SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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

July, 2012

Prepared by

Rene M. Bermudez
Acting Atmospheric Measurements Manager

Table of Contents

	Page
Introduction	1
Public Comments	1
Network Design	1
Special Programs	9
Recent or Proposed Modifications to Network	11
Minimum Monitoring Requirements	14

Appendix A: Network Depiction Maps

- Ozone Monitoring Locations A-1
- PM10 Monitoring Locations A-2
- Nitrogen Dioxide Monitoring Locations A-3
- Carbon Monoxide Monitoring Locations A-4
- Sulfur Dioxide Monitoring Locations A-5
- Source and Ambient Lead Monitoring Locations A-6
- PAMS Monitoring Locations A-7
- PM2.5 Monitoring Locations A-8

Appendix B: Detailed Site Information

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 (South Coast AQMD). It includes a review of actions taken during the 2011-2012 fiscal year and plans for action in the year ahead. This final 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 South Coast AQMD 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, monitoring objectives, 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, South Coast AQMD 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 are 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 comments for at least 30 days prior to submission to the EPA. Hard copies of the final document are made available on July 1, 2012 at the South Coast AQMD's Public Information Desk in Diamond Bar, CA. The document is also available on the South Coast AQMD website at www.aqmd.gov as of July 1, 2012, in the drop down menu under the "Community" and "Air Quality" section of the website. The final document is submitted to the EPA on July 1, 2012 along with any public comments received to fulfill Federal regulatory requirements.

Network Design

The South Coast AQMD operates 35 permanent, multi-pollutant monitoring stations, and 5 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 June 2010 to monitor Ozone (O3) and continuous PM2.5 for the Temecula area. The newest source Pb sites were added in January 2010 as required by EPA regulation. The Mira Loma High School (Jurupa) site was closed in May 2011 and is replaced by the Mira Loma (Van Buren) location. Table 1 provides a list of monitoring locations, the EPA AQS site codes, and the pollutants measured at each site. Table 2 provides the monitoring objective and the spatial scale for each monitor at all sites.

Table 3 describes the monitoring purpose for the monitors at each site. Table 4 describes the monitoring objective, purpose, and spatial scale for continuous particulate analyzers at each site. A new 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 show the progress or lack of 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 monitoring objectives and monitoring purposes as defined by the EPA and given in Tables 2, 3, and 4.

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

OZONE (O3)

The South Coast AQMD 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.

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 Indio, Los Angeles, Ontario, and Rubidoux sites are designated as collocated sites as shown in the minimum monitoring requirements and Table 3. 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.

PM10 continuous analyzers are operated at 14 sampling sites. These real-time devices are capable of making hourly particulate concentration measurements. Table 4 describes the monitor type, monitoring objective, purpose, and spatial scale for continuous particulate analyzers at each site. Figure 2 in Appendix A shows the spatial distribution of the sampling sites. 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 exceedences 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 size-selective inlet manual high volume samplers and PM10 continuous analyzers are deployed together they are sited as collocated for data comparison purposes. The PM10 manual high volume sampler remains the primary analyzer used for attainment purposes and continuous analyzers are designated as audit samplers.

NITROGEN DIOXIDE (NO2)

The NO2 network consists of 25 sites. These sites are mostly located in areas of highest NO2 concentration. The spatial distribution of NO2 monitors is shown in Figure 3 in Appendix A. Review of 1992 through 2011 data indicates that State and Federal standards for NO2 were not exceeded.

CARBON MONOXIDE (CO)

Ambient CO monitors measure concentrations at 25 locations. 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 2011 indicates State and Federal standards for CO were not exceeded.

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 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. 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.

CBSA	Population Estimate	NEI SO2 Emmissions	PWEI Value	Minimum Required SO2
31100	12,874,797	5,695	73,327	1
40140	4,143,113	1,613	6,683	1

South Coast AQMD exceeds the minimum requirement for SO2 monitors; the Federal standard has not been exceeded for nearly 32 years.

PARTICULATE LEAD

Total Suspected Particulate (TSP) Pb measurements are collected at 15 sites as part of the network; 5 of the sites are Source Impact for Pb, and the remaining 10 sites measure ambient Pb, and Sulfates (SO4). There are 4 additional sites which measure SO4 only for a total of 19 TSP particulate sites. The Vernon (Rehrig), Long Beach, Los Angeles, and Riverside sites are designated as collocated sites as shown in the minimum monitoring requirements and Table 3. The spatial distribution of these sites is shown in Figure 6 in Appendix A.

In 1990, the EPA requested that the South Coast AQMD 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. These source-related Pb sites are also depicted in Figure 6.

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 will continue at the sites surrounding the Exide (Vernon), Quemetco (Industry), and the Trojan Battery facilities. Existing urban Pb monitoring conducted at Compton, LAX Hastings, Long Beach (North), 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 lead monitoring was required, and a more recent emissions inventory showed lead emissions less than 1 ton per year. The data from the Van Nuys Airport Pb site is currently under review to determine the need for continued monitoring.

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, South Coast AQMD 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, South Coast AQMD 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. South Coast AQMD 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 South Coast AQMD 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.

The first South Coast AQMD 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 installed at the University of California Research and Extension Center in 2006, and Pacoima at Whiteman Airport during May 2007. The upper air stations use a combination of remote sensing and surface meteorological instrumentation, including the Vaisala (formerly Radian/URS) 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.

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

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 5. 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). All sites in the Network using FRM samplers are suitable for comparison against the annual PM2.5 NAAQS.

During April 2009, South Coast AQMD 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 current 1-in-3 day schedule and the Azusa location changed from every day sampling to 1-in-3 day sampling. Federal minimum monitoring requirements for PM2.5 are still being met and/or exceeded.

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 (collocated), and one each at Anaheim, Los Angeles, South Long Beach, Burbank, Mira Loma (Van Buren), and Banning. 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 BAM sampler was deployed at Temecula during July, 2010. In 2011, all FEM BAMs with the exception of Temecula have been reclassified from special purpose monitors to SLAMS under 40 CFR § 58.20.

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

PM2.5 speciation sampling is also a part of the South Coast AQMD PM2.5 program. Collocated STN and one South Coast AQMD Met One SASS PM2.5 samplers were deployed in March 2001 at Rubidoux. An additional STN and collocated South Coast AQMD SASS samplers were deployed at Central Los Angeles in 2002. In 2003, 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 South Coast AQMD'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.

National Air Toxics Trends Station

The NATTS program was developed to fulfill the need for long-term Hazardous Air Pollutant (HAP) monitoring data of consistent quality nationwide. 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 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 South Coast AQMD 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.

NCore

NCore monitoring rules require that South Coast AQMD make NCore sites operational by January 1st, 2011. To meet this goal, South Coast AQMD installed trace level analyzers for CO, NOY and SO2 at the Rubidoux and Central Los Angeles 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, a highly urbanized area, is home to about sixteen 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. It also has the poorest air quality in the U.S. In 1986, South Coast AQMD 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) represented one of the most comprehensive air toxics measurement programs conducted in an urban environment. 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 South Coast AQMD initiated the third round of MATES (MATES III) to assess the ambient levels of airborne compounds linked to adverse health effects in humans. In June, 2012 South Coast AQMD will begin MATES IV.

The objective of MATES IV is to characterize the ambient air toxic concentrations and potential exposures in the SCAB. This project includes one year of ambient monitoring for air toxics which will have a combination of SCAB-wide measurements and localized studies. The project will develop an updated toxics emissions inventory and conduct air dispersion modeling to estimate ambient levels and the potential health risks of air toxics.

The results of this effort will determine the spatial concentration pattern of important hazardous air pollutants in the SCAB, will assess the effectiveness of current air toxic control measures, provide trend data of air toxic levels, and be used to update and develop appropriate control strategies for reducing exposures to toxics associated with significant public health risks.

MATES IV proposes 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.

MATES IV monitoring sites will utilize MATES III sites for trend analysis. There are ten fixed sites operating on a one-in-six day schedule for twenty-four hours. Monitoring locations include the Anaheim, Burbank, Compton, Fontana, Huntington Park, North Long Beach, LA Main Street, Pico Rivera, Rubidoux, and West Long Beach areas. MATES IV will add Ultra Fine Particulate (UFP) and Black Carbon (BC) continuous measurements. Mobile monitoring platforms are to be deployed for short term deployments at six to eight sites to include communities with varying land type usage.

Fugitive Dust Study
In support of South Coast AQMD 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 South Coast AQMD has an ongoing program of collecting ambient hexavalent chromium 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 South Coast AQMD jurisdiction.

College of the Desert
Because exceedances of the standard PM10 have been recorded at the Torres-Martinez (Indian Reservation) station, South Coast AQMD is conducting an independent monitoring study to evaluate the spatial representativeness of such measurements. A continuous PM10 monitor was set-up near "College of the Desert" on 12/07/10 where measurements continue to be taken.

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. 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. Phase I sites include one site in the Los Angeles – Long Beach – Santa Ana (Metropolitan Statistical Area (MSA) and one in the Riverside – San Bernardino – Ontario MSA. These sites are to be established and operating by January 1, 2013. The current funding level is intended to cover the costs of these two sites. EPA will announce a schedule for additional implementation at a later date as funding becomes available.

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. 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, and 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.

Following the guidance of the U.S. EPA draft Near Roadway NO2 Technical Assistance Document (TAD) (December, 2011), identification of potential monitoring sites is completed by assessment of six factors including: Annual Average Daily Traffic (AADT), fleet mix, congestion patterns, roadway design, terrain, and meteorology. In addition, South Coast AQMD has locally available data to assist in prediction of near-road NO2 maximum concentrations expected. The identified locations are to be surveyed for site feasibility. Considerations include availability of location and lease, access to utilities, securing permits, and potential safety issues. Based on this guidance South Coast AQMD had identified and begun the process to evaluate and secure potential monitoring locations. Areas which have been identified in the Los Angeles – Long Beach – Santa Ana MSA include the 605/I-5 freeway interchange, 57/I-5/22 freeway interchange and the 57/60 freeway interchange. Areas identified in the Riverside – San Bernardino – Ontario MSA include the 60 Freeway at Euclid, 60/I-15 freeway interchange and the I-10/I-15 freeway interchange. Table 7 shows AADT and Fleet Equivalent (FE) values as determined by TAD guidance.

Once monitoring begins, the continuous operation of instrumentation and meteorological data will be ongoing with data reported to AQS and AIR/NOW.

Indio PM2.5 Collocation

On March 8, 2012 after consultation with EPA the collocated PM2.5 monitor was moved from the Indio air monitoring site to the Mira Loma (Van Buren) site. The Mira Loma (Van Buren) site is the PM2.5 design site for the South Coast AQMD. The monitor was moved to assure the consistency of the data at the Mira Loma site and to serve as a backup monitor in case of primary instrument failure.

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 lead monitoring was required, and a more recent emissions inventory showed lead emissions less than 1 ton per year. The data from the Van Nuys Airport Pb site is currently under review to determine the need for continued monitoring. Changes to the Pb monitoring network will be made upon after consultation with EPA.

Sulfate Monitoring

South Coast AQMD has been monitoring TSP sulfate data at the Banning, 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 South Coast AQMD PM10 and TSP sulfate data for 1999 though 2010 and found good correlation between the two methods. TSP sulfate data is currently being reviewed in consultation with EPA and ARB to determine the need for continued TSP sulfate monitoring.

La Habra

South Coast AQMD has been operating the La Habra site since 1960. 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, the station shelter was replaced in FY 2011-12.

Pasadena

South Coast AQMD has been operating the Pasadena site since 1982. 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 as been modified to replace the existing trailer during FY 2012-13.

Crestline
South Coast AQMD 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 as been ordered to replace the existing trailer during FY 2012-13.

South Long Beach
South Coast AQMD 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 2012-13 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 after consultation with EPA.

Air Monitoring Station Improvements
As part of the actions to enhance quality of data collected, South Coast AQMD will replace existing deteriorated shelters at the Indio, San Bernardino, West Los Angeles and Perris monitoring sites. The new shelters will be installed at the same locations as the existing structures.

Minimum Monitoring Requirements

The South Coast AQMD 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-Santa Ana MSA\CBSA (Code 31100) had a population of 12,874,797 based on 2009 U.S. Census Estimates. The Riverside-San Bernardino-Ontario MSA\CBSA (Code 40140) had a population of 4,224,851 based on 2009 estimates. The minimum number of monitors for each pollutant is based on MSA population as described in 40 CFR § 58 Appendix D. The South Coast AQMD is a Primary Quality Assurance Organization (PQAO) and the network exceeds the minimum monitoring requirements for all criteria pollutants. Details are provided below.

O3

MSA	Min. # Monitors Required	# Monitors Active
31100 (3 Year design > 85%)	4	17
40140 (3 Year design > 85%)	3	13

PM10

MSA	Min. # Monitors Required	# Monitors Active	Min # Collocated Required	# Collocated Active
31100 (Medium Concentration)	4-8	9	1	1
40140 (High Concentration)	6-10	12	2	3

NO2

MSA	Min. # Monitors Required	# Monitors Active
31100	0	17
40140	0	8

CO

MSA	Min. # Monitors Required	# Monitors Active
31100	0	17
40140	0	8

SO2

MSA	Min. # Monitors Required	# Monitors Active
31100	1	5
40140	1	2

Pb

MSA	Minimum # of Monitors Required		# of Monitors Active	
	Source Impact	Urban Monitoring	Source Impact	Urban Monitoring
31100	1	1	5	6
40140	0	1	0	4

Pb (cont)

Minimum # of Collocated Required		# of Collocated Monitors Active	
Source Impact	Urban Monitoring	Source Impact	Urban Monitoring
1	1	1	2
0	1	0	1

Minimum PAMS Monitoring

South Coast AQMD Monitoring Area	Min. # Monitors Sites Required	# Monitoring Sites Active
Type 1 or 3	1	3
Type 2	1	4
Type 4	0	0
Upper Air Meteorology	1	5

PM2.5 24 hr Manual

Primary Quality Assurance Organization (PQAO)	Min. # Monitors Required	# Monitors Active	Min # Collocated Required	# Collocated Active
South Coast AQMD (Design Value > 85%)	6	20	3	3

PM2.5 Continuous

MSA	Min. # Monitors Required	# Monitors Active		Min # Collocated Required		# Collocated Active	
	Total # Continuous Analyzers	FEM	Non FEM	FEM[1]	Non FEM[2]	FEM	Non FEM
31100 (Design Value > 85%)	2	5	3	0	0	0	0
40140 (Design Value > 85%)	2	2	7	0	0	0	1

[1] Designated as audit sampler

[2] One of the required continuous monitors is itself a FEM monitor, no collocation requirement applies.

PM2.5 Speciated

MSA	Min. # Monitors Required	# Monitors Active	Min # Collocated Required	# Collocated Active
31100	1	2	1	1
40140	1	2	1	1

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	ATSF (Exide)	060371406	Pb	01/99
3	Azusa	060370002	CO,NO2,O3,PM10,PM2.5,SO4	01/57
4	Banning Airport	060650012	NO2,O3,PM10, PM2.5	04/97
5	Big Bear	060718001	PM2.5	02/99
6	Burbank	060371002	CO,NO2,SO2,O3,PM10,PM2.5	10/61
7	Closet World (Quemetco)	060371404	Pb	10/08
8	Compton	060371302	CO,NO2,O3,Pb,PM2.5	01/04
9	Costa Mesa	060591003	CO,NO2,SO2,O3	11/89
10	Crestline	060710005	O3,PM10	10/73
11	Fontana	060712002	CO,NO2,SO2,O3,PM10,PM2.5,SO4	08/81
12	Glendora	060370016	CO,NO2,O3,PM2.5,PM10	08/80
13	Indio	060652002	O3,PM10,PM2.5	01/83
14	La Habra	060595001	CO,NO2,O3	08/60
15	Lake Elsinore	060659001	CO,NO2,O3,PM2.5,PM10	06/87
16	LAX Hastings	060375005	CO,NO2,O3,PM10,Pb,SO4	04/04
17	Long Beach (North)	060374002	CO,NO2,SO2,O3,PM10,PM2.5,Pb,SO4	10/62
18	Los Angeles (Main St.)	060371103	CO,NO2,SO2,O3,PM10,Pb,PM2.5,SO4	09/79
19	Mira Loma (Van Buren)	060658005	CO,NO2,O3,PM10,PM2.5	11/05
20	Mission Viejo	060592022	CO,O3,PM10,PM2.5	06/99
21	Norco	060650003	PM10	12/80
22	Ontario Fire Station	060710025	PM10,PM2.5	01/99
23	Palm Springs	060655001	CO,NO2,O3,PM10,PM2.5	04/71
24	Pasadena	060372005	CO,NO2,O3,PM2.5,SO4	04/82
25	Perris	060656001	O3,PM10	05/73
26	Pico Rivera #2	060371602	CO,NO2,O3,Pb,PM2.5,SO4,PM10	09/05
27	Pomona	060371701	CO,NO2,O3	06/65
28	Redlands	060714003	O3,PM10	09/86
29	Rehrig (Exide)	060371405	Pb	11/07
30	Reseda	060371201	CO,NO2,O3,PM2.5	03/65
31	Riverside (Magnolia)	060651003	CO,NO2,Pb,PM10,PM2.5,SO4	10/72
32	Rubidoux	060658001	CO,NO2,SO2,O3,PM10,Pb,PM2.5,SO4	09/72
33	San Bernardino	060719004	CO,NO2,O3,PM10,Pb,PM2.5	05/86
34	Santa Clarita	060376012	CO,NO2,O3,PM10,PM2.5	05/01
35	South Long Beach	060374004	PM10,Pb,PM2.5,SO4	06/03
36	Temecula	060650016	O3, PM2.5	06/10
37	Uddelholm (Trojan Battery)	060371403	Pb	11/92
38	Upland	060711004	CO,NO2,O3,Pb,PM2.5,PM10,SO4	03/73
39	Van Nuys Airport	060371402	Pb	01/10
40	West Los Angeles	060370113	CO,NO2,O3,SO4	05/84

[1]

TABLE 2. FRM/FEM Criteria Pollutant Monitoring Objective and Spatial Scales

MONITORING OBJECTIVE
HC – High Concentration
RC – Representative Concentration
IM – Impact
BK – Background

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

Location	CO	NO2	SO2	O3	Manual PM10	Manual PM2.5	Pb
Anaheim	NS/RC	US/RC		NS/RC	NS/RC	NS/RC	
ATSF (Exide)							MI/IM
Azusa	NS/RC	US/RC		US/HC	NS/RC	NS/RC	
Banning Airport		NS/RC		NS/RC	NS/RC		
Big Bear						NS/RC	
Burbank	NS/HC	NS/RC	NS/RC	US/HC	NS/RC	NS/RC	
Closet World (Quemetco)							MI/IM
Compton	MS/HC	MS/RC		NS/RC		NS/RC	NS/RC
Costa Mesa	NS/RC	NS/RC	NS/RC	NS/RC			
Crestline				NS/HC	NS/RC		
Fontana	NS/RC	US/RC	NS/RC	US/RC	NS/HC	NS/RC	
Glendora	NS/RC	NS/RC		NS/HC			
Indio				NS/RC	NS/HC	NS/RC	
La Habra	NS/RC	US/RC		NS/RC			
Lake Elsinore	NS/RC	NS/RC		NS/RC			
LAX Hastings	MS/RC/BK	MS/RC/BK	NS/RC/BK	MS/RC/BK	NS/RC/BK		NS/RC/BK
Long Beach (North)	MI/HC	MS/RC	NS/HC	MS/RC	MI/RC	NS/HC	MI/RC
Los Angeles (Main St.)	NS/RC	NS/HC	NS/RC	NS/RC	NS/RC	NS/HC	NS/RC
Mira Loma (Van Buren)	NS/RC	NS/RC		NS/RC	NS/HC	NS/HC	
Mission Viejo	NS/RC			NS/RC	NS/RC	NS/RC	
Norco					NS/RC		
Ontario Fire Station					NS/HC	NS/RC	
Palm Springs	NS/RC	NS/RC		NS/RC	NS/RC	NS/RC	
Pasadena	MS/RC	MS/HC		NS/RC		NS/RC	
Perris				NS/RC	NS/RC		
Pico Rivera #2	NS/RC	NS/HC		NS/HC		NS/RC	NS/RC
Pomona	MI/RC	MS/RC		MS/HC			
Redlands				NS/RC	NS/RC		
Rehrig (Exide)							MI/IM
Reseda	NS/RC	US/RC		US/HC		NS/RC	
Riverside	MI/HC	US/RC				NS/HC	MI/HC
Rubidoux	MS/RC	US/RC	NS/RC	US/HC	NS/HC	NS/HC	NS/RC
San Bernardino	MS/RC	US/RC		NS/HC	NS/HC	NS/RC	NS/RC
Santa Clarita	NS/RC	NS/RC		US/HC	NS/RC	NS/RC	
South Long Beach					NS/HC	NS/IM	NS/HC
Temecula				NS/HC			
Uddelholm (Trojan Battery)							MI/IM
Upland	NS/RC	NS/RC		NS/RC			NS/RC
Van Nuys Airport							MI/IM
West Los Angeles	NS/RC	MS/HC		MS/RC			

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
SPM – Special Purpose Monitoring
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	
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 (North)	HC	TR/RC	TR/HC	TR	TR/RC	EX/HC	EX/CO
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	
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[2]				TR/HC			
Upland	RC	TR/RC		TR/RC			EX
Van Nuys Airport							SO
West Los Angeles	RC	TR/HC		RC			

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

MONITORING OBJECTIVE
HC – High Concentration
RC – Representative Concentration
BK - Background

SPATIAL SCALE
MI – Microscale
NS – Neighborhood Scale

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

MONITORING PURPOSE

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

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

TABLE 5. 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 "A"	INDI	33157	060652002	01/30/99	1-in-3
Long Beach (North)	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)	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

TABLE 6. PAMS Proposed 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)

TABLE 7. Near Road NO2 AADT/FE Values

FE ADDT Rank	HD Rank	AADT Rank	FE AADT	AADT Total	Total Trucks (HD)	Total Truck %	County	Post mile	Route	Description
1	24	4	732,828	343,000	23,770	6.93	LA	23.56	60	DIAMOND BAR, JCT. RTE. 57 SOUTH, ORANGE
2	1	38	731,843	263,000	28,588	10.87	LA	9.612	605	SANTA FE SPRINGS, JCT. RTE. 5, SANTA ANA
3	14	32	695,776	272,000	25,840	10	ORA	39	5	LINCOLN AVENUE
4	4	51	690,111	248,000	26,958	11	LA	14	605	WHITTIER, JCT. RTE. 72, WHITTIER BOULEVARD
5	5	51	690,111	248,000	26,958	10.87	LA	13.569	605	WHITTIER, JCT. RTE. 72, WHITTIER BOULEVARD
6	25	14	685,400	299,000	23,561	7.88	LA	7.653	605	NORWALK, JCT. RTE. 105, GLENN ANDERSON FREEWAY
7	59	3	679,014	357,000	19,635	5.5	ORA	34	5	SANTA ANA, JCT. RTE S. 22 AND 57, GARDEN
8	18	39	674,493	262,000	25,152	9.6	ORA	38.915	5	LINCOLN AVENUE
9	12	59	667,843	240,000	26,088	11	LA	17	605	INDUSTRY, JCT. RTE. 60, POMONA FREEWAY
10	2	76	667,637	222,000	27,173	12.24	SBD	4.58	60	ONTARIO, JCT. RTE. 83
11	21	41	666,770	259,000	24,864	9.6	ORA	36.258	5	KATELLA AVENUE
12	3	77	664,620	221,000	27,050	12.24	SBD	2.366	60	CENTRAL AVENUE
13	6	78	661,619	220,000	26,928	12.24	SBD	2.366	60	CENTRAL AVENUE
14	19	54	656,842	245,300	25,094	10.23	SBD	9.936	10	ONTARIO, JCT. RTE. 15
15	20	54	656,842	245,300	25,094	10.23	SBD	11.132	10	ETIWANDA AVENUE
16	23	40	656,299	261,600	24,067	9.2	ORA	5.258	91	ANAHEIM, STATE COLLEGE BOULEVARD
17	7	80	655,601	218,000	26,683	12	SBD	5	60	ONTARIO, JCT. RTE. 83
18	10	75	652,729	223,000	26,203	12	LA	29	60	POMONA, JCT. RTE. 71, CHINO VALLEY FREEWAY
19	11	75	652,729	223,000	26,203	12	SBD	0	60	LOS ANGELES/SAN BERNARDINO COUNTY LINE
20	30	28	641,736	276,000	22,301	8.08	ORA	2.615	91	BUENA PARK, JCT. RTE. 39/BEACH BOULEVARD
21	15	83	636,004	215,000	25,671	11.94	SBD	5.855	60	GROVE AVENUE
22	33	26	635,438	278,000	21,795	8	LA	44	5	LOS ANGELES, JCT. RTE. 210, FOOTHILL FREEWAY
23	22	72	633,704	226,000	24,860	11	SBD	24	10	COLTON, JCT. RTE. 215
24	48	18	628,414	291,000	20,574	7	LA	36	5	LOS ANGELES, JCT. RTE. 170, HOLLYWOOD FREEWAY
25	8	106	626,404	191,000	26,549	14	LA	13	710	LONG BEACH, JCT. RTE. 91, ARTESIA FREEWAY
26	31	44	621,261	256,000	22,272	9	ORA	5	91	ANAHEIM, STATE COLLEGE BOULEVARD
27	37	36	618,485	266,000	21,493	8	ORA	3	91	BUENA PARK, JCT. RTE. 39/BEACH BOULEVARD