South Coast AQMD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ANNUAL AIR QUALITY MONITORING NETWORK PLAN

July, 2014

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INTRODUCTION

An annual review of the Air Quality Monitoring Network is required by Federal Regulations as a means to identify and report needs for additions, relocations, or terminations of monitoring sites or instrumentation. This report describes the network of ambient air quality monitors in the jurisdiction of and operated by the South Coast Air Quality Management District (SCAQMD). It includes a review of actions taken during the 2013-2014 fiscal year and plans for action in the year ahead. This plan addresses the requirement for an annual network plan as listed in Title 40, Part 58, Section 10 of the Code of Federal Regulations (40 CFR § 58.10). Regulations require the report be submitted to the U.S. Environmental Protection Agency (EPA) by July 1 of each year after a 30 day public comment period.

The SCAQMD staff, along with the California Air Resources Board (CARB), conducted an extensive review of the air monitoring sites in the South Coast Air Basin (SCAB) in late 1980. During the review, State and Local Air Monitoring Stations (SLAMS) designations, site type, and spatial scales of representativeness were assigned to the criteria pollutants monitored at each site. Since that time, the EPA Region IX and CARB staff visited selected sites to confirm compliance with applicable siting criteria and related requirements. The most recent site visits occurred in 2010 to conduct a comprehensive Technical System Audit (TSA) of the ambient air monitoring network. Each year, SCAQMD staff conducts an annual review of its air monitoring network and submits it to the EPA. The review process focuses on current and future network air monitoring strategies and network changes are made in consultation with the EPA and CARB. When re-location of monitoring sites is required, site reports are updated in the EPA's Air Quality System (AQS) to document compliance with established siting criteria for the new locations.

Public Comments

Pursuant to Federal regulations, a draft plan is made available for public inspection and comment for a period of 30 days prior to submission of the final plan to EPA. Hard copies of the final document are made available on July 1, 2014 at the SCAQMD's Public Information Desk in Diamond Bar, CA. The document is also available on the SCAQMD as of May 19, 2014 in the drop down menu under the "Library", "Clean Air Plans" and "Air Monitoring Network Plan." (http://www.aqmd.gov/home/library/clean-air-plans/monitoring-network-plan). The final document is submitted to the EPA on July 1, 2014. Public comments and responses are also submitted to EPA to fulfill Federal regulatory requirements.

Network Design

The SCAQMD operates 38 permanent, monitoring stations, and 4 single-pollutant source impact Lead (Pb) air monitoring sites in the SCAB and a portion of the Salton Sea Air Basin in Coachella Valley. This area includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The newest permanent site was added during the MATES IV project to monitor Ozone (O3) and continuous PM2.5 for the Long Beach area. The newest source Pb sites were added in January 2010 as required by EPA regulation. Table 1 provides a list of monitoring locations, the EPA AQS site codes, and the pollutants measured at each site. Table 2 provides the spatial scale and the site type for each monitor at all sites.

Table 3 describes the monitoring purpose for the monitors at each site. Table 4 describes the site type, spatial scale and monitoring purpose for continuous particulate analyzers at each site. A requirement of the annual network plan implemented in 2007, the *monitoring purpose* is the reason why a certain pollutant is being measured at a certain site.

A list and description of monitoring purposes are provided below and portions are adapted from the CARB annual network plan for 2007.

Background Level monitoring is used to determine general background levels of air pollutants as they enter the SCAB.

High Concentration monitoring is conducted at sites to determine the highest concentration of an air pollutant in an area within the monitoring network. A monitoring network may have multiple high concentration sites (i.e., due to varying meteorology year to year).

Pollutant Transport is the movement of pollutant between air basins or areas within an air basin. Transport monitoring is used to assess and mitigate upwind areas when transported pollutant affects neighboring downwind areas. Also, transport monitoring is used to determine the extent of regional pollutant transport among populated areas and to rural areas.

Population Exposure monitoring is conducted to represent the air pollutant concentrations that a populated area is exposed to.

Representative Concentration monitoring is conducted to represent the air quality concentrations for a pollutant expected to be similar throughout a geographical area. These sites do not necessarily indicate the highest concentrations in the area for a particular pollutant.

Source Impact monitoring is used to determine the impact of significant sources or source categories of air quality emissions on ambient air quality. The air pollutant sources may be stationary or mobile.

Trend Analysis monitoring is useful for comparing and analyzing air pollution concentrations over time. Usually, trend analyses can be used to assess the progress in improving air quality for an area over a period of many years.

Site Comparison monitoring is used to assess the effect on measured pollutant levels of moving a monitoring location a short distance (usually less than two miles). Some monitoring stations become no longer usable due to development, change of lease terms, or eviction. In these cases, attempts are made to conduct concurrent monitoring at the old and new site for a period of at least one year in order to compare pollutant concentrations.

Real Time Reporting/Modeling is used to provide data to EPA's AIRNOW system which reports conditions for air pollutants on a real time basis to the general public. Data is also used to provide accurate and timely air quality forecast guidance to residents of the SCAB.

Multiple purposes for measuring a pollutant at a particular site are possible. There is some overlap between site type and monitoring purposes as defined by EPA and given in Tables 2, 3, and 4.

TABLE 1. List of Monitoring Sites

	Location	AQS No.	Pollutants Monitored	Start Date
1	Anaheim	060590007	CO,NO2,O3,PM10,PM2.5	08/01
2	Anaheim Near Road	060590008	NO2	1/14
3	ATSF (Exide)	060371406	Pb	01/99
4	Azusa	060370002	CO,NO2,O3,PM10,PM2.5,SO4	01/57
5	Banning Airport	060650012	NO2,O3,PM10, PM2.5	04/97
6	Big Bear	060718001	PM2.5	02/99
7	Burbank	060371002	CO,NO2,SO2,O3,PM10,PM2.5	10/61
8	Closet World (Quemetco)	060371404	Pb	10/08
9	Compton	060371302	CO,NO2,O3,Pb,PM2.5	01/04
10	Costa Mesa	060591003	CO,NO2,SO2,O3	11/89
11	Crestline	060710005	O3,PM10	10/73
12	Fontana	060712002	CO,NO2,SO2,O3,PM10,PM2.5,SO4	08/81
13	Glendora	060370016	CO,NO2,O3,PM2.5,PM10	08/80
14	Indio	060652002	O3,PM10,PM2.5	01/83
15	La Habra	060595001	CO,NO2,O3	08/60
16	Lake Elsinore	060659001	CO,NO2,O3,PM2.5,PM10	06/87
17	LAX Hastings	060375005	CO,NO2,O3,PM10,Pb,SO4	04/04
18	Long Beach (Hudson)	060374006	CO, NO2,SO2,O3,PM10	1/10
19	Long Beach (North) [1]	060374002	PM2.5	10/62
20	Los Angeles (Main St.)	060371103	CO,NO2,SO2,O3,PM10,Pb,PM2.5,SO4	09/79
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	Ontario Fire Station	060710025	PM10,PM2.5	01/99
25	Ontario Near Road	Unavailable	NO2	6/14
26	Palm Springs	060655001	CO,NO2,O3,PM10,PM2.5	04/71
27	Pasadena	060372005	CO,NO2,O3,PM2.5,SO4	04/82
28	Perris	060656001	O3,PM10	05/73
29	Pico Rivera #2	060371602	CO,NO2,O3,Pb,PM2.5,SO4,PM10	09/05
30	Pomona	060371701	CO,NO2,O3	06/65
31	Redlands	060714003	O3,PM10	09/86
32	Rehrig (Exide)	060371405	Pb	11/07
33	Reseda	060371201	CO,NO2,O3,PM2.5	03/65
34	Riverside (Magnolia)	060651003	CO,NO2,Pb,PM10,PM2.5,SO4	10/72
35	Rubidoux	060658001	CO,NO2,SO2,O3,PM10,Pb,PM2.5,SO4	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	South Long Beach	060374004	PM10,Pb,PM2.5,SO4	06/03
39	Temecula	060650016	O3, PM2.5	06/10
40	Uddelholm (Trojan Battery)	060371403	Pb	11/92
41	Upland	060711004	CO,NO2,O3,Pb,PM2.5,PM10,SO4	03/73
42	West Los Angeles	060370113	CO,NO2,O3,SO4	05/84

[1] Some pollutants were discontinued at Long Beach (North) on 9/30/2013 due to termination of lease.

TABLE 2. FRM/FEM 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
Anaheim	NS/PE	US/PE		NS/PE	NS/PE	NS/PE	
Anaheim Near Road		MI/HC					
ATSF (Exide)							MI/IM
Azusa	NS/PE	US/PE		US/HC	NS/PE	NS/PE	
Banning Airport		NS/PE		NS/PE	NS/PE		
Big Bear						NS/PE	
Burbank	NS/HC	NS/PE	NS/PE	US/HC	NS/PE	NS/PE	
Closet World (Quemetco)							MI/IM
Compton	MS/HC	MS/PE		NS/PE		NS/PE	NS/PE
Costa Mesa	NS/PE	NS/PE	NS/PE	NS/PE			
Crestline				NS/HC	NS/PE		
Fontana	NS/PE	US/PE	NS/PE	US/PE	NS/HC	NS/PE	
Glendora	NS/PE	NS/PE		NS/HC			
Indio				NS/PE	NS/HC	NS/PE	
La Habra	NS/PE	US/PE		NS/PE			
Lake Elsinore	NS/PE	NS/PE		NS/PE			
LAX Hastings	MS/PE/BK	MS/PE/BK	NS/PE/BK	NS/PE/BK	NS/PE/BK		NS/PE/BK
Long Beach (Hudson)	NS/HC	NS/PE	NS/HC	NS/PE	NS/PE		
Long Beach (North) [1]						NS/HC	
Los Angeles (Main St.)	NS/PE	NS/HC	NS/PE	NS/PE	NS/PE	NS/HC	NS/PE
Mira Loma (Van Buren)	NS/PE	NS/PE		NS/PE	NS/HC	NS/HC	
Mission Viejo	NS/PE			NS/PE	NS/PE	NS/PE	
Norco					NS/PE		
Ontario Fire Station					NS/HC	NS/PE	
Ontario Etiwanda Near Road		MI/HC					
Palm Springs	NS/PE	NS/PE		NS/PE	NS/PE	NS/PE	
Pasadena	MS/PE	MS/HC		NS/PE		NS/PE	
Perris				NS/PE	NS/PE		
Pico Rivera #2	NS/PE	NS/HC		NS/HC		NS/PE	NS/PE
Pomona	MI/PE	MS/PE		NS/HC			
Redlands				NS/PE	NS/PE		
Rehrig (Exide)							MI/IM
Reseda	NS/PE	US/PE		US/HC		NS/PE	
Riverside	MI/HC	US/PE				NS/HC	MI/HC
Rubidoux	NS/PE	US/PE	NS/PE	US/HC	NS/HC	NS/HC	NS/PE
San Bernardino	MS/PE	US/PE		NS/HC	NS/HC	NS/PE	NS/PE
Santa Clarita	NS/PE	NS/PE		US/HC	NS/PE	NS/PE	
South Long Beach					NS/HC	NS/HC	NS/HC
Temecula				NS/HC			
Uddelholm (Trojan Battery)							MI/IM
Upland	NS/PE	NS/PE		NS/PE			NS/PE
West Los Angeles	NS/PE	MS/HC		NS/PE			

[1] Some pollutants were discontinued at Long Beach (North) on 9/30/2013 due to termination of lease.

TABLE 3. FRM/FEM Criteria Pollutant Monitoring Purposes

MONITORING PURPOSE

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
Anaheim	TR	TR/RC		TR	TR/RC	TR/EX	
Anaheim Near Road		EX/HC					
ATSF (Exide)							SO
Azusa	TR	TR/RC		TR	TR	TR/EX	
Banning Airport		TP/RC		TP	TP		
Big Bear						EX/SO/TP	
Closet World (Quemetco)							SO
Burbank	TR	TR/RC	TR	TR	TR/RC	TR/EX	
Compton	TR/HC	TR/RC		TR/RC		EX/RC	EX
Costa Mesa	RC	TR/RC	TR	RC			
Crestline				HC	TP/RC		
Fontana	RC	TP/RC	TR	RC	HC	EX/TP	
Glendora	RC	TR/RC		HC			
Indio				TP	HC/CO	TP/EX	
La Habra	RC	TR/RC		RC			
Lake Elsinore	TP/RC	TP/RC		TP/RC			
LAX Hastings	BK	BK	BK	BK	BK		BK
Long Beach (Hudson)	TR	TR/RC	TR/HC	TR	TR/RC		
Long Beach (North) [1]						EX/HC	
Los Angeles (Main St.)	SO/RC	SO/HC	TR	TR/RC	TR/RC/CO	EX/HC/CO	EX/CO
Mira Loma (Van Buren)	TR/RC	TR/RC		TR/HC	HC	EX/HC/CO	
Mission Viejo	RC			TR/RC	TR/RC	EX/RC	
Norco					TR/RC		
Ontario Fire Station					HC/CO	EX/RC	
Ontario Etiwanda Near Road		EX/HC					
Palm Springs	TP/RC	TP/RC		TP	TP/HC	EX/TP	
Pasadena	TR/RC	TR/HC		TR/RC		EX/RC	
Perris				TP	TR		
Pico Rivera #2	RC	HC		HC		EX/RC	EX
Pomona	RC	RC		HC			
Redlands				TP/RC	TP/RC		
Rehrig (Exide)							SO/CO
Reseda	RC	TR/RC		HC		EX/RC	
Riverside	HC	TR/RC				EX/HC	EX/CO
Rubidoux	TR/RC	TR/RC	TR	TR/HC	TR/HC/CO	EX/TR/HC/CO	EX
San Bernardino	TR/RC	TP/RC		TR/HC	TR/HC	EX/TR	EX
Santa Clarita	RC	TP/RC		TP/HC	RC	EX/RC	
South Long Beach					HC	EX/SO	EX
Uddelholm (Trojan Battery)							SO
Temecula				TR/HC			
Upland	RC	TR/RC		TR/RC			EX
West Los Angeles	RC	TR/HC		RC			

[1] Some pollutants were discontinued at Long Beach (North) on 9/30/2013 due to termination of lease.

TABLE 4. Continuous $PM_{10}/PM_{2.5}$ Monitoring Purpose, Site Type and Spatial Scales

SITE TYPE	SPATIAL SCALE	INSTRUMENT TYPE
HC – High Concentration	MI – Microscale	TEOM
PE – Population Exposure	NS – Neighborhood Scale	BAM (NON-FEM)
BK - Background		BAM (FEM)

MONITORING PURPOSE

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

Location	Continuous PM10				Continuous PM2.5				PM10 – 2.5
	Type	Purpose	Site Type	Scale	Type	Purpose	Site Type	Scale	Operational
Anaheim	BAM/FEM	RM/TR	PE	NS	BAM/FEM	RM/TR	PE	NS	
Banning Airport					BAM/NON-FEM	RM	PE	NS	
Burbank	TEOM/FEM	RM/TR	PE	NS	BAM/FEM	RM/TR	PE	NS	
Crestline					BAM/NON-FEM	RM	PE	NS	
Glendora	BAM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	
Indio	TEOM/FEM	RM	HC	NS					
Lake Elsinore	TEOM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	
Long Beach (North) [1]									
Los Angeles (Main St.)	BAM/FEM	RM/TR	PE	NS	BAM/FEM	RM	HC	NS	Yes
Mira Loma (Van Buren)	BAM/FEM	RM	HC	NS	BAM/FEM	RM	HC	NS	
Palm Springs	TEOM/FEM	RM/TP	HC	NS					
Reseda					BAM/NON-FEM	RM	PE	NS	
Riverside	BAM/FEM	RM	HC	NS	BAM/NON-FEM	RM	HC	NS	
Rubidoux	TEOM/FEM	RM/TR	HC	NS	BAM/FEM & NON-FEM	RM/TR/CO	HC	NS	Yes
San Bernardino	TEOM/FEM	RM/TR	HC	NS					
Santa Clarita					BAM/NON-FEM	RM	PE	NS	
South Long Beach					BAM/FEM	RM/SO	PE	NS	
Temecula					BAM/NON-FEM	RM	PE	NS	
Upland	BAM/FEM	RM	PE	NS	BAM/NON-FEM	RM	PE	NS	

[1] Some pollutants were discontinued at Long Beach (North) on 9/30/2013 due to termination of lease

A brief description of the criteria pollutant and program monitoring networks are provided below:

OZONE (O3)

The SCAQMD operates 30 sites where O3 measurements are made as part of the Air Monitoring Network. O3 sites are spread throughout the SCAB with highest concentrations measured inland. Figure 1 in Appendix A shows the spatial distribution of these sites and Table 16 shows the minimum monitoring requirements.

PM10

Size-selective inlet manual high volume samplers are operated at 21 sites to meet the requirements for PM10 Federal Reference Method (FRM) sampling. The PM10 monitoring network contains one site within 25% of the Federal NAAQS at Indio, as shown in the 2012 Air Quality Data Table (http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year), Figure 9. The Indio, Rubidoux, and Ontario sites are designated PM10 collocated as shown in Table 24. All PM10 FRM monitors operate on a one day in six day schedule, with the exception of Indio and Rubidoux which operate on one day in three day schedule. The Indio and Los Angeles (Main) sites are shown as design value sites in Table 18. Based upon the design values, the Indio site meets the minimum sampling schedule requirement as does the Los Angeles (Main) site. The remaining sites meet or exceed the minimum 6 day sample schedule requirement.

PM10 continuous analyzers are operated at 12 sampling sites. These real-time devices are capable of making hourly particulate concentration measurements. Table 4 describes the monitor type, site type, monitoring purpose, and spatial scale for continuous particulate analyzers. Figure 2 in Appendix A shows the spatial distribution of the sampling sites and Table 18 shows the minimum monitoring requirements. Real-time monitors, for the most part, are clustered in the high concentration areas, with two located in the desert area where wind-blown crustal material has caused exceedances of the twenty-four hour standard during exceptional events. In downwind areas of the SCAB, a large fraction of particulate is formed in the atmosphere; PM10 reaches maximum levels during late summer through early winter months.

Where both 24 hour PM10 FRM samplers and PM10 FEM continuous analyzers are deployed together, they are sited as collocated for data comparison purposes. The 24 hour FRM PM10 sampler remains the primary analyzer used for attainment purposes.

PM10-2.5

PM10-2.5 (PM Coarse) is required at NCore sites only and is derived from the continuous BAM PM10 and PM2.5 particulate monitors at those sites. The Purpose, Site Type and Scale are similar to the continuous PM10 and PM2.5 instruments from which data is calculated. PM Coarse is currently measured at the Los Angeles (Main St.) and Rubidoux sites and is shown in Table 4.

NITROGEN DIOXIDE (NO2)

The area wide NO2 network consists of 25 sites. These sites are mostly located in areas of highest NO2 concentration. The Near Road monitoring network consists of two sites which began in 2014 and two additional to begin January 1, 2015 which are located adjacent to the most heavily traveled roadways identified in the basin. The spatial distribution of NO2 monitors is shown in Figure 3 in Appendix A and minimum monitoring requirements are shown in Table 19. Additionally, the Regional Administrator identified 40 NO2 sites nationwide with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The Regional Administrator in collaboration with SCAQMD indentified the Los Angeles (Main), Long Beach (North) and San Bernardino sites from the existing area-wide monitoring network to meet this requirement (58.10[a][5]). Review of 1992 through 2012 NO2 data shows the State and Federal standards for NO2 were not exceeded. The Long Beach (North) site NO2 was closed on 9/30/2013 due to termination of the lease by owner. SCAQMD is in the process of identifying a new monitoring location and potential consolidation with nearby sites.

On February 9, 2010 EPA promulgated new minimum monitoring requirements for NO2 which require state and local agencies to install near road monitoring sites. On March 7, 2013 EPA revised the Ambient Nitrogen Dioxide Requirements postponing initial near road monitoring site implementation until January 1, 2014 and additional site implementation until January 1, 2015. The plan for the near road network is detailed in the section titled, "Recent or Proposed Modifications to Network."

CARBON MONOXIDE (CO)

Area wide CO monitors measure concentrations at 22 locations and microscale measurements are taken at 3 locations within the SCAQMD 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 2013 shows State and Federal standards for CO were not exceeded.

On August 31, 2011 EPA issued the Final Rule for the Review of National Ambient Air Quality Standards for CO. EPA revised the minimum requirements for CO monitoring by requiring CO monitors to be sited near roads in certain urban areas. EPA requires the collocation of one CO monitor with a near road NO2 monitor in urban areas having populations of 1 million or more. EPA is specifying that required monitors in Core Based Statistical Areas (CBSA) of 2.5 million or more persons be operational by January 1, 2015.

One near road CO monitoring site is required in each of the Los Angeles-Long Beach-Santa Ana MSA\CBSA (Code 31100) and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) areas. Near road CO monitoring is to be implemented concurrently with the near road NO2 monitoring. The minimum monitoring requirements are shown in Table 21. The plan for the near road network is detailed in the section titled, "Recent or Proposed Modifications to Network."

SULFUR DIOXIDE (SO2)

SO2 monitors are located at 7 sites. Figure 5 in Appendix A shows the spatial distribution of the sites. Most SO2 emissions come from Federal transportation sources such as marine vessels. The monitors are clustered mostly in the areas where these sources are located.

On June 22, 2010 EPA strengthened the SO2 National Ambient Air Quality Standard (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 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 5. PWEI Calculation and Minimum Required SO2

CBSA	Population Estimate	NEI SO2 Emmissions	PWEI Value	Minimum Required SO2
31080	13,131,431	12,062.81	158,402	2
40140	4,380,878	2,316.73	10,149	1

SCAQMD exceeds the minimum requirement for SO2 monitors; the Federal standard has not been exceeded for nearly 33 years.

PARTICULATE LEAD

Total Suspected Particulate (TSP) Pb measurements are collected at 13 sites as part of the network; 4 of the sites are Source Impact for Pb, and the remaining 9 sites measure ambient Pb and selected ions such as sulfates (SO4).

In 1990, the EPA requested that the SCAQMD collect ambient air particulate samples near several large Pb handling (battery recycling) facilities. Long-term source impacted monitoring began in 1991. A facility in the City of Industry exceeded the Federal ambient particulate Pb standard during the second quarter of Fiscal Year 1991-92. Pb monitoring at a facility in the City of Torrance ended in 1993 when measurements were consistently below the ambient standard. Sampling ended at a facility in the City of Commerce in 2006 when the business was closed. Out of the two facilities currently being monitored, the facility in the City of Vernon exceeded the old Federal ambient particulate Pb standard (1.5 ug/m3 quarterly) during the first quarter of 2008; the other facility was found to remain below this level.

The Rehrig (Exide) microscale site measures the highest Pb concentrations in the monitoring network. Upon review of data (2010-2012) Rehrig (Exide) Pb monitoring site measured 0.46 ug/m3 as a 3 month rolling average. The Rehrig (Exide) monitoring location has been designated as a collocated monitoring location for the source oriented Pb monitoring network along with the Los Angeles, and Riverside sites. Collocation requirements are shown in Table 24. Previously, the Long Beach (North) site was designated as a collocated site for Pb but on 9/30/2013 the lease was terminated at the owners request. The SCAQMD continues to exceed the minimum monitoring requirements with the closure of the Long Beach (North) Pb site. The spatial distribution of these sites is shown in Figure 6 in Appendix A.

On November 12, 2008, the EPA issued final revisions to the NAAQS for Pb. Network design requirements included monitoring for sources of Pb (source oriented monitoring) and urban Pb monitoring (non-source oriented). To meet this requirement, a source oriented site was established on January 1, 2010 at the Van Nuys Airport and monitoring continues at the sites surrounding the Exide (Vernon), Quemetco (Industry), and the Trojan Battery facilities. Existing urban Pb monitoring conducted at Compton, LAX Hastings, Los Angeles (Main), Pico Rivera, Riverside Magnolia, Rubidoux, San Bernardino, South Long Beach, and Upland exceed the minimum monitoring requirements.

The final rule for Pb went into effect on January 26, 2011. In the final rule the Van Nuys Airport was no longer included on the list of airports where Pb monitoring was required, and a more recent emissions inventory showed Pb emissions less than 1 ton per year. The landowner advised SCAQMD the lease would not be renewed at the end of the three year contract period. Data review from the Van Nuys Airport Pb site showed no exceedances of the three month rolling average during the monitoring period. In consultation EPA the site was discontinued on June 4, 2013 based upon conditions cited in 40 CFR 58 Appendix D 4.5. Official notification of site closure for Van Nuys is to be submitted to EPA separately from the ANP.

Previous NEI data (2008) showed the Long Beach Airport, Daugherty Field just over the requirement for Pb source monitoring at 1.02528004 tpy. Since then, the most recent data published (NEI 2011, http://www.epa.gov/ttnchie1/net/2011inventory.html) indicates Pb emissions have dropped below the requirement for Pb source monitoring at 0.80 tpy. As part of the MATES IV program, SCAQMD plans to conduct a preliminary study to determine the need for long term Pb source monitoring at the Long Beach Airport. A determination will be made in consultation with EPA Region IX on the need for long term monitoring at the time of the 5 year network assessment in 2015.

Photochemical Assessment Monitoring Stations

The Photochemical Assessment Monitoring Stations (PAMS) network was initiated in June 1994 at Pico Rivera and Upland. During 1995 sites were established at Banning and

Azusa to determine speciated hydrocarbon O3 precursor compounds in ambient air. PAMS monitoring at Hawthorne commenced in June 1997 and the Burbank station became a PAMS site in July 1997. In May 2001, the Santa Clarita location was established as a PAMS site. In April 2004, the Hawthorne site was replaced by LAX Hastings, due to the end of a property lease. In August 2005, the Pico Rivera station moved to a new location one half mile south of the previous site, also due to the end of the property lease.

On October 17, 2006, the EPA issued final amendments to PAMS monitoring requirements in 40 CFR § 58. The changes made to the rule were to implement recommendations made by the PAMS workgroup formed to assess the program. The workgroup recommended changes be made to site type and monitoring objectives. During September 2008, a report from the EPA PAMS network assessment project workgroup was issued. The objectives of the workgroup were to assess how well the current PAMS network was meeting monitoring objectives, determine which sites are most useful for meeting objectives, identify potentially redundant, ineffective, or unnecessary sites, and to assess other enhanced O3 monitoring activities that may prove useful.

To address regulatory changes, site-specific observations from the PAMS network assessment project, and potential synergies between programs, SCAQMD made the following changes in June 2009 to the PAMS monitoring network:

- Burbank was reclassified from Type 2/1 to Type 2. This change addressed the National PAMS Network Assessment observation that Burbank should be reclassified to a Type 2 precursor site. The recommendation is consistent with the heavily urbanized/industrialized area, which is impacted by high levels of O3 precursor emissions.
- Santa Clarita was reclassified as Type 3 from Type 2. Although the National PAMS Network Assessment observed that Santa Clarita was consistent with a Type 2 site, recent data was more consistent with a Type 3 maximum O3 concentration site rather than a Type 2 O3 precursor site.
- Banning was relocated to Los Angeles (Main). The National PAMS Network Assessment observed that Banning had the lowest O3 concentrations of all the Type 2 sites and should be reclassified to a Type 3 or 4 site. Instead, to create synergies between programs, SCAQMD relocated the Banning PAMS site to the Los Angeles (Main) site as Type 2. This satisfies the EPA recommendation for use of the same monitoring platform and equipment to meet the objectives of multiple programs. Los Angeles (Main) is also a National Air Toxics Trends Station (NATTS), a National Core-Multi-pollutant Monitoring Station (NCore), and a Speciation Trends Network (STN) site.
- Azusa was reclassified from Type 3 to Type 2. This proposed change addresses the National PAMS Network Assessment observation that Azusa has high Volatile Organic Compounds (VOC) and Oxides of Nitrogen (NOX) concentrations, with lower O3 concentrations. The site now more closely resembles a Type 2 O3 precursor site.

- Upland was relocated to the Rubidoux site. The National PAMS Network Assessment observed that Upland was no longer consistent with a Type 4 site and recommended reclassification to Type 3. SCAQMD relocated the Upland PAMS site to Rubidoux as a Type 3 location where synergies can be created among the NATTS, NCore, and the STN programs.
- LAX Hastings and Pico Rivera remained unchanged.

Currently, manual VOC canisters are in operation at the Azusa, LAX Hastings, Rubidoux, Los Angeles (Main), and Santa Clarita air monitoring stations. During the intensive season from July 1 until September 30, VOC canisters are run every three hours for a period of twenty-four hours every 3rd day and a twenty-four hour sample is run every 6th day. During the non-intensive season from October 1 through June 30, twenty-four hour VOC canister samples are run every 6th day.

At Los Angeles (Main) and Santa Clarita air monitoring stations, during the intensive season from July 1 until September 30, carbonyl samples are run every three hours for a period of twenty-four hours every 3rd day and a twenty-four hour sample is run every 6th day. During the non-intensive season from October 1 through June 30, twenty-four hour carbonyl samples are run every 6th day.

Automated Gas Chromatography Flame Ionization Detector (GC\FID) VOC systems are in operation at the Pico Rivera and Burbank air monitoring stations. During the intensive sampling season from July 1 until September 30, the GC\FID is run to collect daily 3-hour samples and twenty-four hour VOC canisters are run every 6th day. Like the other PAMS sites, carbonyl samples are run every three hours with one additional twenty-four hour sample run every 6th day. During the non-intensive season from October 1 through June 30, the GC/FID is idle and twenty-four hour VOC canister samples are run every 6th day and twenty-four hour carbonyl samples are run every 6th day. Rubidoux is a collocated site for VOC canister sampling and Pico Rivera is a collocated site for VOC canister and carbonyl sampling.

During April 2010, a system audit was conducted by the EPA, which assessed the SCAQMD NATTS/PAMS programs. The audit found no major issues with the operation of the network but recommended implementation of blanking and low level concentration challenge samples for the NATTS and PAMS programs. Blanking was implemented in June, 2010 and low level challenge samples were implemented during October, 2010 and are completed annually.

The first SCAQMD upper air meteorological monitoring station was established at Los Angeles International Airport (LAX) in 1994. Subsequent upper air stations include Ontario International Airport (ONT) installed in 1996, Moreno Valley (MOV) installed in 2001 at the Moreno Valley Municipal Water Treatment Plant in Riverside County, Irvine (IRV) installed at the University of California Research and Extension Center in 2006, and Pacoima at Whiteman Airport (WHP) installed during May of 2007. The upper air stations use a combination of remote sensing and surface meteorological instrumentation, including the Scintec (formerly Radian/URS and Vaisala) LAP-3000 radar wind profiler with a Radio Acoustic Sounding System (RASS), the Atmospheric Systems Corporation (formerly AeroVironment Inc.) mini Sodar acoustic wind profiler, and tower-mounted meteorological measurements of wind, pressure, temperature, relative humidity, solar radiation, and ultraviolet radiation. Due to the age of the LAX upper air instrumentation and costly component failures, SCAQMD has replaced the LAX radar wind profiler instrumentation with that from Whiteman Airport. Surface meteorology and mini-Sodar instruments are still operational at the Whiteman Airport upper air station.

The PAMS network monitoring objectives and requirements are summarized in Table 6, Table 23 and Figure 7 in Appendix A shows the distribution of the PAMS network.

TABLE 6. PAMS Network

			July 1 to September 30		October 1 to June 30		
Site Type	**Date Established as PAMS**	**Site / AQS ID#**	**VOC**	**Carbonyl**	**VOC**	**Carbonyl**	**Additional Requirements**
1	04/01/2004	LAX Hastings (replaced Hawthorne)	8 x 3 hr samples every 3rd day and 1 x 24 hr sample every 6th day	No Sampling	1 x 24 hr sample every 6th day	No Sampling	
2	06/01/1995	Azusa	8 x 3 hr samples every 3rd day and 1 x 24 hour sample every 6th day	No Sampling	1 x 24 hr sample every 6th day	No Sampling	No/NOx required
2	07/01/1997	Burbank	Continuous GC and 1 x 24 hr sample every 6th day	8 x 3 hr samples every day and 1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	
2	06/01/2009	Los Angeles (Main)	8 x 3 hr samples every 3rd day and 1 x 24 hour sample every 6th day	8 x 3 hr samples every 3rd day and 1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	Trace level CO required at one type 2 site.
2	08/01/2005	Pico Rivera #2	Continuous GC and 1 x 24 hr sample every 6th day	8 x 3 hr samples every day and 1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	
3	06/09/2009	Rubidoux	8 x 3 hr samples every 3rd day and 1 x 24 hour sample every 6th day	No Sampling	1 x 24 hr sample every 6th day	No Sampling	NOy required
3	05/01/2001	Santa Clarita	8 x 3 hr samples every 3rd day and 1 x 24 hour sample every 6th day	8 x 3 hr samples 3rd day and 1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	1 x 24 hr sample every 6th day	

MONITORING OBJECTIVES:
1 – Upwind and background characterization site (type 1 or 3)
2 – Maximum O3 precursor emissions impact site or above 8 hr zone
3 – Maximum O3 concentration site
4 – Extreme downwind monitoring site

MONITORING REQUIREMENTS:
One type 1 or type 3 site required per area
One type 2 site required per area
No type 4 required

REDUCED REQUIREMENTS:
Speciated VOC only required at type 2 and one other
Carbonyl only required in areas classified as serious
NO/NOx required only at type 2
NOy required at one site per PAMS area (type 1 or 3)

PM2.5

A network of 17 FRM samplers was first implemented in January 1999. On December 26, 1999, a second Coachella Valley PM2.5 sampling site was established in Palm Springs. On June 20, 2003, PM2.5 sampling began at the South Long Beach site. The final addition to the PM2.5 FRM network occurred in October 2005, at the new Mira Loma site. This brings the total number of PM2.5 FRM sampling sites to 20. The sites are depicted in Figure 8, Appendix A and the starting date of each sampler is listed in Table 7. In March 2012, a change was made relocating the collocated PM2.5 monitor from Indio to the Mira Loma (Van Buren) site. This change was made following approval from EPA. Collocated sampling sites include Rubidoux, Central Los Angeles, and Mira Loma (Van Buren). Of the collocated sites, all three are located at sites which exceed Federal NAAQS as shown in Figure 9, and Appendix A, 2012 Air Quality Data Table (http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year).
Manual PM2.5 monitors are neighborhood scale and population exposure representing community wide air quality and multiple sites are listed as population exposure. Because all of SCAQMD is in non-attainment for PM2.5, most of the sites are in areas of poor air quality 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 exceedence of the PM2.5 NAAQS levels, SCAQMD would notify US 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. All sites in the Network using FRM samplers are suitable for comparison against the annual PM2.5 NAAQS.

During April 2009, SCAQMD completed minor changes to the FRM monitoring schedule to enhance Federal Equivalent Method (FEM) Beta Attenuation Monitor (BAM) comparisons. On April, 16th, 2009 the Burbank and Mira Loma (Van Buren) FRM samplers changed to daily sampling from the 1-in-3 day schedule and the Azusa location changed from every day sampling to 1-in-3 day sampling. Daily design value sites are shown in Table 17a as the Burbank and Mira Loma sites. These sites meet the minimum daily monitoring requirement and exceed the minimum NCore 1 in 3 requirement at the Rubidoux and Los Angeles (Main) sites. The remaining sites adhere to the 1 in 3 schedule with the exception of Big Bear which was approved at the inception of the PM2.5 program as a 1 in 6 site. The Federal minimum monitoring requirements for PM2.5 are being met and/or exceeded by the SCAQMD PM2.5 monitoring network.

On January 15, 2013 EPA issued the Final Rule for the Review of National Ambient Air Quality Standards for Particulate Matter. EPA revised the minimum requirements for PM2.5 monitoring by requiring PM2.5 monitors to be sited near roads in certain urban areas. EPA requires the collocation of one PM2.5 monitor with a near road NO2 monitor in urban areas having populations of 1 million or more. EPA is specifying that required monitors in Core Based Statistical Areas (CBSA) of 2.5 million or more persons be operational by January 1, 2015.

One near road PM2.5 monitoring site is required in each of the Los Angeles-Long Beach-Santa Ana MSA\CBSA (Code 31100) and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) areas. Near road PM2.5 monitoring is to be implemented concurrently with the near road NO2 monitoring. The plan for the near road network is detailed in the section titled, "Recent or Proposed Modifications to Network."

Continuous PM2.5 Met One BAMs were first deployed in fiscal year 2001–02. Seventeen monitors are now operating in the SCAB, two at Rubidoux (FEM & Non FEM BAM), and one each at Anaheim, Los Angeles, South Long Beach, Burbank, Mira Loma (Van Buren), and Banning sites. In January 2006, two additional samplers were added at Lake Elsinore and Glendora as part of the Children's Health Study. As proposed in the 2008 network plan, FEM BAM monitors were deployed during October 2008, at the Anaheim, Burbank, Long Beach (North), Los Angeles (Main), Mira Loma (Van Buren), Rubidoux, and South Long Beach sites. Relocated NON-FEM BAM samplers were installed at Reseda, Riverside Magnolia, Santa Clarita, Crestline, and Upland. A NON-FEM BAM was collocated with a FEM BAM at Rubidoux. An additional NON-FEM BAM sampler was deployed at Temecula during July, 2010. In 2011, all FEM BAMs have been reclassified from special purpose monitors to SLAMS under 40 CFR § 58.20. In 2013, SCAQMD conducted a PM2.5 Continuous Monitor Comparability Assessment in accordance with the PM NAAQS rule published on January 15th, 2013 (78 FR 3086). Specific to the provisions detailed in §58.10 (b)(13) and §58.11 (e), the assessment results indicate that all of the SCAQMD PM2.5 Continuous Monitors do not meet the criteria to be compared against the NAAQS. Thus, SCAQMD requested a waiver to exclude PM2.5 continuous monitor data from NAAQS comparison. Meanwhile, SCAQMD is conducting comparison studies of newer technology to determine their ability to meet the criteria to be compared against the NAAQS. At such time when the assessment indicates that the FEM monitors are within the acceptance criteria, then U.S. EPA will be notified of the results and the AQS parameters will be changed to indicate that the data will be eligible for comparison to the NAAQS upon U.S. EPA approval.

Coarse particulate matter measurements (PM10-2.5) are required at NCore sites. To meet this requirement SCAQMD measures this value utilizing the continuous BAM monitors at the Los Angeles (Main) and Rubidoux air monitoring sites. These monitors are shown in Table 4.

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 if the FEM analyzer meets the acceptance criteria under 78 FR 3086.

TABLE 7. Manual $PM_{2.5}$ FRM Monitoring Stations Assigned Site Numbers

Location	Site Code	ARB No.	AQS No.	Start Date	Schedule
Anaheim	ANAH	30178	060590007	01/03/99	Daily
Azusa	AZUS	70060	060370002	01/04/99	1-in-3
Big Bear	BGBR	36001	060718001	02/08/99	1-in-6
Burbank	BURK	70069	060371002	01/21/99	Daily
Compton	COMP	70112	060371302	11/08	1-in-3
Fontana	FONT	36197	060712002	01/03/99	1-in-3
Indio	INDI	33157	060652002	01/30/99	1-in-3
Long Beach (North) [1]	LGBH	70072	060374002	01/03/99	Daily
Los Angeles “A” (Main St.)	CELA	70087	060371103	01/03/99	Daily
Los Angeles “B” (Main St.)	CELA	70087	060371103	01/06/99	1-in-6
Mira Loma (Van Buren) “A”	MRLM	33165	060658005	11/09/05	Daily
Mira Loma (Van Buren) “B”	MRLM	33165	060658005	03/08/12	1-in-6
Mission Viejo	MSVJ	30002	060592022	06/15/99	1-in-3
Ontario Fire Station	ONFS	36025	060710025	01/03/99	1-in-3
Palm Springs	PLSP	33137	060655001	12/26/99	1-in-3
Pasadena	PASA	70088	060372005	03/04/99	1-in-3
Pico Rivera #2	PICO	70185	060371602	09/12/05	1-in-3
Reseda	RESE	70074	060371201	01/24/99	1-in-3
Riverside	RIVM	33146	060651003	01/06/99	1-in-3
Rubidoux “A”	RIVR	33144	060658001	01/03/99	Daily
Rubidoux “B”	RIVR	33144	060658001	01/03/99	1-in-6
San Bernardino	SNBO	36203	060719004	01/03/99	1-in-3
South Long Beach	SLGB	70110	060374004	06/20/03	Daily

[1] Some pollutants were discontinued at Long Beach (North) on 9/30/2013 due to termination of lease

FRM PM2.5 sampler remains the primary analyzer used for attainment purposes and continuous analyzers are designated as audit samplers unless 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.

PM2.5 speciation sampling is also a part of the SCAQMD PM2.5 program. Collocated STN and one SCAQMD Met One SASS PM2.5 samplers were deployed in March 2001 at Rubidoux. An additional STN and collocated SCAQMD SASS samplers were deployed at Central Los Angeles in 2002. In 2003, SCAQMD SASS PM2.5 speciation samplers were installed at Fontana and Anaheim air monitoring sites. Analysis of the filters from the ambient network SASS samplers are being conducted at SCAQMD’s laboratory. The STN filters are shipped to Research Triangle Institute (RTI) for analysis. This approach has the concurrence of CARB and EPA, Region IX.

On December 14, 2012 EPA revised NAAQS for PM2.5. As part of the revision EPA updated monitoring requirements for PM2.5 including the addition of monitoring near heavily traveled roads in large urban areas. Specifically, EPA is requiring the collocation of one PM2.5 monitor with a near road NO2 or CO monitor in urban areas having populations of 1 million or more. EPA is specifying that monitors required in CBSAs of 2.5 million or more persons are to be operational by January 1, 2015. One near road PM2.5 monitoring site is required in each of the Los Angeles-Long Beach-Anaheim, CA MSA\CBSA (Code 31080) and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) areas. Sites are tentatively proposed on Route 60 in the City of Ontario and on Route 710 in the City of Long Beach. Both sites are to be operational by January 1, 2015.

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. SCAQMD has conducted several air toxics measurement campaigns in the past, which demonstrated the variety and spatial distribution of air toxics sources across SCAB. A single air toxics measurement site cannot reflect the levels and trends of air toxics throughout the SCAB. For this reason, two NATTS sites are used to characterize the SCAB'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 at 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) and Rubidoux air monitoring sites. During April 2010, a system audit was conducted by the EPA, which assessed the SCAQMD NATTS program. The audit found no major issues with the operation of the network but recommended implementation of blanking and low level concentration challenge samples for the NATTS and PAMS programs. Blanking was implemented in June, 2010 and low level challenge samples were implemented during October, 2010 and completed annually.

NCore

NCore monitoring rules required that SCAQMD make NCore sites operational by January 1st, 2011. To meet this goal, SCAQMD installed trace level analyzers for CO, NOY and SO2 at the Rubidoux and Central Los Angeles sites. Continuous PM10 and PM2.5 BAM are utilized for PM10-PM2.5 measurements at both sites. Final calibrations were completed at the Rubidoux site January, 2011 and at the Central Los Angeles during May, 2011. Both the Los Angeles and Rubidoux sites are NATTS and PAMS monitoring locations.

Special Programs

Special monitoring programs are conducted for rule compliance purposes, to characterize the levels of toxic air contaminants and other criteria pollutants in sub-regional areas or communities in the SCAB, or to support modeling and planning efforts. The following is a list of special monitoring programs that were active during the past year. Note that this is being provided for informational purposes only.

MATES IV

The SCAB is a highly urbanized area home to about seventeen million people who own and operate about eleven million motor vehicles, and contains some of the highest concentrations of industrial and commercial operations in the country. In 1986, SCAQMD conducted the first MATES study to determine the SCAB-wide risks associated with major airborne carcinogens. At the time, the state of technology was such that only ten known air toxic compounds could be analyzed. In 1998, a second MATES study (MATES II) was conducted; MATES II included a monitoring program of 40 known air toxic compounds, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize health risks from hazardous air pollutants. In April 2004, the SCAQMD conducted the third MATES study (MATES III) to assess the ambient levels of airborne compounds linked to adverse health effects in humans. And in June, 2012 SCAQMD began the MATES IV study.

The MATES IV Study included a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin. The Micro-Scale component of the study will continue to focus on the carcinogenic risk from exposure to air toxics but will not estimate mortality or other health effects from particulate exposures. A focus of MATES IV is the inclusion of measurements of ultrafine particle concentrations. In addition, shorter-term measurements are being conducted at various locations to assess localized impacts of combustion sources. The focus of these measurements will be on assessing the exposures to ultrafine particles and black carbon very near sources such as airports, freeways, rail yards, busy intersections, and warehouse operations.

The goal of MATES IV is to enhance the spatial resolution of previous studies by characterizing the ambient concentration of selected toxic air compounds in communities with varying land-type usage, such as residential, industrial, and commercial, as well as gradients from source areas downwind to receptor areas.

For trend analysis the MATES IV study utilized the same ten fixed monitoring sites used in the MATES III study. These monitoring locations are the Anaheim, Burbank, Compton, Fontana, Huntington Park, North Long Beach, LA Main Street, Pico Rivera, Rubidoux, and West Long Beach monitoring sites. As of June 2013 monitoring at these ten fixed sites has been completed. MATES IV added Ultra Fine Particulate (UFP) and Black Carbon (BC) continuous measurements.

The Micro-Scale component to the MATES IV study utilizes mobile monitoring platforms deployed for short term measurements of selected compounds near sources such as airports, freeways, rail yards, busy intersections, and warehouse operations.

Fugitive Dust Study

In support of SCAQMD Rule 403 - Fugitive Dust, SSI PM10 samplers are deployed on an episodic basis upwind and downwind of potential sources as required under Rule 403. Since 2003, periodic sampling has been conducted around gravel quarries and other industries which seem to be producing large volumes of dust.

Hexavalent Chrome

The SCAQMD has an ongoing program to collect ambient hexavalent chromium samples in the vicinity of several chrome plating and cement production facilities located throughout the SCAB. Monitoring continues at Newport Beach, Riverside, and other locations throughout the SCAQMD jurisdiction.

College of the Desert

Because exceedances of the PM10 standard have been recorded at the Torres-Martinez (Indian Reservation) station, SCAQMD conducted an independent monitoring study to evaluate the spatial representativeness of such measurements. Continuous PM10 measurements were collected at "College of the Desert" in Mecca from December 2010 to May 2014. Currently the College of the Desert monitor is being relocated to a new Coachella Valley monitoring station located at Saul Martinez Elementary School in Mecca.

GERDAU-TAMCO

GERDAU North America acquired the TAMCO Rancho Cucamonga steel mini mill in October, 2010. In 2012 Environ Corp. was retained to perform an environmental audit and found discrepancies in reported emissions. Environ found that SOx emissions were not accurately reported prior to 2011, NOx emissions were not accurately being measured and Pb emissions may contribute to an exceedence of the NAAQS. SCAQMD conducted inspections of the facility to address issues and continues monitoring for Pb, Cr+6, and other metals at the facility. If results of the monitoring effort show TAMCO as a source of Pb that could contribute to an exceedence of the NAAQS, it will be added to the source impact Pb monitoring network.

Salton Sea Monitoring

On Sunday September 9, 2012, a strong thunderstorm over the Salton Sea caused odors to be released and transported to the northwest, across the Coachella Valley and through the Banning Pass into the SCAB. The odors also crossed through the mountain passes west of the Salton Sea and into the Temecula Valley. The following day, SCAQMD received over 235 complaints of sulfur and rotten egg type odors

As the Salton Sea recedes, the potential exists for more of these large-scale odor events to occur. SCAQMD has installed air monitors at Saul Martinez Elementary School and the Imperial Irrigation District's Torrez-Martinez site to monitor the type of expected nuisance pollutants which are released from the Salton Sea. The primary objective of this monitoring network is to place monitoring resources at a lakeside location where peak hydrogen sulfide concentrations are expected to occur. The monitoring sites will provide data that can be used to assess population exposures in case of odor events and for comparison to the state standard for hydrogen sulfide.

As the Salton Sea is projected to recede, these sites could be enhanced for monitoring the predicted particulate matter (PM) emissions from the Salton Sea area that may influence the South Coast Air Basin PM levels.

AllenCO

AllenCO is an oil field and gas production facility located in the City of Los Angeles surrounded by residences including low income housing units, F.D. Lanterman high school, and Mount Saint Mary's College. For several years SCAQMD Inspectors have responded to numerous odor complaints from the local community and suspects Allen CO to be the source of these odors. In October 2013 the SCAQMD initiated monitoring at sites around the AllenCO facility. At Mt St Mary's College regularly scheduled VOC samples are collected, and continuous Non-Methane Hydrocarbon measurements are also being collected. On the roof of the low income housing building across the street from AllenCo, there is a remote controlled sampler capable of collecting a VOC grab sample should an odor complaint be called into the SCAQMD odor complaint line. In November 2013 AllenCo temporarily shut down operations to repair issues which it believes were the cause of the previous odor complaints.

Recent or Proposed Modifications to Network

Near Roadway NO2 Monitoring

On February 9, 2010, U.S. EPA promulgated new minimum monitoring requirements for the NO2 monitoring network in support of newly revised 1-hour NO2 NAAQS and the retained annual NAAQS. In the new monitoring requirements, State and Local air monitoring agencies are required to install near-road NO2 monitoring stations at locations where peak hourly NO2 concentrations are expected to occur within the near-road environment in larger urban areas. On March 7, 2013 EPA revised the new monitoring requirements from the 2010 NO2 NAAQS revision, delaying implementation of the first phase of the near road network to January 1, 2014 and the second phase to January 1, 2015. As part of the implementation, State and local air agencies are required to consider traffic volumes, fleet mix, roadway design, traffic congestion patterns, local terrain or topography, and meteorology in determining where a required near-road NO2 monitor should be placed. In addition to those required considerations, there are other factors that impact the selection and implementation of a near-road monitoring station including satisfying siting criteria, site logistics (e.g., gaining access to property and safety), and population exposure.

The near roadway grant guidance directed implementation of near road sites be conducted in phases. The first of the Phase I sites became operational on January 1, 2014 in Anaheim adjacent to the 5 freeway (FE AADT #3, 2013). The Second Phase I site is located in Ontario adjacent to Interstate 10/Interstate 15 (FE AADT #11, 2013) and is expected to be operational by July 1, 2014. Phase II sites are to be operational by January 1, 2015. Phase II sites are currently under consideration along Route 710 in Long Beach (FE AADT 22, 2014) and along Route 60 in Ontario (FE AADT #9, 2014). Each phase consists of one site selected from each of the Los Angeles – Long Beach – Anaheim (Metropolitan Statistical Area (MSA) and the Riverside – San Bernardino – Ontario MSAs.

The primary objective of the near-road NO2 network is to place monitoring resources on near-road locations where peak, ambient NO2 concentrations are expected to occur as a result of on-road mobile source emissions. Monitoring at such a location or locations within a particular urban area will provide data that can be used for comparison to the NAAQS and to assess population exposures for those who live, work, play, go to school, or commute within the near-roadway environment. Population density for SCAQMD is shown in Figure A. The near-road NO2 data will provide a clear means to determine whether or not the NAAQS is being met within the near-road environment throughout a particular urban area. Since near-road NO2 monitoring sites are to be placed at locations with expected peak NO2 concentrations, the target mobile sources and the roads they travel upon are ubiquitous throughout urban areas, these monitoring data may be said to represent the relative worst case population exposures that may be occurring in the near-road environment throughout an urban area over the averaging times of interest.

Minimum monitoring requirements are specified in 40 CFR 58 Appendix D. EPA requires state and local air agencies to operate one near-road NO2 monitor in each Core Based Statistical Area (CBSA) with a population of 500,000 or more persons. Further, those CBSAs with 2,500,000 or more persons, or those CBSAs with one or more roadway segments carrying traffic volumes of 250,000 or more vehicles (as measured by annual average daily traffic [AADT] counts), shall have two near-road NO2 monitors. The process of identifying minimum monitoring requirements is shown in Figure B.

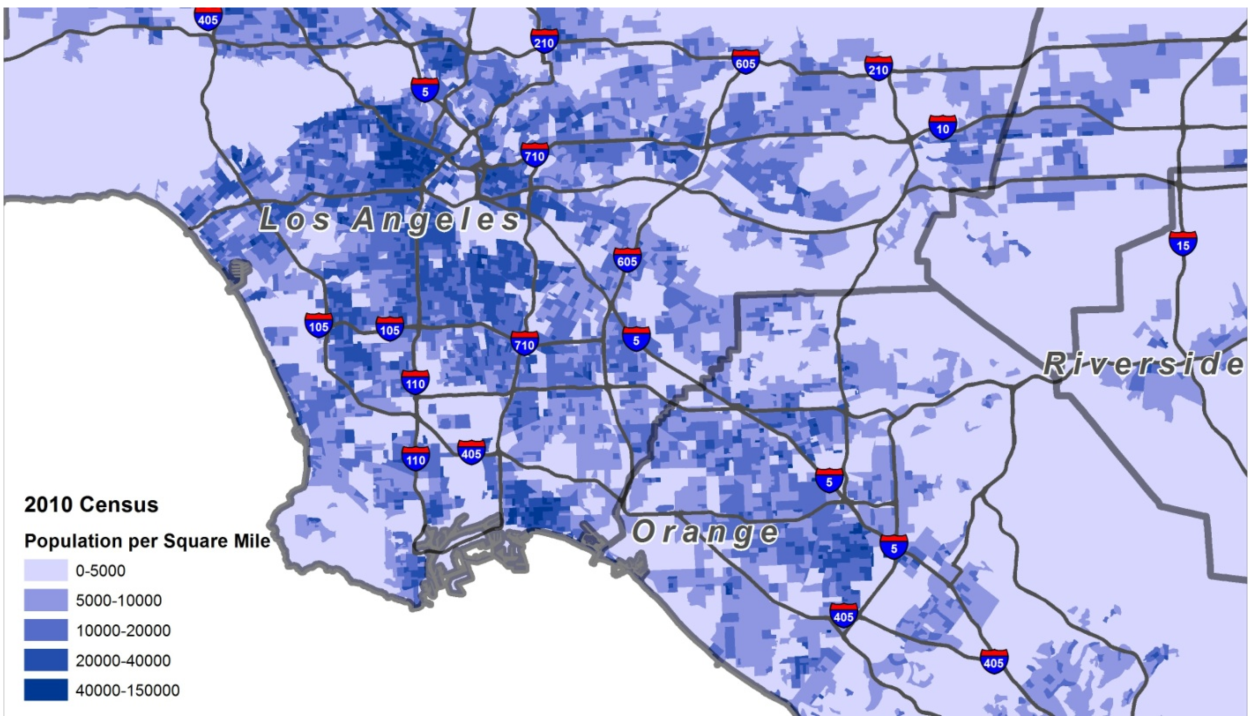

Figure A – SCAQMD Population Density

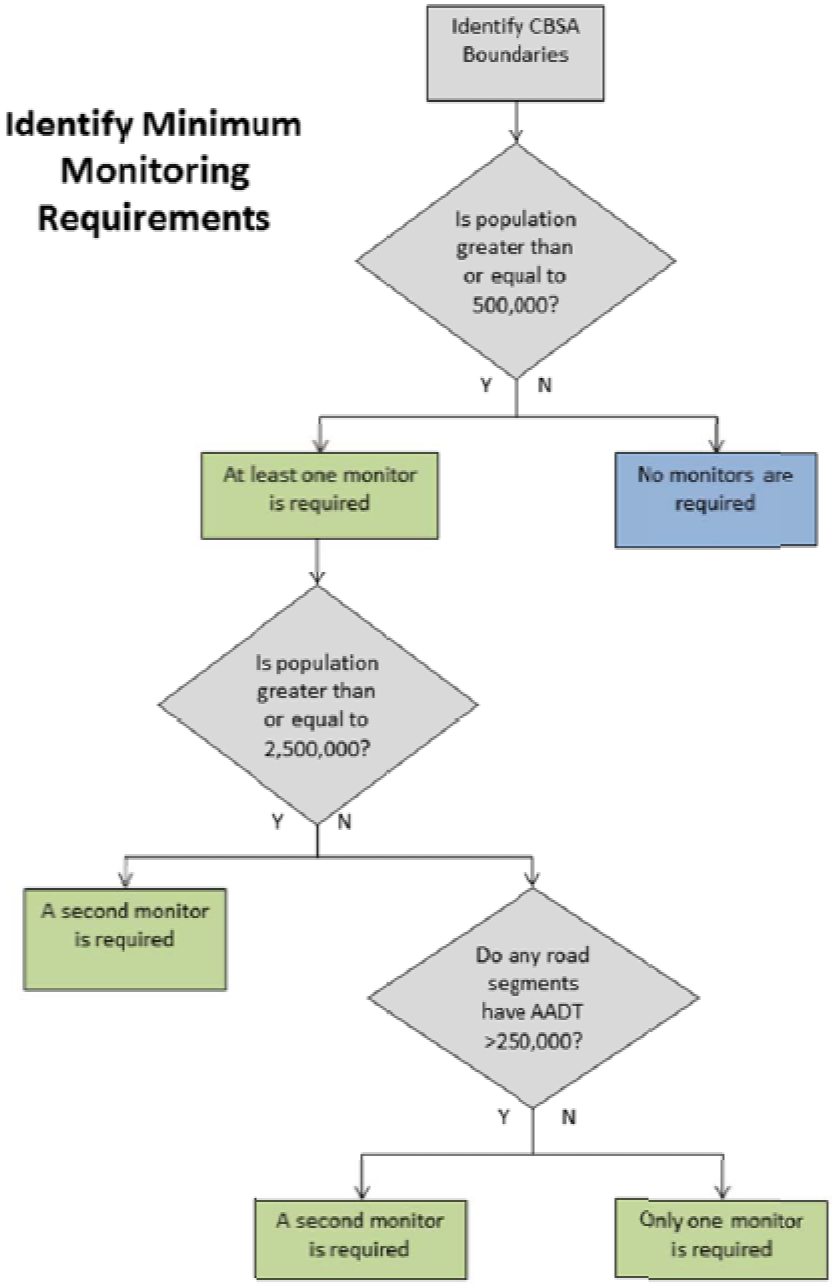

Figure B - Monitoring Requirements

The SCAQMD jurisdictional boundary encompasses two MSAs and two CBSAs whose boundaries and codes mirror those of the MSAs 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 13,131,431 and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) has an estimated population of 4,380,878 according to U.S. Census estimates for 2013. The minimum number of monitors required for near road monitoring is based on MSA\CBSA population and shown in Table 8.

TABLE 8. Minimum Number of Monitors Required Near Road NO2

CBSA	Population Estimate	Highest AADT Segment	Minimum Required Near Road NO2 Sites 2014	Minimum Required Near Road NO2 Sites 2015
31080	13,131,431	396,000	1	1
40140	4,380,878	245,300	1	1

The monitoring site selection process was in accordance with guidance published in the U.S. EPA Near Roadway NO2 Technical Assistance Document (TAD) (June, 2012). The process for ranking candidate road segments is outlined in Figure C.

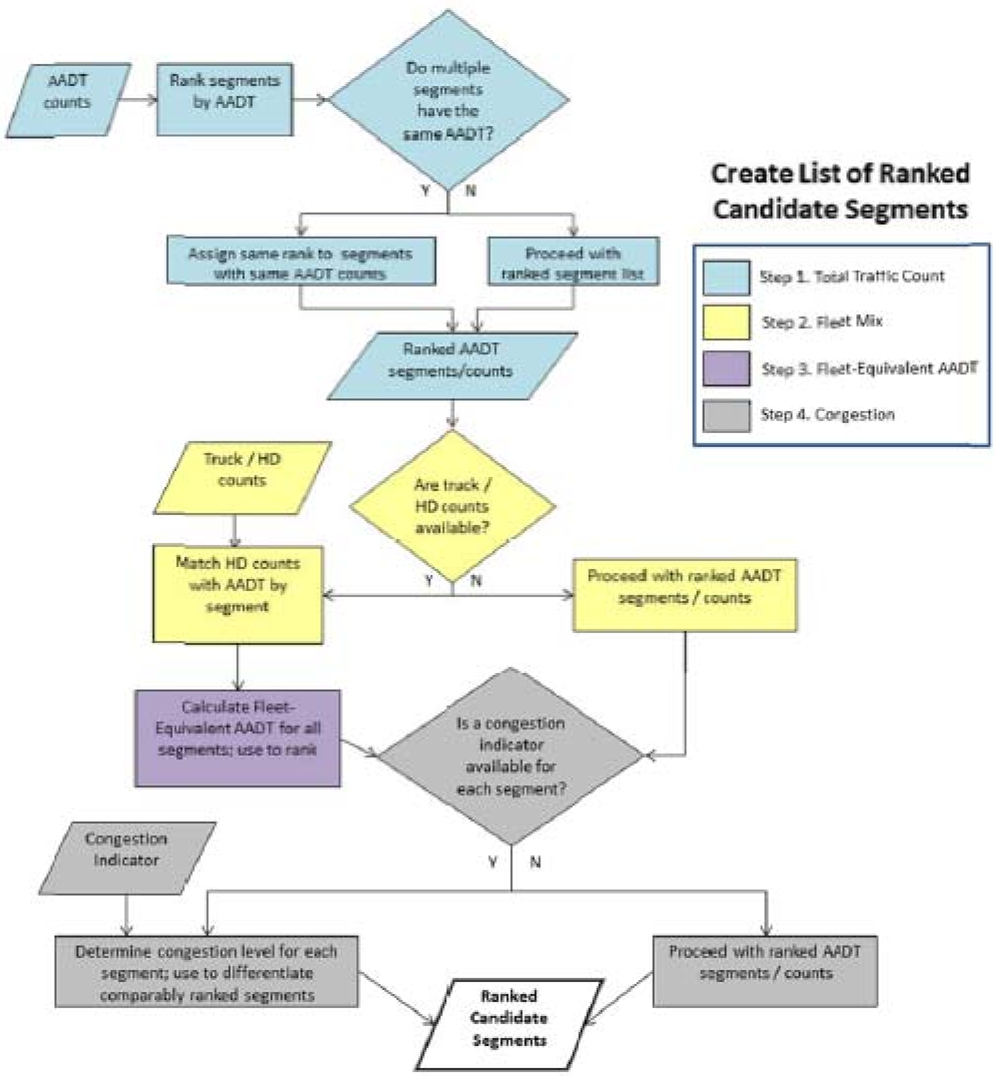

Figure C – Ranking Candidate Road Segments

The candidate road segment ranking process incorporated the following EPA TAD considerations:

FE AADT – A single metric to compare road segments, accounting for AADT and fleet mix (Heavy Duty Vehicles). The Fleet-Equivalent AADT value for each road segment is calculated by the following formula:

(FE) AADT = (AADT – HDc) + (HDm * HDc)

Where AADT is the total traffic volume count for a particular road segment, HDc is the total number of heavy-duty vehicles for a particular road segment, and HDm is a multiplier that represents the heavy-duty to light-duty NOx emission ratio for a particular road segment. An HDm of 17 was used instead of the default national average of 10 based on emissions inventories within the SCAQMD jurisdiction (Air Quality Management Plan, South Coast Air Quality Management District, 2012). The top 50 FE AADT segment candidates are calculated based on the latest (2012) California Department of Transportation AADT counts (http://traffic-counts.dot.ca.gov/) and are shown in Table 9.

TABLE 9. Top Fifty FE AADT Candidate Roadway Segments

FE ADDT Rank	HD Rank	AADT Rank	FE AADT	AADT Total	Total Trucks (HD)	Total Truck %	County	Post mile	Route	Description
1	15	4	754464	348000	25404	7.3	LA	23.56	60	DIAMOND BAR, JCT. RTE. 57
2	1	59	705536	260000	27846	10.71	LA	9.612	605	SANTA FE SPRINGS, JCT. 5
3	2	66	691976	255000	27311	10.71	LA	13.569	605	WHITTIER, JCT. RTE. 72
4	41	3	680560	362000	19910	5.5	ORA	34	5	SANTA ANA, JCT. RTES. 22 & 57
5	5	72	678400	250000	26775	10.71	LA	17.407	605	INDUSTRY, JCT. RTE. 60
6	14	45	674576	266000	25536	9.6	ORA	38.915	5	LINCOLN AVENUE
7	24	20	669968	292000	23623	8.09	LA	7.653	605	NORWALK, JCT. RTE. 105
8	16	50	669504	264000	25344	9.6	ORA	36.258	5	KATELLA AVENUE
9	3	117	656768	222000	27173	12.24	SBD	4.58	60	ONTARIO, JCT. RTE. 83
10	4	118	653800	221000	27050	12.24	SBD	2.366	60	CENTRAL AVENUE
11	17	78	646804	245300	25094	10.23	SBD	9.936	10	ONTARIO, JCT. RTE. 15
12	18	79	646804	245300	25094	10.23	SBD	11.132	10	ETIWANDA AVENUE
13	22	67	638048	254000	24003	9.45	LA	11.711	60	INDUSTRY, JCT. RTE. 605
14	8	120	636424	217000	26214	12.08	SBD	0	60	LOS ANGELES/SAN BERNARINO COUNTY LINE
15	23	64	635304	257000	23644	9.2	ORA	5.258	91	ANAHEIM, STATE COLLEGE BLVD
16	10	121	633488	216000	26093	12.08	LA	29.392	60	POMONA, JCT. RTE. 71,
17	28	31	627616	278000	21851	7.86	LA	44.014	5	LOS ANGELES, JCT. RTE. 210
18	11	125	625736	215000	25671	11.94	SBD	5.855	60	GROVE AVENUE
19	19	109	623760	226000	24860	11	SBD	24.24	10	COLTON, JCT. RTE. 215
20	20	105	621920	230000	24495	10.65	LA	20.428	60	ROWLAND HEIGHTS,
21	52	5	620400	330000	18150	5.5	ORA	30.263	5	TUSTIN, JCT. RTE. 55,
22	6	165	619008	192000	26688	13.9	LA	12.97	710	LONG BEACH, JCT. RTE. 91
23	34	27	613312	280000	20832	7.44	LA	36.358	5	LOS ANGELES, JCT. RTE. 170
24	25	85	608520	243800	22795	9.35	ORA	42.1	5	FULLERTON, JCT. RTE. 91
25	31	51	605296	264000	21331	8.08	ORA	2.615	91	BUENA PARK, JCT. RTE. 39 BEACH BLVD

TABLE 9 (continued). Top Fifty FE AADT Candidate Roadway Segments

FE ADDT Rank	HD Rank	AADT Rank	FE AADT	AADT Total	Total Trucks (HD)	Total Truck %	County	Post mile	Route	Description
26	13	161	603728	194000	25608	13.2	SBD	27.296	10	MOUNTAIN VIEW AVENUE
27	9	175	602640	184000	26165	14.22	LA	10.823	710	LONG BEACH, DEL AMO
28	36	40	599456	268000	20716	7.73	LA	13.094	91	LONG BEACH, CHERRY
29	35	43	598936	267000	20746	7.77	LA	39.361	5	LOS ANGELES, JCT. RTE. 118
30	61	8	591552	316000	17222	5.45	LA	17.17	101	LOS ANGELES, JCT. RTE. 405
31	38	52	590512	264000	20407	7.73	LA	11.681	91	LONG BEACH, JCT. RTE. 710
32	12	179	588112	178000	25632	14.4	LA	9.41	710	LONG BEACH, JCT. RTE. 405
33	40	55	586048	262000	20253	7.73	LA	14.618	91	BELLFLOWER, JCT. RTE. 19
34	47	38	583128	273000	19383	7.1	ORA	3.258	91	FULLERTON, HARBOR
35	27	112	577376	224000	22086	9.86	LA	25.464	60	DIAMOND BAR, JCT. RTE. 57 NORTH
36	44	60	573248	260000	19578	7.53	LA	9.87	110	LOS ANGELES, JCT. RTE. 91
37	65	22	560512	290000	16907	5.83	LA	5.046	605	CERRITOS, JCT. RTE. 91
38	51	54	560088	263000	18568	7.06	LA	36.41	210	DUARTE, JCT. RTE. 605,
39	74	16	559736	299000	16296	5.45	LA	19.99	101	ENCINO AVENUE
40	107	1	558700	377500	11325	3	ORA	20.751	405	JCT. RTE. 22 EAST,
41	29	139	555744	210000	21609	10.29	SBD	13.169	10	FONTANA, CHERRY AVENUE
42	96	7	552120	321000	14445	4.5	ORA	9.187	91	JCT. RTE. 55 SOUTH
43	63	32	551104	278000	17069	6.14	ORA	15.6	57	ANAHEIM, JCT. RTE. 91,
44	32	128	549552	214000	20972	9.8	LA	20.189	605	BALDWIN PARK, JCT. 10
45	108	2	547600	370000	11100	3	ORA	24.044	405	SEAL BEACH, JCT. RTE. 605
46	90	14	545400	303000	15150	5	ORA	11.54	91	PERALTA, JCT. RTE. 90
47	67	36	544728	275000	16858	6.13	LA	41.597	5	LOS ANGELES, JCT. RTE. 405
48	21	200	544360	155000	24335	15.7	RIV	0.491	60	JCT. RTE. 15
49	26	174	541076	185300	22236	12	SBD	29.313	10	ALABAMA STREET OC
50	43	111	539288	225000	19643	8.73	LA	15.692	710	LYNWOOD, JCT. RTE. 105

The process of ranking the roadway segments began with creating a scoring matrix incorporating EPA TAD considerations. The scoring matrix was used as a tool to determine the most suitable location for monitoring by incorporating traffic data and quantifying station siting considerations. FE AADT was weighted a factor of five due to the major role traffic influences near roadway monitoring. Other important factors such as roadway design, distance from roadway, meteorology, roadside structures and terrain were taken into consideration and weighted a factor of one each and are defined as follows:

Roadway Design – Considers monitor placement and can affect pollutant transport and dispersion. The most desirable attributes include a monitoring location at grade with the surrounding terrain and roadway. The least desirable attributes include deep cut-sections significantly below grade or significantly above grade.

Distance from Roadway - Per 40 CFR Part 58 Appendix E: the site should be "As near as practicable to the outside nearest edge of the traffic lanes of the target road segment; but shall not be located at a distance greater than 50 meters, in the horizontal, from the outside nearest edge of the traffic lanes of the target road segment." The TAD recommends the target distance for near-road NO2 monitor probes be within 20 meters of the target road whenever possible.

Meteorology– Can affect pollution transport and dispersion. The most desirable location is relative downwind locations – winds from road to monitor. The least desirable locations are sites upwind of the target road.

Roadside Structures – Considers monitor placement and can affect pollutant transport and dispersion. The most desirable monitoring location will have no barriers present other than low (< 2m in height) safety barriers or guard rails. The least desirable attributes include the presence of sound walls, mature vegetation (high and thick) or obstructive buildings.

Terrain – Can affect pollutant dispersion and local atmospheric stability. The most desirable terrain is flat or gentle terrain, within a valley, or along road grade. The least desirable terrain is along mountain ridges or peaks, hillsides, or other naturally windswept areas.

A scale normalized to 5 was used to rank each candidate segment; the scoring matrix is shown as Table 10.

TABLE 10. Candidate Segment Scoring Matrix

Score	5	3	1	0
FE AADT (Weighted 5x)	Traffic count of the highest ranked FE AADT	Normalized to the highest ranked FE AADT	Normalized to the highest ranked FE AADT	N/A
Roadway Design	At same elevation	Slightly higher elevation	Below grade / Under overpass / On bridge	Design prevents access or accurate representation of roadway.
Distance from Roadway	Less than or equal to 20 m	Normalized distance from 20 m to 50 m	50 m from roadway	>50 m
Meteorology (predominant wind direction)	Downwind	Parallel	Upwind	N/A
Roadside Structures	No barriers (< 2 m)	Some obstruction (small sound barriers sparse low vegetation)	Major obstruction (large sound walls, buildings).	Completely blocked
Terrain	Flat / mildly sloping	Uneven	Mountain ridges, Canyons	Terrain prevents access or accurate representation of roadway

Weighting Values	
FE AADT	5
Roadway Design	1
Distance from Roadway	1
Meteorology	1
Roadside Structures	1
Terrain	1

The top FE AADT sites were surveyed and ranked according to the scoring matrix. Some sites had several locations within the road segment to consider and each location was scored individually as a sub-site. The results are shown for the Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) in Tables 11 and 12.

TABLE 11. Los Angeles-Long Beach-Santa Ana MSA\CBSA

Location	Route 57/60 Diamond Bar			Route 5/605 Santa Fe Springs		Route 605/72 Whittier		Route 5/22/57 Orange		Route 605/60 City of Industry				Route 5/Lincoln Anaheim		Route 605/105 Norwalk		Route 5/Katella Anaheim			Route 60/605 City of Industry				State College Blvd./Route 91 Anaheim	Route 710/91 Long Beach
FE AADT Rank	1			2		3		4		5				6		7		8			13				15	22
FE AADT	754,464			705,536		691,976		680,560		678,400				674,576		669,968		669,504			638,048				635,304	619,008
HD Rank	15			1		2		41		5				14		24		16			22				23	6
HD	25,404			27,846		27,311		19,910		26,775				25,536		23,623		25,344			24,003				23,644	26,668
AADT Rank	4			59		66		3		72				45		20		50			67				64	165
AADT	348,000			260,000		255,000		362,000		250,000				266,000		292,000		264,000			254,000				257,000	192,000
Site	1A	1B	1C	2A	2B	3A	3B	4A	4B	5A	5B	5C	5D	6A	6B	7A	7B	8A	8B	8C	13A	13B	13C	13D	15A	22A
FE AADT Score	5.00	5.00	5.00	4.68	4.68	4.59	4.59	4.51	4.51	4.50	4.50	4.50	4.50	4.47	4.47	4.44	4.44	4.44	4.44	4.44	4.23	4.23	4.23	4.23	4.21	4.10
Roadway Design	4.5	4.0	5.0	4.5	4.5	3.0	5.0	4.0	5.0	5.0	2.0	2.0	4.0	4.0	5.0	1.0	2.0	3.0	3.0	1.0	5.0	2.0	2.0	4.0	1.0	5.0
Distance from Roadway	5.0	5.0	5.0	5.0	2.5	4.0	4.0	1.2	3.6	4.0	3.6	2.6	3.3	3.7	5.0	2.2	0.0	0.0	3.2	2.5	4.0	3.6	2.6	3.3	3.2	5.0
Meteorology	5.0	5.0	1.0	1.0	1.0	3.0	3.5	1.0	3.5	1.0	2.5	5.0	3.0	5.0	5.0	3.0	4.0	4.0	4.0	4.0	1.0	2.5	5.0	3.0	4.0	5.0
Roadside Structures	4.0	4.0	1.0	3.0	5.0	3.0	4.0	4.0	4.0	4.0	1.0	1.0	1.0	5.0	5.0	1.0	1.0	2.5	2.5	2.5	4.0	1.0	1.0	1.0	1.0	5.0
Terrain	3.5	4.0	4.0	4.0	3.0	2.0	5.0	4.0	5.0	5.0	2.0	2.0	3.5	3.0	5.0	4.0	4.0	3.0	3.0	3.0	5.0	2.0	2.0	3.5	3.0	5.0
Sum (Out of 50)	4.70	4.70	4.10	4.09	3.94	3.79	4.44	3.68	4.36	4.15	3.36	3.51	3.73	4.31	4.74	3.34	3.32	3.47	3.79	3.52	4.01	3.22	3.38	3.60	3.32	4.55
Overall Ranking	**2**	**2**	**8**	**9**	**11**	**12**	**4**	**14**	**5**	**7**	**20**	**17**	**13**	**6**	**1**	**21**	**22**	**18**	**12**	**16**	**10**	**23**	**19**	**15**	**22**	**3**

TABLE 12. Riverside-San Bernardino-Ontario MSA\CBSA

Location	Route 60/83 Ontario	Route 60/Central Chino			Route 10/15 Ontario		Route 10/Etiwanda Ontario	Route 60 LA/SB County Line Chino	Route 60/71 Pomona	Grove Ave/Route 60 Ontario
FE AADT Rank	9	10			11		12	14	16	18
FE AADT	656,768	653,800			646,804		646,804	636,424	633,488	625,736
HD Rank	3	4			17		18	8	10	11
HD	27,173	27,050			25,094		25,094	26,214	26,093	25,671
AADT Rank	117	118			78		79	120	121	125
AADT	222,000	221,000			245,300		245,300	217,000	216,000	215,000
Site	9A	10A	10B	10C	11A	11B	12A	14A	16A	18A
FE AADT Score	4.35	4.33	4.33	4.33	4.29	4.29	4.29	4.22	4.20	4.15
Roadway Design	3.0	2.0	2.0	2.0	4.0	3.0	5.0	1.0	1.0	3.0
Distance from Roadway	2.0	3.3	3.3	4.0	0.0	1.7	5.0	2.6	4.0	4.5
Meteorology	3.5	2.5	2.5	3.0	3.0	4.0	5.0	3.0	3.0	4.0
Roadside Structures	2.5	3.0	4.0	3.0	5.0	1.0	5.0	3.0	1.0	4.0
Terrain	3.5	2.0	4.0	4.0	4.0	2.0	5.0	3.0	3.0	4.0
Sum (Out of 50)	3.63	3.45	3.75	3.77	3.74	3.31	4.64	3.37	3.30	4.03
Ranking	**6**	**7**	**4**	**3**	**5**	**9**	**1**	**8**	**10**	**2**

Level of Service (congestion) data is considered to differentiate between two comparatively ranked segments as part of the site selection process. Tables 13, 14 and 15 show the top congested freeways in the Los Angeles, Orange, and the Riverside-San Bernardino-Ontario MSA\CBSA for 2012. As reported by the California Department of Transportation (http://www.dot.ca.gov/hq/traffops/sysmgtpl/MPR/index.htm).

TABLE 13. Top Congested Freeways Los Angeles County

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
I–5	Los Angeles	14,860,558	15,720,370	859,812	6%	1	1
I–405	Los Angeles	11,519,515	12,627,567	1,108,053	10%	2	2
SR–101	Los Angeles	9,918,324	10,567,013	648,689	7%	3	3
SR–60	Los Angeles	9,428,050	10,102,098	674,047	7%	4	4
I–10	Los Angeles	7,082,866	8,258,162	1,175,296	17%	5	5
I–210	Los Angeles	6,962,310	7,933,128	970,818	14%	6	6
I–110	Los Angeles	5,478,239	5,935,385	457,146	8%	7	7
I–605	Los Angeles	4,156,413	4,476,068	319,655	8%	8	8
I–105	Los Angeles	3,796,836	3,413,272	-383,564	-10%	9	9
SR–91	Los Angeles	3,154,442	3,385,568	231,126	7%	10	10
TOTALS		**76,357,552**	**82,418,630**	**6,061,078**	**7.9%**		

TABLE 14. Top Congested Freeways Orange County

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
I–5	Orange	7,728,734	8,098,821	370,087	5%	1	1
I–405	Orange	5,436,501	6,246,872	810,371	15%	2	2
SR–91	Orange	3,657,120	3,235,483	-421,637	-12%	3	3
SR–57	Orange	2,165,512	3,162,837	997,325	46%	5	4
SR–55	Orange	2,356,787	2,735,502	378,715	16%	4	5
SR–22	Orange	1,069,336	1,089,160	19,825	2%	6	6
SR–74	Orange	0	570,927	570,927			7
SR–73	Orange	358,253	410,764	52,511	15%	7	8
SR–241	Orange	202,343	259,877	57,533	28%	8	9
I–605	Orange	174,457	198,783	24,325	14%	9	10
TOTALS		**23,149,042**	**26,009,023**	**2,859,981**	**12.4%**		

TABLE 15. Top Congested Freeways Riverside & San Bernardino Counties

Route	County	Vehicle Hours of Delay at 60 mph		Difference (2012 - 2011)		Rank	
		2011	2012	Absolute	Percent	2011	2012
SR–91	Riverside	3,595,668	3,967,746	372,078	10%	1	1
I–10	San Bernardino	2,426,202	2,107,459	-318,744	-13%	2	2
I–215	Riverside	2,025,724	1,870,771	-154,953	-8%	3	3
I–15	Riverside	1,602,800	1,633,739	30,938	2%	4	4
SR–60	San Bernardino	1,297,909	1,554,445	256,536	20%	5	5
I–15	San Bernardino	1,119,114	1,319,966	200,852	18%	6	6
SR–60	Riverside	888,458	861,892	-26,565	-3%	7	7
I–215	San Bernardino	376,842	582,028	205,186	54%	9	8
I–210	San Bernardino	563,406	503,600	-59,806	-11%	8	9
I–10	Riverside	113,341	155,993	42,652	38%	11	10
TOTALS		**14,009,462**	**14,557,637**	**548,175**	**4%**		

On June 19, 2014, an Annual Network Plan Workshop was conducted at SCAQMD's Diamond Bar office. Information regarding the workshop can be found at the SCAQMD website. SCAQMD staff presented and held a discussion on SCAQMD's progress and announced the first two sites at the Anaheim and the Ontario near road monitoring locations and proposed additional sites at Route 710 in Long Beach and Route 60 in Ontario. Written comments were received in 2013 by the National Defense Resources Council (NRDC) regarding support for placing a site along the 710 freeway for a Los Angeles-Long Beach-Anaheim CBSA near road monitoring location.

Sites are selected based on their ranking in the scoring matrix however there are other considerations involved in the site selection process. These considerations include:

Safety - Near-road monitoring sites must be accessible to station operators in a safe and legal manner, and not pose safety hazards to drivers, pedestrians, or nearby residents. Safety hazards to monitoring site operators include factors which inhibit the safe entrance to or egress from a site and factors that could allow vehicles to encroach upon and damage the site infrastructure.

Accessibility – ability to access the desired location from the property owner or ability to obtain a right of way permit.

Infrastructure – availability of power and data connection at the site.

The projected timeline for installation and operation of the near roadway monitoring sites is as follows:

Date	Activity
January 1, 2014	NO2 Monitoring began at Anaheim near road monitoring site.

May 1, 2014	Identify location of phase 2 monitoring sites; considering required factors prescribed in 40 CFR Part 58 Appendix D and Near Roadway NO2 Technical Assistance Document along with logistics and availability of space at candidate sites.
June 19, 2014	Annual Network Plan Workshop to discuss the Draft 2014 Annual Network Plan and to discuss proposed locations along Route 710 in Long Beach and Route 60 in Ontario.
July 1, 2014	Begin NO2 monitoring at Ontario Etiwanda near road monitoring site.
July, 2014	Obtain permission/permits from respective landowners for additional proposed sites. Estimated June, 2014.
August, 2014	Survey site with construction manager.
	Purchase equipment for monitoring sites. Estimated three months from receipt of grant award.
November, 2014	Site preparation completion – installation of building, foundation, fencing, barriers, meteorological tower, utility and phone lines at proposed sites.
December, 2014	Installation of CO at Ontario Etiwanda and Anaheim near road sites, installation of NO2 and PM2.5 at proposed Route 710 and Route 60 locations, conditioning, calibration and official startup date by January 1, 2015.

Van Nuys Pb Monitoring Site

On November 12, 2008, the EPA issued final revisions to the NAAQS for Pb. Network design requirements included monitoring for sources of Pb (source oriented monitoring) and urban Pb monitoring (non-source oriented). To meet this requirement, a source oriented site was established on January 1, 2010 at the Van Nuys Airport. The final rule for Pb went into effect on January 26, 2011. In the final rule the Van Nuys Airport was no longer included on the list of airports where Pb monitoring was required, and the most recent emissions inventory showed Pb emissions less than 1 ton per year. The landowner advised SCAQMD the lease would not be renewed at the end of the three year contract period. Data review from the Van Nuys Airport Pb site showed no exceedances of the three month rolling average during the monitoring period. In consultation EPA the site was discontinued on June 4, 2013 based upon conditions cited in 40 CFR 58 Appendix D 4.5. Written confirmation of site closure to EPA will follow separately from ANP.

Sulfate Monitoring
SCAQMD has been monitoring TSP sulfate data at the Azusa, Fontana, Pasadena, and West Los Angeles monitoring since the inception of the monitoring sites. In 2003, ARB revised the sulfates monitoring method and standard by deleting the TSP sulfates method, ARB method MLD 033, and replaced it with the existing ARB method and creating a new standard for PM10 sulfates, ARB method MLD 007. ARB conducted a comparison of SCAQMD PM10 and TSP sulfate data for 1999 though 2010 and found good correlation between the two methods. TSP sulfate data was reviewed in consultation with EPA and ARB who determined the need did not exist for continued TSP sulfate monitoring and a waiver was not necessary since the rule no longer exists. TSP sulfate monitors were removed from the Pasadena and West LA monitoring sites early 2013. The TSP sulfate monitors were removed from the Azusa and Fontana sites in June, 2013.

Crestline
SCAQMD has been operating the Crestline site since 1973. The deteriorating state of the shelter along with compromises made to the siting criteria due to obstructions has made it a candidate for site improvement. As part of regular air monitoring station maintenance, a new station shelter has been outfitted to replace the existing trailer during October, 2014.

West LA
SCAQMD has been operating the West LA site since 1983. The deteriorating state of the shelter along with compromises made to the siting criteria due to obstructions has made it a candidate for site improvement. As part of regular air monitoring station maintenance, a new station shelter has been outfitted to replace the existing trailer during FY 2014-15.

Riverside Magnolia
SCAQMD has been operating the Riverside Magnolia site since 1972. The deteriorating state of the building along with compromises made to the siting criteria due to obstructions has made it a candidate for site relocation. SCAQMD in consultation with EPA Region IX has located a candidate site for relocation within one mile of the current location. Once established, a data comparison is proposed to place to assess that data is representative for the area.

South Long Beach
SCAQMD has been operating the South Long Beach station as part of the ambient air-monitoring network. Recent construction of the buildings adjacent to our air monitoring equipment compromises the siting criteria. During the FY 2014-15 a data comparison between a more centralized monitoring location in Long Beach will be undertaken. If comparison of data between the two locations demonstrates some comparability, or if the metropolitan site shows consistently higher levels of PM, the South Long Beach site may be relocated in consultation with EPA Region IX.

Long Beach (Hudson)
The Long Beach (Hudson) site was added as part of the MATES IV study. As part of the action to provide enhanced coverage, the Long Beach (Hudson) site will remain in operation collecting Ozone, Carbon Monoxide, Nitrogen Dioxide, Sulfur Dioxide, and particulate data to represent the Long Beach area.

Long Beach (North)
At the request of the owner, the Long Beach (North) site lease was terminated on September 30, 2013. As a result some pollutants were discontinued while a replacement site is sought. Consideration is being given to consolidation with nearby sites to better represent the Long Beach area and will be addressed in the 5 year network assessment.

Minimum Monitoring Requirements

The SCAQMD jurisdictional boundary encompasses two MSAs and two CBSAs whose boundaries and codes mirror those of the MSAs as defined by the U.S. Office of Management and Budget. Los Angeles-Long Beach-Anaheim MSA\CBSA (Code 31080) has an estimated population of 13,131,431 and the Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) has an estimated population of 4,380,878 according to U.S. Census estimates for 2013. The minimum number of monitors for each pollutant is based on MSA population as described in 40 CFR § 58 Appendix D. The SCAQMD is a Primary Quality Assurance Organization (PQAO) and the network exceeds the minimum monitoring requirements for all criteria pollutants. Details are provided below.

Table 16 Minimum Monitoring Requirements for Ozone.

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

MSA	Counties	Population and Census Year	8-hr Design Value (ppb) DV, Years[1]	Design Value Site (name AQS ID0	Monitors Required	Monitors Active	Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	99, 2011-2013	Santa Clarita 060376012	4	17	0
40140	San Bernardino Riverside	4,380,878 2013	107, 2011-2013	Redlands 060714003	3	13	0

[1]DV Years – The three years over which the design value was calculated.
Monitors required for SIP or Maintenance Plan: 30

Table 17a Minimum Monitoring Requirements for PM2.5 SLAMS (FRM/FEM/ARM)

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

MSA	Counties	Population and Census Year	Annual Design Value [ug/m3], DV & Years[1]	Annual Design Value Site (Name, AQS ID)	Daily Design Value [ug/m3], DV & years	Daily Design Value site (name AQS ID)	# Required SLAMS Monitors	# Active SLAMS Monitors	# Additional SLAMS needed
30180	Los Angeles Orange	13,131,431 2013	12.20, 2011-2013	Burbank 060371002	30.8, 2011-2013	Los Angeles 060371103	3	11	0
40140	San Bernardino Riverside	4,380,878 2013	14.86, 2011-2013	Mira Loma 060658005	36.6, 2011-2013	Mira Loma 060658005	3	9	0

[1]DV Years – The three years over which the design value was calculated.
Monitors required for SIP or Maintenance Plan: 20

Table 17b 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 and Census Year	Annual Design Value [ug/m3], DV & Years[1]	Annual Design Value Site (Name, AQS ID)	Daily Design Value [ug/m3], DV & years	Daily Design Value site (name AQS ID)	# Required Continuous Monitors	# Active Continuous Monitors	# Additional Continuous needed
30180	Los Angeles Orange	13,131,431 2013	19.73, 2011-2013	Los Angeles 060371103	45.9, 2011-2013	Los Angeles 060371103	2	4-FEM 3-Non FEM	0
40140	San Bernardino Riverside	4,380,878 2013	20.47, 2011-2013	Mira Loma 060658005	43.0, 2011-2013	Mira Loma 060658005	2	2-FEM 6-Non FEM	0

[1]DV Years – The three years over which the design value was calculated.
Monitors required for SIP or Maintenance Plan: 15

* Currently all active continuous monitors do not meet acceptance criteria under 78 FR 3086 and is requested to not be compared to the NAAQS.

Table 17c Minimum Monitoring Requirements for Speciated PM2.5 Monitors

(Note: Refer to sections 4.74 of Appendix D of 40 CFR Part 58.)

MSA	Counties	Population and Census Year	Monitors Required[1]	Monitors Active	Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	1	2	0
40140	San Bernardino Riverside	4,380,878 2013	1	2	0

[1]Sites designated as part of the $PM_{2.5}$ Speciation Trends Network (STN).
Monitors required for SIP or Maintenance Plan: 4

Table18 Minimum Monitoring Requirements for PM10

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

MSA	Counties	Population and Census Year	2013 Max Concentration [ug/m3]	Max Concentration site (name AQS ID)	# Required Monitors	# Active Monitors	# Additional Monitors Needed
30180	Los Angeles Orange	13,131,431 2013	77	Anaheim 060590007	4-8 Med Conc	9	0
40140	San Bernardino Riverside	4,380,878 2013	147[1]	Mira Loma 060658005	6-10 High Conc	12	0

Monitors required for SIP or Maintenance Plan: 21

[1]Excluding high concentration at Indio (159 ug/m3, on 8/23/2013.)

Table 19 Minimum Monitoring Requirements for NO2

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

CBSA	Population and Census Year	Max AADT Counts (2012)[1]	# Required Near Road Monitors[2]	#Active Near Road Monitors[3]	#Additional Near Road Monitors Needed[4]	#Required Area Wide Monitors	#Active Area Wide Monitors	#Additional Area wide Monitors Needed
30180	13,131,431 2013	396,000, 2012	1	1	0	1	16	0
40140	4,380,878 2013	245,300, 2012	1	1	0	1	9	0

[1]Max AADT Counts – 2012 is the latest data available from CA DOT

[2]Two required beginning January 1, 2014.

[3]Two required sites to be active by January 1, 2014. See schedule in Recent or Proposed Changes to Network, Near Road Monitoring.

[4]One additional site per CBSA to be active by January 1, 2015. See schedule in Recent or Proposed Changes to Network, Near Road Monitoring.

Monitors required for SIP or Maintenance Plan: 15

Monitors Required for PAMS: 7

EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.3.4: 3

Table 20 Minimum Monitoring Requirements for SO2

(Note: Refer to section 4.4 of Appendix D of 40 CFR Part 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
30180	Los Angeles Orange	6128.19 2013	80,472	0	1	5	0
40140	San Bernardino Riverside	2316.73 2013	10,149	0	1	2	0

[1]Using latest NEI data 2011, available on EPA website: http://www.epa.gov/ttn/chief/net/2011inventory.html
[2]Calculated by multiplying CBSA population and total SO2 and dividing product by one million.
Monitors required for SIP or Maintenance Plan: 7
EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.4.3: 0

Table 21 Minimum Monitoring Requirements for CO

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

CBSA	Population and Census Year	#Required Near Road Monitors[1]	#Active Near Road Monitors[2]	#Required Area Wide Monitors	#Active Area Wide Monitors
30180	13,131,431 2013	0	0	0	17
40140	4,380,878 2013	0	0	0	8

[1]Required beginning January 1, 2015
[2]Required sites to be active by January 1, 2015; to be collocated with near road NO2 sites.
Monitors required for SIP or Maintenance Plan: 25
EPA Regional Administrator-required monitors per 40 CFR 58, Appendix D 4.4.2: 0

Table 22a Minimum Monitoring Requirements for Pb at NCore

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

NCore Site (name, AQS ID)	CBSA	Population and Census Year	# Required Monitors	# Active Monitors	# Additional Monitors Needed
Los Angeles (Main Street) 060371103	30180	13,131,431 2013	1	1	0
Rubidoux 060658001	40140	4,380,878 2013	1	1	0

Table 22b Source Oriented Pb Monitoring (Including Airports)

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

Source Name	Address	Pb Emissions[1] (tons per year)	Emission Inventory Source[2] and Data Year	Max 3-Month Design Value[1] [ug/m3]	Design Value Date(third month, year)	# Required Monitors	# Active Monitors	# Additional Monitors Needed
Long Beach Airport Daugherty Field	4100 E Donald Douglas Dr, Long Beach, CA 90808	0.8	NEI 2011	Unavailable	Unavailable	Pending 5 year assessment	0	1
Van Nuys Airport	16461 Sherman Way, Van Nuys, CA 91406	0.68	NEI 2011	0.06	7; 2012	0	0	0
TAMCO	12459-B Arrow Route, Rancho Cucamonga, CA 91739	0.42	NEI 2011	Unavailable	Unavailable	0	1	0
Exide Technologies	2700 S Indiana St, Vernon, CA 90058	0.1	NEI 2011	0.46	7; 2011	1	2	0
Trojan Battery	9440 Ann St., Santa Fe Springs, CA 90670	0.00556	NEI 2011	0.11	4; 2011	0	1	0
Quemetco Inc.	720 S 7th Ave, City Of Industry, CA 91746	0.0048	NEI 2011	0.11	7; 2010	0	1	0

[1]Consider data from past three years.
[2]Data found at http://www.epa.gov/ttn/chief/net/2011inventory.html (5/1/2014)
Monitors Required for SIP or Maintenance Plan: 5
EPA Regional Administrator required monitors per 40 CFR 58, Appendix D 4.5(C) c: 0

Table 22c Minimum Monitoring Requirements for Pb, Non Source, Non NCore Monitoring

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

CBSA	Population and Census Year	Annual Design Value [ug/m3], DV & Years[1]	# Required Area Wide Monitors	# Active Area Wide Monitors	# Additional Monitors Needed
30180	13,131,431 2013	0.01, 2011-2013	0	5	0
40140	4,380,878 2013	0.01, 2011-2013	0	3	0

[1]DV Years – The three years over which the design value was calculated.

Table 23 Minimum Monitoring Requirements for PAMS

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

Area	Type	# Required PAMS Sites	# Active PAMS Sites	# PAMS Sites Needed
SCAQMD Monitoring Area	1 or 3	1	3	0
	2	1	4	0
	4	0	0	0
	Upper Air Meteorology	1	5	0

Table 24 Collocated Manual PM2.5, PM10, and Non-NCore Pb Networks

(Note: Refer to section 3.2.5, 3.3.5, 3.3.1, and 3.3.4.3 of Appendix A, 40 CFR Part 58.)

Pollutant	Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated Monitors
PM2.5 (RAAS)	780, 120	20	3	3
PM10 (SSI Hi-Vol)	063, 102	21	3	3
Pb (TSP Hi-Vol)	110 (Non Source)	8	1	2
Pb (Tsp Hi-Vol)	110 (Source)	5	1	1

Table 25 Collocated Automated (continuous) PM2.5 Network

(Note: Refer to section 3.2.5 & 3.3.5 of Appendix A, 40 CFR Part 58.)

Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated Monitors[1]
None	0	0	6

[1]No FEM PM2.5 BAMs are listed as primary monitors; therefore no collocation requirement exists but all are collocated with FRM monitors.

Data Submittal and Archiving Requirements

As required in 40 CFR 58.16(a), data is reported via AQS including all ambient air quality data and associated quality assurance data for SO2, CO, O3, NO2, Near Road NO2, NO, NOy, NOX, Pb-TSP mass concentration, Pb-PM10 mass concentration, PM10 mass concentration, PM2.5 mass concentration, filter-based PM2.5 FRM/FEM field blank mass, sampler-generated average daily temperature, and sampler-generated average daily pressure, chemically speciated PM2.5 mass concentration data, PM10-2.5 mass concentration, meteorological data from NCore and PAMS sites, average daily temperature\average daily pressure for Pb sites and metadata records\information as specified by the AQS Data Coding Manual through December 31, 2013.

A data certification letter has been submitted to the EPA Regional Administrator certifying data collected at all SLAMS and at all FRM, FEM, and ARM SPM stations that meet criteria in appendix A, to part 58, for January 1 through December 31, 2013.