PM10 stations in areas where MSA populations exceed 1,000,000 must be in the range from 2 to 10 stations, while in low population urban areas, no more than two stations are required. A range of monitoring stations is specified in Table 12 because sources of pollutants and local control efforts can vary from one part of the country to another and therefore, some flexibility is allowed in selecting the actual number of stations in any one locale.

TABLE 12. PM2.5 Minimum Monitoring Requirement

Population category	High concentration	Medium concentration	Low concentration
>1,000,000	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000-500,000	3-4	1-2	0-1
100,000-250,000	1-2	0-1	0

CO

Local agencies must operate one CO monitor collocated with each required near road NO2 monitor in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near road NO2 monitor, only one CO monitor is required to be collocated with a near road NO2 monitor within that CBSA. The RA may require additional CO monitors above the minimum if the number of monitors is insufficient to meet monitoring objectives.

NO2

Local agencies must operate one microscale near road NO2 monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high Annual Average Daily

Traffic (AADT) counts. An additional near road NO2 monitoring station is required for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts to monitor a second location of expected maximum hourly concentrations.

Within the NO2 network, there must be one monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected highest NO2 concentrations representing the neighborhood or larger spatial scales. The RA may require additional NO2 monitors above the minimum if the number of monitors is insufficient to meet monitoring objectives.

SO2

Local agencies must operate a minimum number of required SO2 monitoring sites based on the PWEI.

The PWEI shall be calculated by for each CBSA for use in the implementation of the SO2 monitoring network. The PWEI shall be calculated by multiplying the population of each CBSA, using the most current census data or estimates and the total amount of SO2 in tpy emitted within the CBSA area, using the most recent county level emissions data available in the NEI for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tpy. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO2 monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO2 monitor is required within that CBSA. The RA may require additional SO2 monitors above the minimum if the number of monitors is insufficient to meet monitoring objectives.

Pb

Local agencies are required to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration in ambient air in excess of the NAAQS, taking into account the logistics and potential for population exposure. At a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tpy and from each airport which emits 1.0 or more tpy based on either the most recent NEI or other scientifically justifiable methods and data taking into account logistics and the potential for population exposure. The U.S. EPA RA may require additional monitoring beyond the minimum monitoring requirements where the likelihood of Pb air quality violations is significant or where the emissions density, topography, or population locations are complex and varied.

NATTS

The NATTS program was developed to fulfill the need for long-term HAP monitoring data of consistent quality. The sites are part of a national network of air toxics monitoring stations. OAQPS, in conjunction with the U.S. EPA Regional Offices and local air

pollution control agencies, developed the network which is comprised of ambient air monitoring stations. Los Angeles (Main St.) and Rubidoux Air Monitoring Stations (AMS) have been designated NATTS monitoring locations.

CSN

As part of the PM2.5 NAAQS review completed in 1997, U.S. EPA established a PM2.5 CSN consisting of STN sites and supplemental speciation sites. The CSN is a component of the National PM2.5 Monitoring Network, whose goal is to establish if the NAAQS are being attained. However, CSN data are not used for attainment or nonattainment decisions but are intended to complement the activities of the larger gravimetric PM2.5 measurement network component

Local agencies shall continue to conduct chemical speciation monitoring and analyses at sites designated to be part of the PM2.5 STN. The selection and modification of these STN sites must be approved by the RA. Chemical speciation is encouraged at additional sites where the chemically resolved data would be useful in developing state implementation plans and supporting atmospheric or health effects related studies. Los Angeles (Main St.) and Rubidoux AMS have been designated CSN monitoring locations.

NCORE

Each state is required to operate at least one NCore site. The NCore locations should be leveraged with other multi-pollutant air monitoring sites including PAMS sites, National NATTS sites and STN sites. Site leveraging includes using the same monitoring platform and equipment to meet the objectives of the variety of programs where possible and advantageous. Los Angeles (Main St.) and Rubidoux AMS have been designated NCORE monitoring locations.

PAMS

Local monitoring agencies are required to collect and report PAMS measurements at each required NCore site located in a CBSA with a population of 1,000,000 or more, based on the latest available census figures. States with many MSAs often also have multiple air sheds with unique characteristics and, often, elevated air pollution. These states are required to identify one to two additional NCore sites in order to account for their unique situations. The NCore locations should be leveraged with other multi-pollutant air monitoring sites including PAMS sites, NATTS sites, CASTNET sites and STN sites. Site leveraging includes using the same monitoring platform and equipment to meet the objectives of the variety of programs where possible and advantageous. Los Angeles (Main St.) and Rubidoux AMS have been designated PAMS monitoring locations.

Air Quality Planning and Forecasting

The criteria pollutant monitoring network provides data to support compliance with ambient air quality standards and emissions strategy development. Additionally, site data is used to calculate the Air Quality Index (AQI) for dissemination to the general public and forecasting. Air monitoring site requirements for these purposes include:

1. Importance to forecasting and forecast validation.
2. Placement for dust and smoke advisories.

3. Determination of background concentrations for point source modeling review.
4. Monitoring placement for gridded real time AQI map.
5. Determination of highest concentrations.
6. Placement of monitoring site to aid in development of exceptional event demonstrations.

TABLE 13. Pollutant Network Design Assessment Criteria Summary

Pollutant Network	Monitoring Objective	Site Type	Spatial Scale	Contributes toward the Minimum Monitor Requirement	Planning and Forecasting
O3	Individual monitors within the network are rated on scale of one – five. A rating of five means the individual monitor fully supports the criteria. A rating of one indicates the monitor does not meet the criteria or has a low value contribution toward achieving the criteria.				
PM2.5					
PM10					
CO					
NO2					
SO2					
Pb					
NATTS					
CSN					
PAMS					
NCORE					

Monitoring Site Assessment Criteria

The monitoring site assessment examines the individual monitoring locations and whether it meets the Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring as defined in 40 CFR § 58 Appendix E and other important considerations to support air quality planning strategies. Individual monitoring sites within the network are rated on scale of one – five. A rating of five means the individual monitoring location fully supports the criteria. A rating of one indicates the monitor does not meet the criteria or has a low value contribution toward achieving the criteria. The following is a description of the criteria used in the evaluations and summarized in Table 16.

Historical Trend

Improving air quality is one of the U.S. EPA's top priorities. Evaluation of local agencies air quality status and long-term trends is critical in assessing air quality strategies. The longevity of an air monitoring site is a key factor in the site assessment.

Security of Future Occupancy

To support continued historical trends, U.S. EPA has recommended local agencies establish air monitoring leases for a minimum of five years. The ability to establish leases for a minimum of five years will ensure site security of future occupancy and is an important factor in assessing an air monitoring site.

Probe Siting Criteria

The probe and monitoring path siting criteria in 40 CFR § 58 Appendix E must be followed to the maximum extent possible. It is recognized that there may be situations where some

deviation from the siting criteria may be necessary however, adherence to these siting criteria is necessary to ensure the uniform collection of compatible and comparable air quality data. The following probe siting criteria are considered in the assessment.

Horizontal and Vertical Placement

Inlet probes must be placed both horizontally and vertically so that at least 80 percent of monitoring path is between 2 and 15m above ground level for neighborhood scale sites and between 2 and 7m above ground level for microscale sites. The probe or at least 90 percent of the monitoring path must be at least 1 meter vertically or horizontally away from any supporting structure, walls, parapets, penthouses, etc. and away from dusty or dirty areas. If the probe or a significant portion of the monitoring path is located near the side of a building or wall, then it should be located on the windward side of the building relative to the prevailing wind direction during the season of highest concentration potential for the pollutant being measured.

Spacing from Minor Sources

Spacing requirements are dependent upon the monitoring objective. If the objective is to measure the impact of a stationary source's primary pollutant emissions, then the probe may be located close to the source and be classified as a micro-scale site. A micro-scale site typically represents an area up to 100m in size. If the objective is to measure pollutants over a larger area such as a neighborhood or city, then the monitoring location should be located away from minor sources of pollutants so as not to impact air quality data collected at the site. Particulate matter sites should not be located in unpaved areas where windblown dust can influence data collected. Special attention should be placed on horizontal and vertical probe placement from furnace or incineration flues to prevent scavenging of O3 by NO and O3 reactive hydrocarbons.

Spacing from Obstructions

Buildings and other obstacles may scavenge SO2, O3, or NO2 and restrict airflow for any pollutant measured. To prevent this influence, the probe must have unrestricted airflow and be located away from obstacles. The distance from an obstacle to the probe should be twice the height that the obstacle protrudes above the inlet. For particulate sampling, a minimum of 2 meters separation is required between monitors, walls, parapets and structures.

Spacing from Trees

Trees can scavenge SO2, O3 and NO2 by adsorption and provide a surface for particle deposition. Trees also act as obstructions and special attention should be made to adhere to correct spacing. To reduce interference, the probe inlet should be at least 10m from the drip line of the tree. For micro-scale sites, no trees should exist between the probe inlet and the source being measured.

Spacing from Roadways

O3 and NO2 in particular are susceptible to interference from roadway emissions. When siting monitors for neighborhood scale and urban scales, it is important to minimize roadway interference. Recommended spacing from roadways for O3, NO2, CO and PM samplers are summarized in Tables 14, 15 and Figure 1.

TABLE 14. Recommended Spacing from Roadways for O3, NO/NOX, NOY

Roadway average daily traffic, vehicles per day	Minimum distance (meters)	Minimum distance (meters)
≤1,000	10	10
10,000	10	20
15,000	20	30
20,000	30	40
40,000	50	60
70,000	100	100
≥110,000	250	250

TABLE 15. Recommended Spacing from Roadways for CO

Roadway average daily traffic, vehicles per day	Minimum distance (meters)
≤10,000	10
15,000	25
20,000	45
30,000	80
40,000	115
50,000	135
≥60,000	150

Figure 1. Recommended Spacing from Roadways for PM

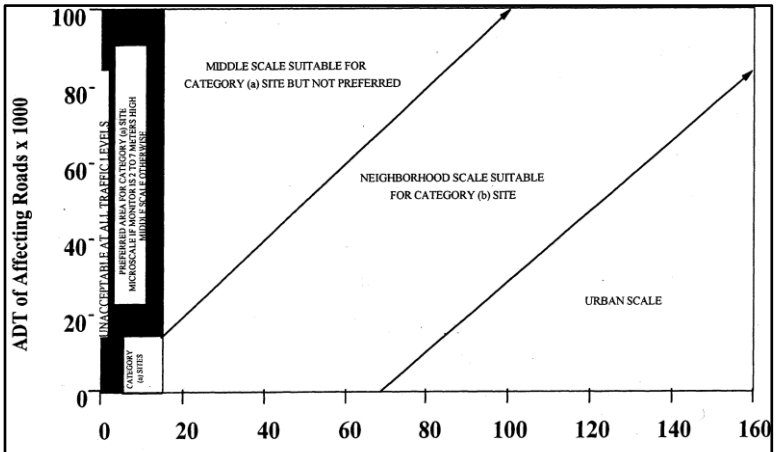

Figure E-1. Distance of PM samplers to nearest traffic lane (meters)

Non-NAAQS Data Uses

In addition to NAAQS compliance status evaluation and progress demonstrations, data from South Coast AQMD air monitoring stations is used for real-time public notification of air pollution events, air quality forecasting and modeling for strategic plan development, including the preparation of the Air Quality Management Plan (AQMP). Due to the large population in Southern California and the complexity of the geography and meteorology, a relatively large number of air monitoring stations are needed to adequately describe air quality and meteorology in South Coast AQMD's jurisdiction. The following are Non-NAAQS data uses considered in the assessment.

Public Notification

Data from the criteria pollutants that are measured continuously are available to the public in near real time, through the South Coast AQMD, U.S. EPA AirNow and California Air Resourced Board websites. Additional real time information is available through the South Coast AQMD application for Android and iPhone. Warnings of current air pollution events that occur are transmitted to the public via the South Coast AQMD website, fax, email, recorded phone messages, press releases and Android and iPhone application. The U.S. EPA EnviroFlash alert system is used to alert subscribers of measured unhealthy air quality by email, RSS feeds or Twitter alerts. At this time, air quality notifications are primarily driven by PM2.5 and summertime O3 measurements, although PM10 episodes can also occur occasionally during exceptional events (e.g., natural windblown dust events, wildfires and fireworks displays). A robust real-time network is needed to support the accurate mapping of data and transmittal of episodic health information for the large population and geographic diversity of the Basin and the Coachella Valley.

Air Quality Forecasting

South Coast AQMD provides daily air quality forecasts to the public, predicting day-in-advance concentrations and AQI values of O3, PM2.5, PM10, CO and NO2 for 38 source-receptor areas throughout AQMD's jurisdiction. The forecasts are disseminated to the public through the South Coast AQMD and U.S. EPA AirNow websites, the South Coast AQMD IVR phone system and through the news media, as well as by subscription via fax, email, RSS feeds, Twitter (using EnviroFlash) and the South Coast AQMD application for Android and iPhone. South Coast AQMD also provides high wind/windblown dust forecasts for the Coachella Valley for South Coast AQMD Rule 403.1, agricultural and wildland prescribed fire burn forecasts and residential wood burning forecasts. South Coast AQMD air quality forecast tools utilize forecaster experience, empirical/statistical models and prognostic grid models. Current and historical air quality and meteorological data are critical to the forecasting process. The South Coast AQMD measurements are used to develop the empirical models and to provide current inputs during daily forecast preparation. The monitoring data is also used to evaluate and refine the prognostic grid models.

Air Quality Planning

Air quality measurements are important for the air quality planning process, including strategic plan development to demonstrate attainment of the NAAQS. Current levels and historic air quality trends are documented as a component of the AQMP and reasonable

further progress analyses. Meteorological and air quality models are used to simulate representative past episodes or longer periods, as compared to measured air quality data throughout the region. A relatively dense monitoring network of pollutants and their precursors is needed throughout the modeling domain to adequately evaluate the ability of the models to simulate air quality.

Health Studies

Support for air pollution research studies is prime objective in assessing the value of an air monitoring location. Air pollution data collected is used to supplement data collected by researchers working on health effects assessments. Sites used as platforms for scientific studies, involved with health or welfare impacts, measurement methods development, or used as collaborative efforts with researchers are considered due to their important role in supporting the air quality management program. This includes Environmental Justice (EJ) and AB617 initiatives.

South Coast AQMD Board adopted EJ initiatives in October 1997 and has been a leader in identifying and addressing community EJ concerns, particularly in low income, ethnic minority communities who may be disproportionately impacted by localized emissions and mobile source pollutants. During July 2017 the Governor of the State of California signed Assembly Bill 617 (AB617). The legislation requires local air districts to develop and implement additional monitoring in an effort to reduce air pollution exposure in disadvantaged communities. In support of the program, toxics monitoring and health effects studies take place at air monitoring locations throughout the network. Support of these studies is taken into consideration while determining the value of an air monitoring location.

Synergies

Consideration of potential synergies between monitoring programs and external objectives are taken into account while establishing the value of the monitoring location.

1. Assessment of synergies between SLAMS and U.S. EPA Monitoring programs such as NATTS, CSN, PAMS and NCORE as required. U.S. EPA recommends NCore locations should be leveraged with other multi-pollutant air monitoring sites including PAMS sites, NATTS sites and CSN sites. Site leveraging includes using the same monitoring platform and equipment to meet the objectives of the variety of programs where possible and advantageous.
2. Assessment of synergies between SLAMS, U.S. EPA monitoring programs, Department of Homeland Security (DHS) programs, South Coast AQMD health studies, AB 617, Rule 1180 and university or non-profit research studies that take advantage of historical data trends from multi-pollutant monitoring programs.
3. Assessment of synergies that are external to the air monitoring network are taken into consideration while determining the value of a site include the use of facilities by air monitoring and compliance staff as office space and for data communications.

TABLE 16. Monitoring site Assessment Criteria Summary

Monitoring Sites	Historic Trend	Security of future Occupancy	Probe Siting Criteria	Non-NAAQS Data Uses	Synergies
Each of the 42 monitoring sites shown in Table 2	Individual monitoring sites within the network are rated on scale of one – five. A rating of five means the monitoring site fully supports the assessment criteria. A rating of one indicates the monitoring site does not meet the criteria or has a low value contribution toward achieving the criteria.				

Pollutant Networks Design Assessment

Over the last five years, population, sources of pollution, ambient levels of pollution and the surveillance air monitoring network have been subject to change and may no longer be representative of the original monitoring strategy and network design. The effects of these factors on data and monitoring needs are assessed by pollutant and program monitoring networks.

Assessing the pollutant networks began with creating a scoring matrix incorporating whether individual monitors within the network were consistent with 40 CFR § 58 Appendix D network design criteria for ambient air monitoring. The scoring matrix was used as a tool to determine value of the monitor within the pollutant network and the monitor's contribution toward achieving the criteria. Individual monitors within the network are rated on scale of one – five. A rating of five means the individual monitor fully supports the criteria. A rating of one indicates the monitor does not meet the criteria or has a low value contribution toward achieving the criteria. The categories are averaged to determine an overall value for the monitor. The scoring matrix is shown in Table 17.

TABLE 17. Pollutant Networks Design Assessment Criteria Scoring Summary

Score	5	3	1
Monitoring Objective	Monitor has high value contribution to meeting objectives.	Monitor contributes toward monitoring objectives.	Monitor does not contribute toward monitoring objectives and is redundant.
Site Type	Monitor is classified as highest concentration, or a critical population oriented, source impact, background or welfare related site.	Monitor is an important population oriented, background or welfare related site.	Monitor is a redundant site type.
Spatial Scale	Monitor is appropriate spatial scale for a critical site type.	Monitor is appropriate spatial scale for an important site type.	Monitor is an inappropriate spatial scale for the site type.
Minimum Monitoring Requirement	Monitor significantly contributes toward the minimum monitoring requirement by being classified as a critical site type.	Monitor contributes toward the minimum monitoring requirement but is not a critical site type.	The pollutant monitoring network exceeds minimum requirement and monitor does not contribute toward the minimum monitoring requirement or is low value.
Air Quality Planning and Forecasting	Monitor is critical for air quality planning and forecast needs.	Monitor is important for air quality planning and forecast needs.	Monitor does not contribute to air quality planning and forecast needs and is redundant.

Monitoring objectives, site type, spatial scale and minimum monitoring requirement for all pollutant networks are shown in Tables 18 through 33. Pollutant network assessments are shown in Tables 34 through 46.

TABLE 18. FRM Criteria Pollutant Monitoring Objectives

MONITORING OBJECTIVE

BK – Background
HC – High Concentration
TP – Pollutant Transport
EX – Population Exposure
SO – Source Impact
RC – Representative Concentration
RM – Real-Time Reporting/Modeling
TR – Trend Analysis
CP – Site Comparisons
CO – Collocated

	Location	CO	NO2	SO2	O3	Manual PM10	Manual PM2.5	Pb
1	Anaheim	TR	TR/RC		TR	HC/TR	TR/EX	
2	Anaheim Route 5 Near Road	SO/HC	SO/HC					
3	ATSF (Exide)							SO
4	Azusa	TR	TR/RC		TR	TR	TR/EX	
5	Banning Airport		TP/RC		TP	TP		
6	Big Bear						EX/SO/TP	
7	Central San Bernardino Mountains				HC	TP/RC		
8	Closet World (Quemetco)							SO
9	Compton	TR/HC	TR/RC		TR/RC		EX/HC/RC	EX
10	Fontana	RC	TP/RC	TR	RC	HC/RC	EX/TP	
11	Glendora	RC	TR/RC		HC			
12	Indio				TP	HC/CO	TP/EX	
13	La Habra	RC	TR/RC		RC			
14	Lake Elsinore	TP/RC	TP/RC		TP/RC			
15	LAX Hastings	BK	BK	BK	BK	BK		BK
16	Long Beach (Hudson) [1]	TR	TR/RC	TR/HC	TR	TR/RC		
17	Long Beach (North)						EX	
18	Long Beach Route 710 Near Road		SO/HC				SO/HC	
19	Long Beach (South)					RC	EX	EX
20	Los Angeles (Main St.)	SO/RC	SO/HC	TR	TR/RC	TR/RC/CO	EX/HC/CO	EX/CO
21	Mecca (Saul Martinez)					HC/EX/RC		
22	Mira Loma (Van Buren)	TR/RC	TR/RC		TR/HC	HC	EX/HC/CO	
23	Mission Viejo	RC			TR/RC	TR/RC	EX/RC	
24	Norco					TR/RC		
25	North Hollywood		TR/RC		TR			
26	Ontario Etiwanda Near Road	SO/HC	SO/HC					
27	Ontario Route 60 Near Road		SO/HC				SO/HC	
28	Palm Springs	TP/RC	TP/RC		TP	TP	EX/TP	
29	Pasadena	TR/RC	TR/HC		TR/RC		EX/RC	
30	Perris				TP	TR		
31	Pico Rivera #2	RC	HC		EX		EX/RC	EX
32	Pomona	RC	RC		EX			
33	Redlands				TP/RC	TP/RC		
34	Rehrig (Exide)							SO/CO
35	Reseda	RC	TR/RC		EX		EX/RC	
36	Rubidoux	TR/RC	TR/RC	TR	TR/HC	HC/TR/CO	HC/EX/TR/CO	EX
37	San Bernardino	TR/RC	TP/RC		TR/HC	TR	EX/TR	EX
38	Santa Clarita	RC	TP/RC		TP/RC	RC	EX/RC	
39	Signal Hill		TR/RC		TR			
40	Temecula				TR/HC			
41	Uddeholm (Trojan Battery)							MI/IM
42	Upland	RC	TR/RC		TR/RC			
43	West Los Angeles	RC	TR/HC		RC			

[1] Site discontinued December 31, 2019

TABLE 19. FRM Criteria Pollutant Spatial Scales and Site Type

SPATIAL SCALE
MI – Microscale
MS – Middle Scale
NS – Neighborhood Scale
US – Urban Scale

SITE TYPE
HC – Highest Concentration
PE – Population Exposure
IM – Source-Oriented (Impact)
BK – General Background

	Location	CO	NO2	SO2	O3	Manual PM10	Manual PM2.5	Pb
1	Anaheim	NS/PE	US/PE		NS/PE	NS/HC	NS/PE	
2	Anaheim Route 5 Near Road	MI/HC	MI/HC					
3	ATSF (Exide)							MI/IM
4	Azusa	NS/PE	US/PE		US/HC	NS/PE	NS/PE	
5	Banning Airport		NS/PE		NS/PE	NS/PE		
6	Big Bear						NS/PE	
7	Central San Bernardino Mountains				NS/HC	NS/PE		
8	Closet World (Quemetco)							MI/IM
9	Compton	MS/HC	MS/PE		NS/PE		NS/HC	NS/PE
10	Fontana	NS/PE	US/PE	NS/PE	US/PE	NS/HC/PE	NS/PE	
11	Glendora	NS/PE	NS/PE		NS/HC			
12	Indio				NS/PE	NS/HC	NS/PE	
13	La Habra	NS/PE	US/PE		NS/PE			
14	Lake Elsinore	NS/PE	NS/PE		NS/PE			
15	LAX Hastings	MS/PE/BK	MS/PE/BK	NS/PE/BK	NS/PE/BK	NS/PE/BK		NS/PE/BK
16	Long Beach (Hudson) [1]	NS/HC	NS/PE	NS/HC	NS/PE	NS/PE		
17	Long Beach (North)						NS/PE	
18	Long Beach Route 710 Near Road		MI/HC				MI/HC	
19	Long Beach (South)					NS/PE	NS/PE	NS/PE
20	Los Angeles (Main St.)	NS/PE	NS/HC	NS/PE	NS/PE	NS/PE	NS/PE	NS/PE
21	Mecca (Saul Martinez)					NS/HC/PE		
22	Mira Loma (Van Buren)	NS/PE	NS/PE		NS/PE	NS/HC	NS/HC	
23	Mission Viejo	NS/PE			NS/PE	NS/PE	NS/PE	
24	Norco					NS/PE		
25	North Hollywood		NS/PE		US/HC			
26	Ontario Etiwanda Near Road	MI/HC	MI/HC					
27	Ontario Route 60 Near Road		MI/HC				MI/HC	
28	Palm Springs	NS/PE	NS/PE		NS/PE	NS/PE	NS/PE	
29	Pasadena	MS/PE	MS/HC		NS/PE		NS/PE	
30	Perris				NS/PE	NS/PE		
31	Pico Rivera #2	NS/PE	NS/HC		NS/PE		NS/PE	NS/PE
32	Pomona	MI/PE	MS/PE		MS/PE			
33	Redlands				NS/PE/HC	NS/PE		
34	Rehrig (Exide)							MI/IM
35	Reseda	NS/PE	US/PE		US/PE		NS/PE	
36	Rubidoux	NS/PE	US/PE	NS/PE	USPE	NS/HC	NS/HC	NS/PE
37	San Bernardino	MS/PE	US/PE		NS/HC	NS/PE	NS/PE	NS/PE
38	Santa Clarita	NS/PE	NS/PE		US/HC	NS/PE		
39	Signal Hill		MS/PE		NS/PE			
40	Temecula				NS/HC			
41	Uddeholm (Trojan Battery)							MI/IM
42	Upland	NS/PE	NS/PE		NS/PE			
43	West Los Angeles	NS/PE	MS/HC		NS/PE			

[1] Site discontinued December 31, 2019

TABLE 20. Continuous PM10/PM2.5 Monitoring Objective, Site Type and Spatial Scales

SITE TYPE
HC – High Concentration
PE – Population Exposure
BK - Background

SPATIAL SCALE
MI – Microscale
NS – Neighborhood Scale

INSTRUMENT TYPE
TEOM
BAM (NON-FEM)
BAM (FEM)

MONITORING PURPOSE
CO – Collocated
SO – Source Impact
TP – Pollutant Transport
RM – Real-Time Reporting/Modeling
SPM Special Purpose Monitoring
TR – Trend Analysis

	Continuous PM10				Continuous PM2.5				PM10 – 2.5
Location	**Type**	**Purpose**	**Site Type**	**Scale**	**Type**	**Purpose**	**Site Type**	**Scale**	**Operational**
Anaheim	BAM/FEM	TR/RM	HC	NS	BAM/FEM	TR/RM	PE	NS	
Banning Airport					BAM/NON-FEM	TP/RM	PE	NS	
Central San Bernardino Mountains					BAM/NON-FEM	TP/RM	PE	NS	
Glendora	BAM/FEM	TR/RM	PE	NS	BAM/NON-FEM	TR/RM	PE	NS	
Indio	TEOM/FEM	RM	HC	NS					
Lake Elsinore	TEOM/FEM	TP/RM	PE	NS	BAM/NON-FEM	TP/RM	PE	NS	
Long Beach Route 710 Near Road					BAM/FEM	SO/RM	HC	MI	
Long Beach (South)					BAM/FEM	RM	PE	NS	
Los Angeles (Main St.)	BAM/FEM	TR/RM	PE	NS	BAM/FEM	TR/RM	HC	NS	Yes
Mecca (Saul Martinez)	TEOM/FEM	RM	HC	NS					
Mira Loma (Van Buren)	BAM/FEM	TR/RM	HC	NS	BAM/FEM	TR/RM	HC	NS	
North Hollywood					BAM/NON-FEM[1]	TR/RM	HC	NS	
Ontario Route 60 Near Road					BAM/FEM	SO/RM	HC	MI	
Palm Springs	TEOM/FEM	TR/RM	PE	NS					
Reseda					BAM/NON-FEM	RM	PE	NS	
Rubidoux	BAM/FEM	TR/RM	HC	NS	BAM/FEM	RM/TR/CO	HC	NS	Yes
San Bernardino	TEOM/FEM	TR/RM	PE	NS					
Santa Clarita					BAM/NON-FEM	TP/RM	PE	NS	
Signal Hill									
Temecula					BAM/NON-FEM	TP/RM	PE	NS	
Upland	BAM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	

[1] Site began operation January 1, 2020 as SPM.

Table 21. Minimum Monitoring Requirements for O3

(Note: Refer to section 4.1 and Table D-2 of Appendix D of 40 CFR § 58.)

MSA	Counties	Population & Census Year	8-hr DV (ppb) & Years[1]	DV Site (name, AQS ID)	Monitors Required	Monitors Active	Monitors Needed
31080	Los Angeles Orange	13,214,799 2019	103 2017-2019	Glendora 060370016	4	14	0
40140	San Bernardino Riverside	4,650,631 2019	108 2017-2019	Redlands 060714003	3	15	0

Table 22. Minimum Monitoring Requirements for PM2.5 SLAMS (FRM)

(Note: Refer to sections 4.71, 4.72 and Table D-5 of Appendix D of 40 CFR § 58.)

MSA	Counties	Population & Census Year	Annual DV [ug/m3] & Years[1]	Annual DV Site (name, AQS ID)	Daily DV [ug/m3] & Years	Daily DV Site (name, AQS ID)	Required SLAMS Monitors	Active SLAMS Monitors	Additional SLAMS needed
31080	Los Angeles Orange	13,214,799 2019	12.5 2017-2019	Compton 060371302	38.0 2017-2019	Compton 060371302	3	10	0
40140	San Bernardino Riverside	4,650,631 2019	14.0 2017-2019	Ontario Route 60 Near Road 060710027	37.0 2017-2019	Mira Loma (Van Buren) 060658005	3	9	0

Table 23. Minimum Monitoring Requirements for Continuous PM2.5 Monitors (FEM and Non-FEM)

(FEM/ARM and non-FEM see 40 CFR § 58 Appendix D Section 4.72.)

MSA	Counties	Population & Census Year	Annual DV [ug/m3] & Years[1]	Annual DV Site (name, AQS ID)	Daily DV [ug/m3] & Years	Daily DV Site (name, AQS ID)	Required Continuous Monitors	Active Continuous Monitors	Additional Continuous needed
31080	Los Angeles Orange	13,214,799 2019	12.5[2] 2017-2019	Compton 060371302	38.0[2] 2017-2019	Compton 060371302	2	5-FEM 3-Non FEM	0
40140	San Bernardino Riverside	4,650,631 2019	14.0[2] 2017-2019	Ontario Route 60 Near Road 060710027	37.0[2] 2017-2019	Mira Loma (Van Buren) 060658005	2	3-FEM 5-Non FEM	0

Table 24. Minimum Monitoring Requirements for PM10

(Note: Refer to section 4.6 and Table D-4 of Appendix D of 40 CFR § 58.)

MSA	Counties	Population & Census Year	2019 Max Concentration [ug/m3]	Max Concentration Site (name, AQS ID)	Required Monitors	Active Monitors	Additional Monitors Needed
31080	Los Angeles Orange	13,214,799 2019	155[1, 2]	Long Beach (Hudson) 060374006	4-8 Med. Conc.	8	0
40140	San Bernardino Riverside	4,650,631 2019	282[1]	Mira Loma (Van Buren) 060658005	6-10 High Conc.	11	0

Table 25. Minimum Monitoring Requirements for CO

(Note: Refer to section 4.2 of Appendix D of 40 CFR § 58.)

CBSA	Population & Census Year	Required Near Road Monitors[1]	Active Near Road Monitors[2]	Required Area Wide Monitors	Active Area Wide Monitors
31080	13,214,799 2019	1	1	0	14
40140	4,650,631 2019	1	1	0	7

Table 26. Minimum Monitoring Requirements for NO2

(Note: Refer to section 4.3 of Appendix D of 40 CFR § 58.)

CBSA	Population & Census Year	Max AADT Counts (2018)[1]	Required Near Road Monitors[2]	Active Near Road Monitors	Additional Near Road Monitors Needed	Required Area Wide Monitors	Active Area Wide Monitors	Additional Area wide Monitors Needed
31080	13,214,799 2019	377,600 2018	2	2	0	2	15	0
40140	4,650,631 2019	278,000 2018	2	2	0	2	8	0

Table 27. Minimum Monitoring Requirements for SO2

(Note: Refer to section 4.4 of Appendix D of 40 CFR § 58.)

CBSA	Counties	Total SO2[1] [tons/year]	Population Weighted Emissions Index[2] [million persons-tons per year]	Active Near Road Monitors	Required Area Wide Monitors	Active Area Wide Monitors	Additional Area wide Monitors Needed
31080	Los Angeles Orange	3676.5 2017	48,584	0	1	2	0
40140	San Bernardino Riverside	1382.0 2017	6,427	0	1	2	0

Table 28. Minimum Monitoring Requirements for Pb, Non-Source, Non-NCore Monitoring

(Note: Refer to section 4.5 of Appendix D of 40 CFR § 58.)

CBSA	Population & Census Year	Annual DV [ug/m3] & Years[1]	Required Area Wide Monitors	Active Area Wide Monitors	Additional Monitors Needed
31080	13,214,799 2019	0.01, 2017-2019	0	4	0
40140	4,650,631 2019	0.01 2017-2019	0	1	0

Table 29. Source-Oriented Pb Monitoring

(Note: Refer to section 4.5 of Appendix D of 40 CFR § 58.)

Source Name	Address	Pb Emissions (lbs. per year)	Emission Inventory Source[2] & Data Year	Max 3-Month DV[1] [ug/m3]	DV Date (third month, year)
Exide Technologies[3]	4010 E. 26th Street Vernon, CA 90058	9.5	AER 2019	0.02	3; 2019
Trojan Battery	9440 Ann Street Santa Fe Springs, CA 90670	10.1	AER 2019	0.09	9; 2017
Quemetco Inc.	720 S 7th Avenue City of Industry, CA 91746	6.4	AER 2019	0.01	1; 2019
Exide Technologies[3, 4]	Railroad Yard – Washington Blvd.	9.5	AER 2019	0.01	1; 2019

Table 30. Minimum Monitoring Requirements for NATTS

(Note: Refer to section 5.0 of Appendix D of 40 CFR § 58.)

Area	Type	Required NATTS Sites	Active NATTS Sites	NATTS Sites Needed
South Coast AQMD Monitoring Area	NCore Collocated	2	2	0

Table 31. Minimum Monitoring Requirements for CSN

(Note: Refer to section 5.0 of Appendix D of 40 CFR § 58.)

Area	Type	Selected CSN Sites	Active CSN Sites	CSN Sites Needed
South Coast AQMD Monitoring Area	STN	2	2	0

Table 32. Minimum Monitoring Requirements for PAMS

(Note: Refer to section 5.0 of Appendix D of 40 CFR § 58.)

Area	Type	Required PAMS Sites	Active PAMS Sites	PAMS Sites Needed
South Coast AQMD Monitoring Area	NCore Collocated	2	2	0

Table 33. Minimum Monitoring Requirements for NCore

(Note: Refer to section 4.5 of Appendix D of 40 CFR § 58.)

NCore Site (name, AQS ID)	CBSA	Population & Census Year	Required Measurements	Active Measurements	Additional Monitors Needed
Los Angeles (Main St.) 060371103	30180	13,214,799 2019	15	15	0
Rubidoux 060658001	40140	4,650,631 2019	15	15	0

Table 34. Ozone Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Central San Bernardino Mountains	5	5	5	5	5	5.0
2	Glendora	5	5	5	5	5	5.0
3	Mission Viejo	5	5	5	5	5	5.0
4	Redlands	5	5	5	5	5	5.0
5	San Bernardino	5	5	5	5	5	5.0
6	Santa Clarita	5	5	5	5	5	5.0
7	Indio	5	5	5	5	5	5.0
8	Palm Springs	5	5	5	5	5	5.0
9	Los Angeles (Main St.)	5	5	5	5	5	5.0
10	Banning Airport	5	5	5	5	4	4.8
11	Anaheim	5	5	5	5	3	4.6
12	Fontana	5	5	5	4	4	4.6
13	Temecula	5	5	5	5	3	4.6
14	Azusa	5	5	5	5	2	4.4
15	Rubidoux	4	5	5	4	4	4.4
16	Upland	5	5	5	4	3	4.4
17	LAX Hastings	5	3	3	5	5	4.2
18	Mira Loma (Van Buren)	4	5	5	4	3	4.2
19	Reseda	4	5	5	4	3	4.2
20	North Hollywood	4	4	4	5	3	4.0
21	Perris	5	4	4	4	3	4.0
22	West Los Angeles	4	5	5	4	2	4.0
23	Lake Elsinore	4	4	4	4	3	3.8
24	Pico Rivera #2	4	4	4	4	3	3.8
25	Signal Hill	4	4	4	4	3	3.8
26	Compton	4	4	4	4	2	3.6
27	La Habra	4	4	4	4	2	3.6
28	Pasadena	3	4	4	4	3	3.6
29	Pomona	3	3	3	4	3	3.2

Table 35. PM2.5 FRM Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Compton	5	5	5	5	5	5.0
2	Indio	5	5	5	5	5	5.0
3	Long Beach Route 710 Near Road	5	5	5	5	5	5.0
4	Los Angeles (Main St.)	5	5	5	5	5	5.0
5	Mira Loma (Van Buren)	5	5	5	5	5	5.0
6	Ontario Route 60 Near Road	5	5	5	5	5	5.0
7	Rubidoux	5	5	5	5	4	4.8
8	Big Bear	4	5	5	4	4	4.4
9	Palm Springs	4	5	4	4	4	4.2
10	Anaheim	3	4	4	4	3	3.6
11	Fontana	3	4	4	3	3	3.4
12	Pico Rivera #2	3	4	4	3	3	3.4
13	San Bernardino	3	4	4	3	3	3.4
14	Azusa	3	3	4	3	2	3.0
15	Long Beach (North)	3	3	4	3	2	3.0
16	Long Beach (South)	3	3	4	3	2	3.0
17	Mission Viejo	3	3	4	4	1	3.0
18	Pasadena	3	3	4	3	2	3.0
19	Reseda	3	3	4	3	2	3.0

Table 36. PM2.5 FEM Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Long Beach Route 710 Near Road	5	5	5	5	5	5.0
2	Los Angeles (Main St.)	5	5	5	5	5	5.0
3	Mira Loma (Van Buren)	5	5	5	5	5	5.0
4	Ontario Route 60 Near Road	5	5	5	5	5	5.0
5	Rubidoux	5	5	5	5	5	5.0
6	Anaheim	4	4	4	4	5	4.2
7	North Hollywood	5	4	4	3	5	4.2
8	Banning Airport	4	4	4	3	5	4.0
9	Central San Bernardino Mountains	4	4	4	3	5	4.0
10	Santa Clarita	4	4	4	3	5	4.0
11	Temecula	4	4	4	3	5	4.0
12	Glendora	3	4	4	3	5	3.8
13	Lake Elsinore	4	3	4	3	5	3.8
14	Upland	3	4	4	3	5	3.8
15	Long Beach (South)	3	3	4	3	5	3.6
16	Reseda	3	3	4	3	5	3.6

Table 37. PM10 FRM Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Banning Airport	5	5	5	5	5	5.0
2	Indio	5	5	5	5	5	5.0
3	Long Beach (South)	5	5	5	5	5	5.0
4	Los Angeles (Main St.)	5	5	5	5	5	5.0
5	Rubidoux	5	5	5	5	5	5.0
6	San Bernardino	5	5	5	5	5	5.0
7	Palm Springs	5	5	4	4	5	4.6
8	Anaheim	5	4	3	4	4	4.0
9	Mira Loma (Van Buren)	5	4	4	3	4	4.0
10	Fontana	4	4	4	3	4	3.8
11	Santa Clarita	4	3	4	4	3	3.6
12	Azusa	4	3	4	3	3	3.4
13	Central San Bernardino Mountains	4	3	4	3	3	3.4
14	Mecca (Saul Martinez)	5	3	3	3	3	3.4
15	Perris	4	3	4	3	3	3.4
16	Redlands	4	3	4	3	3	3.4
17	Mission Viejo	3	2	4	3	2	2.8
18	LAX Hastings	3	2	3	2	2	2.4
19	Norco	3	2	4	1	2	2.4

Table 38. PM10 FEM Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Anaheim	5	5	4	5	4	4.6
2	Indio	5	5	4	3	5	4.4
3	Mecca (Saul Martinez)	5	5	4	3	5	4.4
4	Mira Loma (Van Buren)	5	5	4	3	5	4.4
5	Rubidoux	5	5	4	3	5	4.4
6	Los Angeles (Main St.)	5	3	4	3	5	4.0
7	Palm Springs	5	3	4	3	5	4.0
8	San Bernardino	5	3	4	3	5	4.0
9	Glendora	4	3	4	3	4	3.6
10	Lake Elsinore	4	3	4	3	4	3.6
11	Upland	4	3	4	3	4	3.6

Table 39. CO Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Anaheim Route 5 Near Road	5	5	5	5	5	5.0
2	Ontario Etiwanda Near Road	5	5	5	5	5	5.0
3	Compton	5	5	5	3	5	4.6
4	Los Angeles (Main St.)	5	4	4	3	5	4.2
5	Mission Viejo	5	5	3	3	5	4.2
6	Palm Springs	5	5	3	3	5	4.2
7	LAX Hastings	4	4	4	3	5	4.0
8	San Bernardino	4	4	4	3	5	4.0
9	Santa Clarita	4	4	4	3	5	4.0
10	Anaheim	4	4	4	2	4	3.6
11	La Habra	3	3	4	1	3	2.8
12	Mira Loma (Van Buren)	3	3	4	1	3	2.8
13	Reseda	3	3	4	1	3	2.8
14	Rubidoux	3	3	4	1	3	2.8
15	West Los Angeles	3	3	4	1	3	2.8
16	Azusa	3	3	4	1	2	2.6
17	Fontana	3	3	4	1	2	2.6
18	Glendora	3	3	4	1	2	2.6
19	Pasadena	3	3	4	1	2	2.6
20	Pico Rivera #2	3	3	4	1	2	2.6
21	Pomona	3	3	4	1	2	2.6
22	Upland	3	3	4	1	2	2.6
23	Lake Elsinore	3	3	3	1	2	2.4

Table 40. NO2 Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Anaheim Route 5 Near Road	5	5	5	5	5	5.0
2	Long Beach Route 710 Near Road	5	5	5	5	5	5.0
3	Los Angeles (Main St.)	5	5	5	5	5	5.0
4	Ontario Etiwanda Near Road	5	5	5	5	5	5.0
5	Ontario Route 60 Near Road	5	5	5	5	5	5.0
6	Rubidoux	5	5	5	5	3	4.6
7	San Bernardino	5	5	5	5	3	4.6
8	LAX Hastings	5	5	4	3	5	4.4
9	Mira Loma (Van Buren)	5	5	4	3	5	4.4
10	Palm Springs	5	5	4	3	5	4.4
11	Signal Hill	5	4	4	3	5	4.2
12	Anaheim	4	4	4	3	4	3.8
13	Compton	4	3	5	4	3	3.8
14	Fontana	4	4	4	3	4	3.8
15	North Hollywood	4	4	4	3	4	3.8
16	Banning Airport	4	3	4	3	4	3.6
17	Azusa	4	3	4	3	3	3.4
18	Glendora	3	3	4	3	3	3.2
19	Pasadena	3	3	4	3	3	3.2
20	Pico Rivera #2	3	3	4	3	3	3.2
21	Pomona	3	3	4	3	3	3.2
22	Reseda	3	3	4	3	3	3.2
23	Santa Clarita	3	3	4	3	3	3.2
24	Upland	3	3	4	3	3	3.2
25	West Los Angeles	3	3	4	3	3	3.2
26	La Habra	3	2	4	3	2	2.8
27	Lake Elsinore	3	2	4	3	2	2.8

Table 41. SO2 Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Los Angeles (Main St.)	5	5	4	5	5	4.8
2	LAX Hastings	5	5	4	5	4	4.6
3	Rubidoux	5	5	4	5	4	4.6
4	Fontana	5	4	4	5	2	4.0

Table 42. Pb Network Design Assessment

Overall Rank	Monitoring location	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
1	Los Angeles (Main St.)	5	4	4	1	3	3.4
2	ATSF (Exide)	5	4	4	1	2	3.2
3	Closet World (Quemetco)	5	4	4	1	2	3.2
4	Rehrig (Exide)	5	4	4	1	2	3.2
5	Uddeholm (Trojan Battery)	5	4	4	1	2	3.2
6	Rubidoux	4	4	4	1	3	3.2
7	Compton	4	4	4	1	3	3.2
8	Long Beach (South)	4	4	4	1	2	3.0
9	LAX Hastings	4	4	4	1	1	2.8
10	Pico Rivera #2	4	4	4	1	1	2.8
11	San Bernardino	4	4	4	1	1	2.8

Table 43. NATTS Network Design Assessment

Monitoring location	Pollutant	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
Los Angeles (Main St.)	Hexavalent Chromium	5	5	5	5	4	4.8
Los Angeles (Main St.)	PM10 Metals	5	5	5	5	4	4.8
Los Angeles (Main St.)	VOCs	5	5	5	5	4	4.8
Los Angeles (Main St.)	PAHs	5	5	5	5	4	4.8
Rubidoux	Hexavalent Chromium	5	5	5	5	4	4.8
Rubidoux	PM10 Metals	5	5	5	5	4	4.8
Rubidoux	VOCs	5	5	5	5	4	4.8
Rubidoux	PAHs	5	5	5	5	4	4.8

Table 44. CSN Network Design Assessment

Monitoring location	Pollutant	Agency	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
Los Angeles (Main St.)	Speciated PM2.5	U.S. EPA	5	5	5	5	4	4.8
Rubidoux	Speciated PM2.5	U.S. EPA	5	5	5	5	4	4.8
Los Angeles (Main St.)	Speciated PM2.5	South Coast AQMD	5	5	5	1	3	3.8
Rubidoux	Speciated PM2.5	South Coast AQMD	5	5	5	1	3	3.8

Table 45. PAMS Network Assessment

Monitoring location	Pollutant(s)	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
Los Angeles (Main St.)	O3	5	5	5	5	4	4.8
Los Angeles (Main St.)	NO/NOX	5	5	5	5	4	4.8
Los Angeles (Main St.)	Direct NO2	5	5	5	5	4	4.8
Los Angeles (Main St.)	VOCs	5	5	5	5	4	4.8
Los Angeles (Main St.)	Wind Speed & Direction	5	5	5	5	4	4.8
Los Angeles (Main St.)	Solar Radiation	5	5	5	5	4	4.8
Los Angeles (Main St.)	UV Radiation	5	5	5	5	4	4.8
Los Angeles (Main St.)	Barometric Pressure	5	5	5	5	4	4.8
Los Angeles (Main St.)	Precipitation	5	5	5	5	4	4.8
Los Angeles (Main St.)	Total NMOC	5	5	5	5	4	4.8
Los Angeles (Main St.)	Carbonyls	5	5	5	5	4	4.8
Rubidoux	O3	5	5	5	5	4	4.8
Rubidoux	NO/NOX	5	5	5	5	4	4.8
Rubidoux	Direct NO2	5	5	5	5	4	4.8
Rubidoux	VOCs	5	5	5	5	4	4.8
Rubidoux	Wind Speed & Direction	5	5	5	5	4	4.8
Rubidoux	Solar Radiation	5	5	5	5	4	4.8
Rubidoux	UV Radiation	5	5	5	5	4	4.8
Rubidoux	Barometric Pressure	5	5	5	5	4	4.8
Rubidoux	Precipitation	5	5	5	5	4	4.8
Rubidoux	Total NMOC	5	5	5	5	4	4.8
Rubidoux	Carbonyls	5	5	5	5	4	4.8

Table 46. NCORE Network Assessment

Monitoring location	Pollutant(s)	Monitoring Objective	Site Type	Spatial Scale	Minimum Monitoring Requirement	Air Quality Planning and Forecasting	Average Score
Los Angeles (Main St.)	O3	5	5	5	5	4	4.8
Los Angeles (Main St.)	PM2.5 Speciation	5	5	5	5	4	4.8
Los Angeles (Main St.)	PM2.5 FRM Mass	5	5	5	5	4	4.8
Los Angeles (Main St.)	Contious PM2.5 Mass	5	5	5	5	4	4.8
Los Angeles (Main St.)	PM10-PM2.5 Mass	5	5	5	1	4	4.0
Los Angeles (Main St.)	CO	5	5	5	5	4	4.8
Los Angeles (Main St.)	NO	5	5	5	5	4	4.8
Los Angeles (Main St.)	NO_Y	5	5	5	5	4	4.8
Los Angeles (Main St.)	SO2	5	5	5	5	4	4.8
Los Angeles (Main St.)	Wind Speed & Direction	5	5	5	5	4	4.8
Los Angeles (Main St.)	Solar Radiation	5	5	5	5	4	4.8
Los Angeles (Main St.)	UV Radiation	5	5	5	5	4	4.8
Los Angeles (Main St.)	Barometric Pressure	5	5	5	5	4	4.8
Los Angeles (Main St.)	Precipitation	5	5	5	5	4	4.8
Los Angeles (Main St.)	VOCs	5	5	5	5	4	4.8
Rubidoux	O3	5	5	5	5	4	4.8
Rubidoux	PM2.5 Speciation	5	5	5	5	4	4.8
Rubidoux	PM2.5 FRM Mass	5	5	5	5	4	4.8
Rubidoux	Contious PM2.5 Mass	5	5	5	5	4	4.8
Rubidoux	PM10-PM2.5 Mass	5	5	5	1	4	4.0
Rubidoux	CO	5	5	5	5	4	4.8
Rubidoux	NO	5	5	5	5	4	4.8
Rubidoux	NO_Y	5	5	5	5	4	4.8
Rubidoux	SO2	5	5	5	5	4	4.8
Rubidoux	Wind Speed & Direction	5	5	5	5	4	4.8
Rubidoux	Solar Radiation	5	5	5	5	4	4.8
Rubidoux	UV Radiation	5	5	5	5	4	4.8
Rubidoux	Barometric Pressure	5	5	5	5	4	4.8
Rubidoux	Precipitation	5	5	5	5	4	4.8
Rubidoux	VOCs	5	5	5	5	4	4.8

Monitoring Site Assessment

Constantly changing conditions related to maintaining air monitoring locations may compromise the need or ability to remain at a location. The historical trend, ability to remain at the location, surrounding obstructions and need to support monitoring objectives are all considerations. The monitoring site assessment examines the individual monitoring locations and whether they support monitoring objectives by maintaining a historical trend, adherence to Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring as defined in 40 CFR § 58 Appendix E and other important considerations to support synergies between monitoring programs and objectives.

The scoring matrix was used as a tool to determine value of the monitoring sites within the pollutant network. Monitoring sites are rated on scale of one – five. A rating of five means the site fully supports the criteria. A rating of one indicates the monitor does not meet the criteria or has a low value contribution toward achieving the criteria. The historical trend criteria is assessed on a sliding scale. Monitoring sites with more than 30 years' service receive a score of 5 and the site with the shortest historical trend receives a score of 1. The categories are averaged to determine an overall value for the monitor. The scoring matrix is shown as Table 47

TABLE 47. Monitoring Site Assessment Criteria Scoring Summary

Score	5	3	1
Historical Trend	Monitoring site has historical trend greater than 30 years.	Monitoring site has historical trend between 10 and 20 years.	Monitoring site has historical trend less than 5 years.
Security of Future Occupancy	Monitoring site has a lease of five years and no indication it will be terminated.	Monitoring site has a lease of less than five years or indefinite renewal with no indication it will be terminated.	South Coast AQMD has a term of one year or has been notified the lease will be terminated at the end of the cycle.
Probe Siting	Monitoring site is in compliance with Probe and Monitoring Path Siting Criteria for all ambient air quality monitoring as defined in 40 CFR § 58 Appendix E.	Monitoring site has compromises and does not meet all of the Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring as defined in 40 CFR § 58 Appendix E.	Monitoring site does not meet any of the Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring as defined in 40 CFR § 58 Appendix E.
Non -NAAQS Data Uses	Monitoring site has a significant role in public notifications, air quality forecasting, air quality planning, health or environmental justice programs.	Monitoring site has role in the following non-NAAQS data uses: public notifications, air quality forecasting, air quality planning, health or environmental justice programs.	Monitoring site has no role in public notifications, air quality forecasting, air quality planning, health or environmental justice programs.
Synergies	Monitoring site has reduced synergies between SLAMS, U.S. EPA and DHS monitoring programs; South Coast AQMD health studies, research, non-profit research or synergies external to the network.	Monitoring site has reduced synergies between SLAMS, U.S. EPA and DHS monitoring programs; South Coast AQMD health studies, research, non-profit research or synergies external to the network.	Monitoring site has reduced synergies between SLAMS, U.S. EPA and DHS monitoring programs; South Coast AQMD health studies, research, non-profit research or synergies external to the network.

Monitoring site assessments are shown in Tables 48 through Table 52 and a summary of all site assessments in Table 53.

TABLE 48. Historical Trend Site Assessment

Overall Rank	Location	AQS No.	Criteria Pollutants Monitored	Start Date	Years	Assessment Score
1	Azusa	60370002	CO, NO2, O3, PM10, PM2.5	01/01/57	63.5	5.0
2	Central San Bernardino Mountains	60710005	O3, PM10, PM2.5	10/01/73	46.7	5.0
3	Fontana	60712002	CO, NO2, SO2, O3, PM10, PM2.5	08/01/81	38.9	5.0
4	Glendora	60370016	CO, NO2, O3, PM10, PM2.5	08/01/80	39.9	5.0
5	Indio	60652002	O3, PM10, PM2.5	01/01/83	37.5	5.0
6	La Habra	60595001	CO, NO2, O3	08/01/60	59.9	5.0
7	Lake Elsinore	60659001	CO, NO2, O3, PM10, PM2.5	06/01/87	33.1	5.0
8	Long Beach (North)	60374002	PM2.5	10/01/62	57.7	5.0
9	Los Angeles (Main St.)	60371103	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/01/79	40.8	5.0
10	Norco	60650003	PM10	12/01/80	39.6	5.0
11	Palm Springs	60655001	CO, NO2, O3, PM10, PM2.5	04/01/71	49.2	5.0
12	Pasadena	60372005	CO, NO2, O3, PM2.5	04/01/82	38.2	5.0
13	Perris	60656001	O3, PM10	05/01/73	47.2	5.0
14	Pomona	60371701	CO, NO2, O3	06/01/65	55.1	5.0
15	Redlands	60714003	O3, PM10	09/01/86	33.8	5.0
16	Reseda	60371201	CO, NO2, O3, PM2.5	03/01/65	55.3	5.0
17	Rubidoux	60658001	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/01/72	47.8	5.0
18	San Bernardino	60719004	CO, NO2, O3, PM10, Pb, PM2.5	05/01/86	34.1	5.0
19	Upland	60711004	CO, NO2, O3, PM10, PM2.5	03/01/73	47.3	5.0
20	West Los Angeles	60370113	CO, NO2, O3	05/01/84	36.1	5.0
21	ATSF (Exide)	60371406	Pb	01/01/99	21.5	4.0
22	Banning Airport	60650012	NO2, O3, PM10, PM2.5	04/01/97	23.2	4.0
23	Big Bear	60718001	PM2.5	02/01/99	21.4	4.0
24	Mission Viejo	60592022	CO, O3, PM10, PM2.5	06/01/99	21.1	4.0
25	Uddeholm (Trojan Battery)	60371403	Pb	11/01/92	27.6	4.0
26	Anaheim	60590007	CO, NO2, O3, PM10, PM2.5	08/01/01	18.9	3.0
27	Closet World (Quemetco)	60371404	Pb	10/01/08	11.7	3.0
28	Compton	60371302	CO, NO2, O3, Pb, PM2.5	01/01/04	16.5	3.0
29	LAX Hastings	60375005	CO, NO2, O3, PM10, Pb	04/01/04	16.2	3.0
30	Long Beach (South)	60374004	PM10, Pb, PM2.5	06/01/03	17.1	3.0
31	Mira Loma (Van Buren)	60658005	CO, NO2, O3, PM10, PM2.5	11/01/05	14.6	3.0
32	Pico Rivera #2	60371602	CO, NO2, O3, PM10, Pb, PM2.5	09/01/05	14.8	3.0
33	Rehrig (Exide)	60371405	Pb	11/01/07	12.6	3.0
34	Santa Clarita	60376012	CO, NO2, O3, PM10, PM2.5	05/01/01	19.1	3.0
35	Anaheim Route 5 Near Road	60590008	CO, NO2	01/01/14	6.5	2.0
36	Long Beach Route 710 Near Road	60374008	NO2, PM2.5	01/01/15	5.5	2.0
37	Mecca (Saul Martinez)	60652005	PM10	01/01/11	9.5	2.0
38	Ontario Etiwanda Near Road	60710026	CO, NO2	06/01/14	6.0	2.0
39	Ontario Route 60 Near Road	60710027	NO2, PM2.5	01/01/15	5.5	2.0
40	Temecula	60650016	O3, PM2.5	06/01/10	10.0	2.0
41	North Hollywood	60374010	NO2, O3, PM2.5	01/01/20	0.5	1.0
42	Signal Hill	60374009	NO2, O3,	01/01/20	0.5	1.0

TABLE 49. Security of Future Occupancy Site Assessment

Overall Rank	Location	AQS No.	Criteria Pollutants Monitored	Start Date	Lease Term	Assessment Score
1	Anaheim Route 5 Near Road	60590008	CO, NO2	01/01/14	5.0	5.0
2	Azusa	60370002	CO, NO2, O3, PM10, PM2.5	01/01/57	5.0	5.0
3	Banning Airport	60650012	NO2, O3, PM10, PM2.5	04/01/97	5.0	5.0
4	Central San Bernardino Mountains	60710005	O3, PM10, PM2.5	10/01/73	5.0	5.0
5	Compton	60371302	CO, NO2, O3, Pb, PM2.5	01/01/04	5.0	5.0
6	Long Beach Route 710 Near Road	60374008	NO2, PM2.5	01/01/15	5.0	5.0
7	Mira Loma (Van Buren)	60658005	CO, NO2, O3, PM10, PM2.5	11/01/05	5.0	5.0
8	North Hollywood	60374010	NO2, O3, PM2.5	01/01/20	5.0	5.0
9	Ontario Etiwanda Near Road	60710026	CO, NO2	06/01/14	5.0	5.0
10	Ontario Route 60 Near Road	60710027	NO2, PM2.5	01/01/15	5.0	5.0
11	Redlands	60714003	O3, PM10	09/01/86	5.0	5.0
12	Rubidoux	60658001	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/01/72	5.0	5.0
13	Santa Clarita	60376012	CO, NO2, O3, PM10, PM2.5	05/01/01	5.0	5.0
14	Signal Hill	60374009	NO2, O3,	01/01/20	5.0	5.0
15	Temecula	60650016	O3, PM2.5	06/01/10	5.0	5.0
16	Uddeholm (Trojan Battery)	60371403	Pb	11/01/92	5.0	5.0
17	Los Angeles (Main St.)	60371103	CO, NO2, SO2, O3, PM10, Pb, PM2.5	09/01/79	4.0	4.0
18	Mecca (Saul Martinez)	60652005	PM10	01/01/11	4.0	4.0
19	Mission Viejo	60592022	CO, O3, PM10, PM2.5	06/01/99	4.0	4.0
20	Palm Springs	60655001	CO, NO2, O3, PM10, PM2.5	04/01/71	4.0	4.0
21	Pasadena	60372005	CO, NO2, O3, PM2.5	04/01/82	4.0	4.0
22	Pico Rivera #2	60371602	CO, NO2, O3, PM10, Pb, PM2.5	09/01/05	4.0	4.0
23	Pomona	60371701	CO, NO2, O3	06/01/65	4.0	4.0
24	Reseda	60371201	CO, NO2, O3, PM2.5	03/01/65	4.0	4.0
25	San Bernardino	60719004	CO, NO2, O3, PM10, Pb, PM2.5	05/01/86	4.0	4.0
26	West Los Angeles	60370113	CO, NO2, O3	05/01/84	4.0	4.0
27	Big Bear	60718001	PM2.5	02/01/99	3.0	3.0
28	Closet World (Quemetco)	60371404	Pb	10/01/08	3.0	3.0
29	Fontana	60712002	CO, NO2, SO2, O3, PM10, PM2.5	08/01/81	3.0	3.0
30	Glendora	60370016	CO, NO2, O3, PM10, PM2.5	08/01/80	3.0	3.0
31	Indio	60652002	O3, PM10, PM2.5	01/01/83	3.0	3.0
32	La Habra	60595001	CO, NO2, O3	08/01/60	3.0	3.0
33	Lake Elsinore	60659001	CO, NO2, O3, PM10, PM2.5	06/01/87	3.0	3.0
34	Long Beach (North)	60374002	PM2.5	10/01/62	3.0	3.0
35	Long Beach (South)	60374004	PM10, Pb, PM2.5	06/01/03	3.0	3.0
36	Perris	60656001	O3, PM10	05/01/73	3.0	3.0
37	Rehrig (Exide)	60371405	Pb	11/01/07	3.0	3.0
38	ATSF (Exide)	60371406	Pb	01/01/99	2.0	2.0
39	LAX Hastings	60375005	CO, NO2, O3, PM10, Pb	04/01/04	2.0	2.0
40	Anaheim	60590007	CO, NO2, O3, PM10, PM2.5	08/01/01	1.0	1.0
41	Norco	60650003	PM10	12/01/80	1.0	1.0
42	Upland	60711004	CO, NO2, O3, PM10, PM2.5	03/01/73	1.0	1.0

TABLE 50. Probe Siting Criteria Site Assessment

Overall Rank	Monitoring location	Horizontal and Vertical Placement	Spacing from Minor Sources	Spacing from Obstructions	Spacing from Trees	Spacing from Roadways	Average Score
1	Anaheim Route 5 Near Road	5.0	5.0	5.0	5.0	5.0	5.0
2	Banning Airport	5.0	5.0	5.0	5.0	5.0	5.0
3	Big Bear	5.0	5.0	5.0	5.0	5.0	5.0
4	Long Beach Route 710 Near Road	5.0	5.0	5.0	5.0	5.0	5.0
5	Mecca (Saul Martinez)	5.0	5.0	5.0	5.0	5.0	5.0
6	Mira Loma (Van Buren)	5.0	5.0	5.0	5.0	5.0	5.0
7	North Hollywood	5.0	5.0	5.0	5.0	5.0	5.0
8	Ontario Etiwanda Near Road	5.0	5.0	5.0	5.0	5.0	5.0
9	Ontario Route 60 Near Road	5.0	5.0	5.0	5.0	5.0	5.0
10	Reseda	5.0	5.0	5.0	5.0	5.0	5.0
11	Rubidoux	5.0	5.0	5.0	5.0	5.0	5.0
12	Santa Clarita	5.0	5.0	5.0	5.0	5.0	5.0
13	Temecula	5.0	5.0	5.0	5.0	5.0	5.0
14	Central San Bernardino Mountains	5.0	5.0	4.0	5.0	5.0	4.8
15	Indio	5.0	4.0	5.0	5.0	5.0	4.8
16	Long Beach (North)	5.0	5.0	4.0	5.0	5.0	4.8
17	Mission Viejo	5.0	5.0	4.0	5.0	5.0	4.8
18	Norco	5.0	5.0	5.0	4.0	5.0	4.8
19	Rehrig (Exide)	5.0	5.0	5.0	5.0	4.0	4.8
20	Signal Hill	5.0	5.0	4.0	5.0	5.0	4.8
21	ATSF (Exide)	5.0	4.0	5.0	5.0	4.0	4.6
22	Glendora	5.0	5.0	4.0	4.0	5.0	4.6
23	Los Angeles (Main St.)	5.0	3.0	5.0	5.0	5.0	4.6
24	Pico Rivera #2	5.0	5.0	3.0	5.0	5.0	4.6
25	Redlands	5.0	5.0	4.0	4.0	5.0	4.6
26	San Bernardino	5.0	5.0	5.0	3.0	5.0	4.6
27	Compton	5.0	5.0	4.0	4.0	4.0	4.4
28	LAX Hastings	5.0	4.0	4.0	4.0	5.0	4.4
29	Palm Springs	4.0	5.0	4.0	4.0	5.0	4.4
30	Upland	5.0	5.0	5.0	4.0	3.0	4.4
31	Azusa	5.0	3.0	4.0	4.0	5.0	4.2
32	Closet World (Quemetco)	4.0	5.0	2.0	5.0	5.0	4.2
33	Fontana	5.0	4.0	4.0	3.0	5.0	4.2
34	La Habra	5.0	4.0	4.0	3.0	5.0	4.2
35	Lake Elsinore	5.0	5.0	4.0	2.0	5.0	4.2
36	Uddeholm (Trojan Battery)	3.0	5.0	3.0	5.0	5.0	4.2
37	West Los Angeles	5.0	5.0	3.0	3.0	5.0	4.2
38	Long Beach (South)	4.0	4.0	4.0	4.0	4.0	4.0
39	Pasadena	3.0	5.0	3.0	3.0	5.0	3.8
40	Anaheim	5.0	4.0	4.0	4.0	1.0	3.6
41	Perris	4.0	3.0	2.0	4.0	5.0	3.6
42	Pomona	5.0	4.0	4.0	4.0	1.0	3.6

TABLE 51. Non-NAAQS Data Uses Site Assessment

Overall Rank	Monitoring location	Public Notification	Air Quality Forecasting	Air Quality Planning	Health Studies	Environmental Justice/AB617	Average Score
1	Anaheim	5.0	5.0	5.0	5.0	5.0	5.0
2	Compton	5.0	5.0	5.0	5.0	5.0	5.0
3	Los Angeles (Main St.)	5.0	5.0	5.0	5.0	5.0	5.0
4	North Hollywood	5.0	5.0	5.0	5.0	5.0	5.0
5	Rubidoux	5.0	5.0	5.0	5.0	5.0	5.0
6	San Bernardino	5.0	5.0	5.0	5.0	5.0	5.0
7	Signal Hill	5.0	5.0	5.0	5.0	5.0	5.0
8	Indio	5.0	5.0	5.0	4.0	5.0	4.8
9	Mecca (Saul Martinez)	5.0	5.0	5.0	4.0	5.0	4.8
10	Long Beach Route 710 Near Road	5.0	5.0	5.0	4.0	4.0	4.6
11	Ontario Route 60 Near Road	5.0	5.0	5.0	4.0	4.0	4.6
12	Central San Bernardino Mountains	5.0	5.0	5.0	4.0	3.0	4.4
13	Glendora	5.0	5.0	5.0	4.0	3.0	4.4
14	Mira Loma (Van Buren)	4.0	5.0	5.0	4.0	4.0	4.4
15	Ontario Etiwanda Near Road	5.0	5.0	5.0	4.0	3.0	4.4
16	Redlands	5.0	5.0	5.0	4.0	3.0	4.4
17	Banning Airport	5.0	5.0	5.0	3.0	3.0	4.2
18	Mission Viejo	5.0	5.0	5.0	3.0	3.0	4.2
19	Santa Clarita	5.0	5.0	5.0	3.0	3.0	4.2
20	Big Bear	5.0	4.0	5.0	3.0	3.0	4.0
21	Lake Elsinore	5.0	4.0	4.0	4.0	3.0	4.0
22	LAX Hastings	4.0	5.0	5.0	3.0	3.0	4.0
23	Palm Springs	5.0	5.0	5.0	3.0	2.0	4.0
24	Pico Rivera #2	3.0	3.0	4.0	5.0	5.0	4.0
25	Reseda	4.0	5.0	5.0	3.0	3.0	4.0
26	Fontana	4.0	4.0	4.0	4.0	3.0	3.8
27	Temecula	4.0	5.0	4.0	3.0	3.0	3.8
28	Anaheim Route 5 Near Road	3.0	3.0	4.0	4.0	4.0	3.6
29	West Los Angeles	3.0	5.0	4.0	3.0	3.0	3.6
30	Azusa	3.0	3.0	4.0	4.0	3.0	3.4
31	Upland	3.0	5.0	3.0	3.0	3.0	3.4
32	ATSF (Exide)	4.0	1.0	3.0	3.0	5.0	3.2
33	Closet World (Quemetco)	4.0	1.0	3.0	3.0	5.0	3.2
34	Long Beach (South)	3.0	4.0	4.0	2.0	3.0	3.2
35	Perris	3.0	3.0	3.0	3.0	4.0	3.2
36	Rehrig (Exide)	4.0	1.0	3.0	3.0	5.0	3.2
37	Uddeholm (Trojan Battery)	4.0	1.0	3.0	3.0	5.0	3.2
38	Pomona	2.0	3.0	2.0	1.0	5.0	2.6
39	La Habra	3.0	3.0	3.0	1.0	2.0	2.4
40	Pasadena	3.0	3.0	3.0	2.0	1.0	2.4
41	Long Beach (North)	1.0	1.0	3.0	3.0	3.0	2.2
42	Norco	1.0	1.0	1.0	1.0	1.0	1.0

TABLE 52. Synergies Site Assessment

Overall Rank	Monitoring location	SLAMS/U.S. EPA, DHS Program Synergies	U.S. EPA Programs/South Coast AQMD Health Study Synergies	AM Network/Office Synergies	Average Score
1	Los Angeles (Main St.)	5.0	5.0	4.0	4.7
2	Rubidoux	5.0	5.0	4.0	4.7
3	Anaheim	5.0	5.0	3.0	4.3
4	Fontana	5.0	5.0	3.0	4.3
5	Mira Loma (Van Buren)	4.0	5.0	4.0	4.3
6	Signal Hill	4.0	5.0	4.0	4.3
7	Anaheim Route 5 Near Road	4.0	4.0	4.0	4.0
8	Azusa	4.0	4.0	4.0	4.0
9	Mecca (Saul Martinez)	3.0	5.0	4.0	4.0
10	North Hollywood	4.0	4.0	4.0	4.0
11	Indio	3.0	5.0	3.0	3.7
12	Long Beach Route 710 Near Road	4.0	4.0	3.0	3.7
13	Ontario Etiwanda Near Road	4.0	4.0	3.0	3.7
14	Ontario Route 60 Near Road	4.0	4.0	3.0	3.7
15	Redlands	3.0	4.0	4.0	3.7
16	Reseda	3.0	3.0	5.0	3.7
17	Pico Rivera #2	3.0	3.0	4.0	3.3
18	San Bernardino	3.0	3.0	4.0	3.3
19	West Los Angeles	3.0	2.0	5.0	3.3
20	Central San Bernardino Mountains	3.0	3.0	3.0	3.0
21	Compton	3.0	3.0	3.0	3.0
22	Glendora	3.0	3.0	3.0	3.0
23	LAX Hastings	3.0	3.0	3.0	3.0
24	Palm Springs	2.0	3.0	4.0	3.0
25	Santa Clarita	2.0	2.0	5.0	3.0
26	Mission Viejo	2.0	2.0	4.0	2.7
27	Pasadena	3.0	2.0	3.0	2.7
28	Temecula	2.0	2.0	4.0	2.7
29	Upland	3.0	2.0	3.0	2.7
30	Banning Airport	2.0	2.0	3.0	2.3
31	Big Bear	2.0	2.0	3.0	2.3
32	Lake Elsinore	2.0	2.0	3.0	2.3
33	Long Beach (North)	1.0	3.0	3.0	2.3
34	La Habra	1.0	1.0	3.0	1.7
35	Long Beach (South)	1.0	1.0	3.0	1.7
36	Perris	1.0	1.0	3.0	1.7
37	Pomona	1.0	1.0	3.0	1.7
38	ATSF (Exide)	1.0	1.0	1.0	1.0
39	Closet World (Quemetco)	1.0	1.0	1.0	1.0
40	Norco	1.0	1.0	1.0	1.0
41	Rehrig (Exide)	1.0	1.0	1.0	1.0
42	Uddeholm (Trojan Battery)	1.0	1.0	1.0	1.0

TABLE 53. Combined Monitoring Site Assessment Summary

Overall Rank	Monitoring location	Historical Trend	Security of Future Occupancy	Probe Siting	Non-NAAQS Data Uses	Synergies	Average Score
1	Rubidoux	5.0	5.0	5.0	5.0	4.7	4.9
2	Los Angeles (Main St.)	5.0	4.0	4.6	5.0	4.7	4.7
3	Redlands	5.0	5.0	4.6	4.4	3.7	4.5
4	Central San Bernardino Mountains	5.0	5.0	4.8	4.4	3.0	4.4
5	San Bernardino	5.0	4.0	4.6	5.0	3.3	4.4
6	Mira Loma (Van Buren)	3.0	5.0	5.0	4.4	4.3	4.3
7	Reseda	5.0	4.0	5.0	4.0	3.7	4.3
8	Azusa	5.0	5.0	4.2	3.4	4.0	4.3
9	Indio	5.0	3.0	4.8	4.8	3.7	4.3
10	Banning Airport	4.0	5.0	5.0	4.2	2.3	4.1
11	Compton	3.0	5.0	4.4	5.0	3.0	4.1
12	Palm Springs	5.0	4.0	4.4	4.0	3.0	4.1
13	Fontana	5.0	3.0	4.2	3.8	4.3	4.1
14	Long Beach Route 710 Near Road	2.0	5.0	5.0	4.6	3.7	4.1
15	Ontario Route 60 Near Road	2.0	5.0	5.0	4.6	3.7	4.1
16	Santa Clarita	3.0	5.0	5.0	4.2	3.0	4.0
17	Signal Hill	1.0	5.0	4.8	5.0	4.3	4.0
18	West Los Angeles	5.0	4.0	4.2	3.6	3.3	4.0
19	Ontario Etiwanda Near Road	2.0	5.0	5.0	4.4	3.7	4.0
20	Glendora	5.0	3.0	4.6	4.4	3.0	4.0
21	North Hollywood	1.0	5.0	5.0	5.0	4.0	4.0
22	Mecca (Saul Martinez)	2.0	4.0	5.0	4.8	4.0	4.0
23	Mission Viejo	4.0	4.0	4.8	4.2	2.7	3.9
24	Anaheim Route 5 Near Road	2.0	5.0	5.0	3.6	4.0	3.9
25	Pico Rivera #2	3.0	4.0	4.6	4.0	3.3	3.8
26	Lake Elsinore	5.0	3.0	4.2	4.0	2.3	3.7
27	Temecula	2.0	5.0	5.0	3.8	2.7	3.7
28	Big Bear	4.0	3.0	5.0	4.0	2.3	3.7
29	Pasadena	5.0	4.0	3.8	2.4	2.7	3.6
30	Uddeholm (Trojan Battery)	4.0	5.0	4.2	3.2	1.0	3.5
31	Long Beach (North)	5.0	3.0	4.8	2.2	2.3	3.5
32	Anaheim	3.0	1.0	3.6	5.0	4.3	3.4
33	Pomona	5.0	4.0	3.6	2.6	1.7	3.4
34	Perris	5.0	3.0	3.6	3.2	1.7	3.3
35	Upland	5.0	1.0	4.4	3.4	2.7	3.3
36	LAX Hastings	3.0	2.0	4.4	4.0	3.0	3.3
37	La Habra	5.0	3.0	4.2	2.4	1.7	3.3
38	Rehrig (Exide)	3.0	3.0	4.8	3.2	1.0	3.0
39	Long Beach (South)	3.0	3.0	4.0	3.2	1.7	3.0
40	ATSF (Exide)	4.0	2.0	4.6	3.2	1.0	3.0
41	Closet World (Quemetco)	3.0	3.0	4.2	3.2	1.0	2.9
42	Norco	5.0	1.0	4.8	1.0	1.0	2.6

Assessment Summaries

This section describes potential changes to the South Coast AQMD air monitoring network and identifies areas for improvement based on the pollutant network and monitoring site assessments. The overall goal of these potential modifications is to improve the ability to achieve multiple monitoring objectives while ensuring the efficient use of limited resources.

The information contained in the network assessment will ensure that criteria pollutants are measured at important locations and that monitoring resources are used in the most effective and efficient manner to meet the needs of multiple stakeholders.

The network assessment was used as a tool to identify new data needs and associated technologies, find opportunities for consolidation of individual sites into multi-pollutant sites, and identify geographic areas where network coverage should be increased or decreased based on changes in the population and/or emissions.

This assessment concludes whether the monitoring objectives defined in 40 CFR § 58 Appendix D and E are met, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network.

The completed network assessment considers existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals and for any sites that are being proposed for discontinuance the effect on data users. The following are conclusions from the preceding report:

Pollutant Network Design Assessment

The pollutant networks assessment determined whether individual monitors within the network were consistent with CFR § 58 Appendix D network design criteria for ambient air monitoring. The scoring matrix developed showed the value of each monitor within the pollutant network and it's contribution toward achieving the criteria. Monitors which have compromises and do not completely meet network design criteria are lower value and received a lower score. Monitors which meet the network design criteria are higher value and received higher scores. The results of the assessment are shown in Tables 33 through 45 and assessment categories are summarized below along with recommended changes to the pollutant networks.

Monitoring Objectives

The ambient air monitoring networks are designed to meet the three basic monitoring objectives shown in Tables 17 and 19. Real time data from South Coast AQMD air monitoring stations is used for real-time public notification of air pollution events, air quality forecasting, and the analysis and modeling for strategic plan development, including the preparation of the AQMP. Data from the criteria pollutants that are measured continuously are available to the public in near real time through the South Coast AQMD, U.S. EPA AirNow, and California Air Resourced Board websites. Additional real time information is available through the South Coast AQMD application for Android and iPhone. Support for air pollution research studies is a prime objective for monitoring sites

within the network and supported at several locations. The South Coast AQMD monitoring network fully meets this requirement.

Site Type

The ambient air monitoring network supports the monitoring objectives by having a variety of monitoring types. The pollutant network monitors are located to determine highest concentrations, typical concentrations in high population areas, impact of sources, regional transport and welfare based impacts where appropriate. Designations are shown in Tables 18 and 19. The South Coast AQMD monitoring network fully meets this requirement.

Spatial Scale

Monitors are located to correctly match the spatial scale the site type. These must be consistent with monitoring objectives and are shown in Tables 18 and 19. Although further work can be done to refine the relationship between site type and spatial scale, the South Coast AQMD monitoring network fully meets this requirement.

Minimum Requirements

U.S. EPA specifies the minimum number of sites required in a network based on the latest census population data and DV concentrations for specific criteria pollutants. The South Coast AQMD meets or exceeds the minimum monitoring requirement for all criteria pollutants and monitoring programs and takes into consideration the change in populations over the last five years. The minimum monitoring requirements for all criteria pollutants are shown in Tables 20 through 32. The South Coast AQMD monitoring network exceeds minimum monitoring requirement and no new sites are needed as a result of the assessment.

Air Quality Planning and Forecasting

The assessment showed the South Coast AQMD monitoring network fully meets the need for data to support compliance with ambient air quality standards and emissions strategy development. The monitoring network provides data for:

1. Forecasting and forecast validation.
2. Dust and smoke advisories.
3. Determination of background concentrations for point source modeling review.
4. Monitoring placement for the gridded real time AQI map.
5. Determination of highest concentrations.
6. Development of exceptional event demonstrations.

Monitors which are critical for this purpose received higher scores in the assessment. Lower scores indicated the monitors are lower value for this purpose.

Recommended Changes to the Pollutant Networks

The South Coast AQMD pollutant networks meet or exceed the minimum monitoring requirements for CO, NO2, Pb and PM10. The CO, NO2, Pb and a portion of the PM10 pollutant networks have reached NAAQS attainment. The exception is the Coachella Valley

planning area for PM10. The monitoring networks which have attained NAAQS are more reflective of a regulatory monitoring network than a maintenance network and can be reduced.

In all cases, South Coast AQMD measurements of CO, NO2, Pb and PM10 network are made at monitoring sites that are also part of the O3 and PM monitoring networks which are not in attainment with NAAQS. Thus, the cost of continuing to monitor for these pollutants is relatively low given that the site infrastructure and staff resources dedicated to the sites will continue as part of the PM and O3 networks. Because of this, not all lower value monitors may be under consideration for closure.

The CO, NO2, Pb and PM10 network monitors which have been identified as lower value are shown in Tables 36 through 41. These monitors will be considered for closure in consultation with South Coast AQMD Planning and U.S. EPA. Recommended monitors for closure are shown below.

CO
1. Lake Elsinore
2. Upland
3. Pomona
4. Pico Rivera
5. Pasadena
6. Glendora
7. Fontana
8. Azusa

NO2
1. Lake Elsinore
2. La Habra
3. West Los Angeles
4. Upland
5. Santa Clarita
6. Reseda
7. Pomona
8. Pico Rivera

Pb
1. San Bernardino
2. Pico Rivera
3. LAX Hastings
4. Long Beach (South)

Pb (Source)
1. Uddeholm (Trojan Battery)
2. Rehrig
3. Closet World (Quemetco)
4. ATSF (Exide)

PM10
1. Norco
2. LAX Hastings
3. Mission Viejo

System modification requests will be submitted to U.S. EPA for any of the preceding monitors identified for closure. There would be no effect on users as the monitors being considered for closure are not the only SLAMS monitors operating within the maintenance areas and the monitoring networks will still exceed minimum monitoring requirements. System modifications would be requested under 40 CFR Part 58.14 (c) (1-6).

Although there were no recommendations for additional monitors during consultations with South Coast AQMD Planning staff, a suggested change in the configuration of the PM2.5 and PM10 networks is to transition additional FRM to continuous FEM monitors. Currently many of these monitors are being run concurrently with FRM filter-based measurements to establish comparability and determine any biases. Once complete, the FEM continuous monitors can replace many existing FRM monitors in the network. This will reduce resources required to maintain FRM samplers and provide additional resources to provide real time data to the general public.

Monitoring Site Assessment

The monitoring site assessment determined whether individual monitoring locations within the network were consistent with Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring as defined in 40 CFR § 58 Appendix E. Additionally, other important considerations were taken into account which support air quality planning strategies. The scoring matrix developed showed the value of each site in the network and it's contribution toward achieving the criteria. Monitoring sites which have compromises and do not completely meet the assessment criteria are lower value and received a lower score. Monitors which meet the criteria are higher value and received higher scores. The results of the assessment are shown in Tables 47 through 51 and summarized in Table 52. Any sites considered for closure will be in in consultation with South Coast AQMD Planning and U.S. EPA. The following sites are recommended for closure based on the preceding assessment:

Site Closures

- The Norco AMS has been in operation for 30 years. The area surrounding the facility is changing which may compromise siting. During the last two years the monitor has moved to a new location within the facility and has a low security for future occupancy. The lease is renewed annually, and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network. The infrastructure is inadequate as there are no indoor facilities which allow for criteria pollutant monitoring.
- The Closet World (Quemetco) AMS has been in operation for 12 years. The area surrounding the facility is changing with more heavy duty (HD) vehicles parking at the facility which could impact security of future occupancy and compromise probe siting. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring

programs and those external to the network. The infrastructure is inadequate as there are no indoor facilities which allow for monitoring of criteria pollutants. This source-oriented Pb site is not required based on the most recent NEI estimates. There have been no violations of the 3 month rolling average during the last three years of operation and it is anticipated a request for closure would be granted under 40 CFR 58 Appendix D §4.5(a)(ii).

- The ATSF (Exide) AMS has been in operation for 21 years. The area surrounding the facility is changing with more HD vehicles in close proximity to the monitor creating a safety issue. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network. The infrastructure is inadequate as there are no indoor facilities which allow for monitoring of criteria pollutants. This source-oriented Pb site is not required based on the most recent NEI estimates. There have been no violations of the 3 month rolling average during the last three years of operation and it is anticipated a request for closure would be granted under 40 CFR 58 Appendix D §4.5(a)(ii).
- The Rehrig AMS has been in operation for 13 years. The current site is located in a parking lot which could compromise probe siting. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network. The infrastructure is inadequate as there are no indoor facilities which allow for monitoring of criteria pollutants. The source-oriented Pb site is not required based on the most recent NEI estimates. There have been no violations of the 3 month rolling average during the last three years of operation and it is anticipated a request for closure would be granted under 40 CFR 58 Appendix D §4.5(a)(ii).
- The La Habra AMS has been in operation for 60 years. The area surrounding the facility is changing and HD vehicle traffic along with proximity to nearby trees may compromise siting. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network.
- The Perris AMS has been in operation for 47 years. The current location has compromised siting and fails to meet siting criteria in 40 CFR § 58 Appendix E spacing from obstructions. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network.
- The Pomona AMS has been in operation for 55 years. The current location has compromised siting and fails to meet siting criteria in 40 CFR § 58 Appendix E spacing from trees and distance from roadway. The lease is on a month to month schedule and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network.

System modification requests will be submitted to U.S. EPA for any of the preceding monitoring sites identified for closure. There would be no effect on users as the monitoring sites being considered for closure are not the only SLAMS monitors operating within the maintenance areas and the monitoring networks will still exceed minimum monitoring

requirements. System modifications would be requested under 40 CFR Part 58.14 (c) (1-6) or 40 CFR 58 Appendix D §4.5(a)(ii).

Site Consolidations

Sites which did not fully meet the assessment criteria and are in close proximity to nearby sites are candidates for consolidation into multi-pollutant locations. The following monitoring site was identified as lower value and does not fully meet the assessment criteria. Because of this the monitoring site is being considered for consolidation:

- The Long Beach (South) AMS has been in operation for 17 years. The current location has compromised siting and fails to meet the 40 CFR § 58 Appendix E criteria. During the last five years, new buildings and portable storage has been moved adjacent to the monitors which compromise siting. The lease is renewed annually, and the location is not typically used for health studies. There are few synergies between air monitoring programs and those external to the network. The infrastructure is inadequate as there are no indoor facilities which allow for criteria pollutant monitoring. This particulate only monitoring site can be consolidated into a multi-pollutant monitoring site at the Signal Hill AMS located within 0.2 mile.

System modification requests would be submitted to U.S. EPA for any of the preceding monitors identified for closure or consolidation. There would be no effect on data users, as the monitors being considered for closure are not the only SLAMS monitors operating within the maintenance areas and the monitoring networks will still exceed minimum monitoring requirements. System modifications would be requested under 40 CFR Part 58.14 (c) (1-6).