Maricopa County
Air Quality Department

2011 Air Monitoring Network Review

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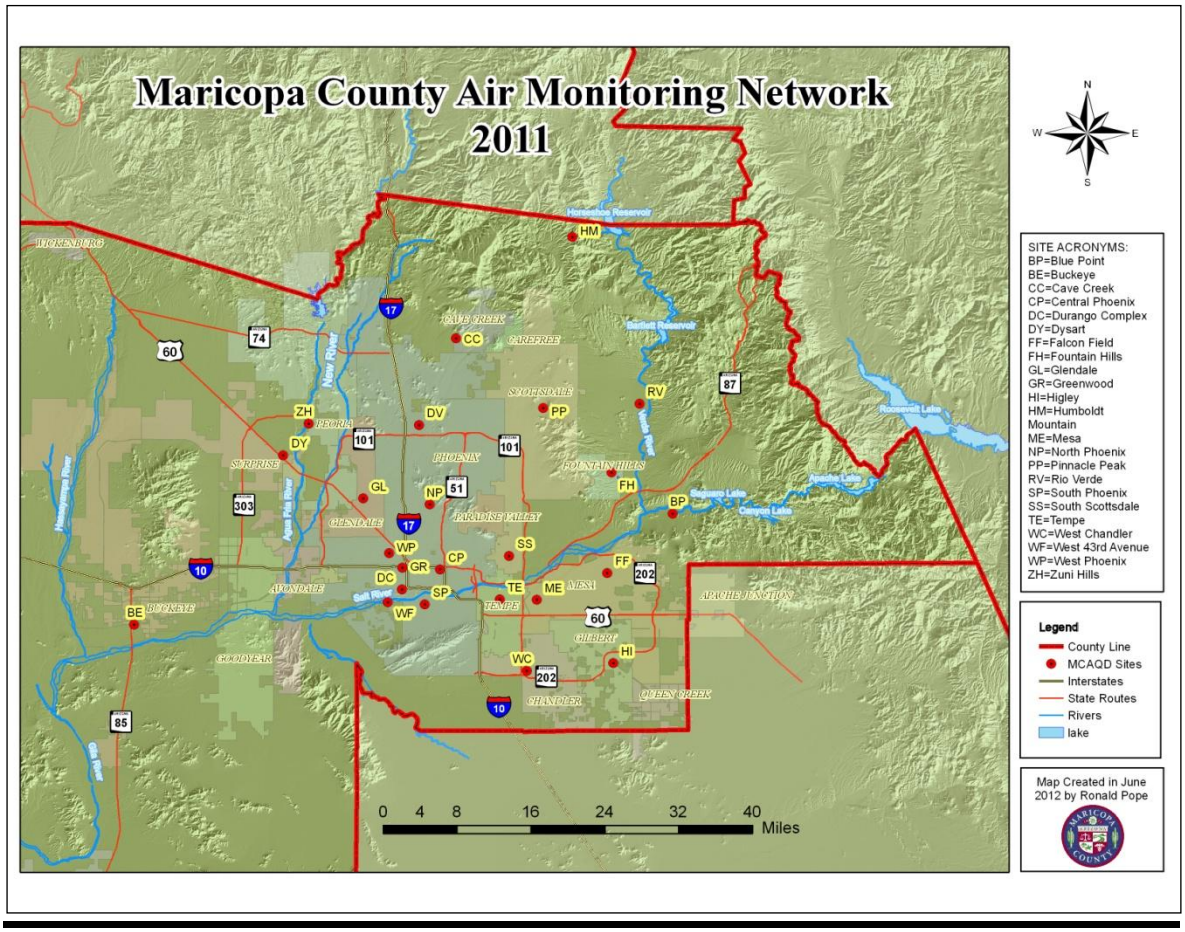

Acknowledgements

In 2011, the Maricopa County Air Quality Department's Air Monitoring Division maintained 24 ambient air monitoring sites throughout Maricopa County. The Air Monitoring Division now operates with a full staff with some technicians pulling double duty in both ambient monitoring and mobile monitoring.

The department would especially like to thank all of its air monitoring staff for the excellent job they do in maintaining Maricopa County's air monitoring network. They are Ben Davis, Gary Ensminger, Robert Dyer, Ronald Pope, John Neff, Michael Perkins, Tom Shorb, Chris Hernandez, Hugh Tom, David Farganus, Daniel Daniels, Reynaldo Santillano, Larry Seals, Robert Sawicki, Alex Herrera, Tom Dubishar, and David Dubiel.

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2011 Maricopa County Air Quality Department Air Monitoring Division staff

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ABSTRACT

This 2011 Annual Air Monitoring Network Review is respectfully submitted by the Maricopa County Air Quality Department[1] (MCAQD) to the United States Environmental Protection Agency (US EPA) Region 9. The Air Monitoring Network Review evaluates the adequacy of the ambient air monitoring network with respect to the monitoring objectives and spatial scales. This annual assessment is required by 40 CFR Part 58, Subpart B. Network changes, special projects, and 3-year data summaries are included in the review. This network review is also preliminary to our annual data certification with the US EPA and helps us assess the quality of our data before submitting for data certification. This network review has the secondary purpose of informing the public of the criteria air pollutants that can affect their health, how MCAQD monitors these criteria pollutants, and what the actual readings are so that our citizens can make informed decisions regarding their lifestyles.

[1] The functions of the former Air Quality Division of the Maricopa County Environmental Services Department (MCESD) were transferred to the newly-created Air Quality Department in November 2004.

DEFINITION OF TERMS

ADEQ: Arizona Department of Environmental Quality.

AQI: Air Quality Index. An index that is applicable to all pollutants which show the concentration of pollutant relative to its respective standard. When the AQI reaches 101 the concentration has exceeded the NAAQS.

AQS: Environmental Protection Agency's Air Quality System

Attainment: This refers to the NAAQS used to comply with the federal Clean Air Act. After several years of no violations of the NAAQS, the EPA can classify the area as in attainment for that pollutant.

AWT: Average Weekday Traffic count.

CFR: Code of Federal Regulations.

Class I: Federally designated park or wilderness area with mandated visibility protection.

CO: Carbon monoxide.

Continuous monitoring: A method of monitoring air pollutants that is continually measuring the quantity of the pollutant, either gaseous or particulate. Continuous monitors can be used to obtain real-time or short-term averages of pollutants.

Criteria Pollutants: Six pollutants (CO, Lead, NO_2, O_3, Particulates, and SO_2) that have NAAQS established by the US EPA.

Delta T: Difference between two levels of temperature measurements. Delta T is measured in the MCAQD network at heights of 2 and 10 meters. A higher temperature at the upper level indicates a temperature inversion.

Design Value: A design value is a statistic that describes the air quality status of a given area relative to the level of the NAAQS. For a concentration-based standard, the air quality design value is simply the standard-related test statistic. The design value of a pollutant monitoring network is the highest sample value in the network used to compare to the NAAQS; e.g. the 24-hour $PM_{2.5}$ design value for the network is the monitor with the highest 3-year average of the 98^{th} percentile.

EPA: U. S. Environmental Protection Agency.

Exceptional Events: An uncontrollable event caused by natural sources of pollution or an event that is not expected to recur at a given location. The ADEQ makes the determination of which events to classify as exceptional; they then petition the EPA for acceptance of the classification. If the EPA accepts the petition, the measured pollution event will not be used in determination of compliance with the NAAQS.

FDMS-TEOM: Filter Dynamics Measurement System-Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by MCAQD to measure $PM_{2.5}$.

FEM: Federal Equivalency Method. An official method, i.e. equipment and procedure, of monitoring air pollution that has been determined to produce results similar to the Federal Reference Method (FRM).

Filter-based Monitor A method of monitoring particulate pollution that involves exposing a pre-weighed filter to a specific flow volume of air to capture the particulates in the air. The filters are then post-weighed to determine the weight of particulates per volume, e.g. $\mu g/m^3$. Filter-based monitors used by MCAQD are all FRM monitors.

FRM: Federal Reference Method. An official method, i.e. equipment and procedure, of monitoring air pollution that has been tested and determined to produce results that accurately measure air pollution with acceptable precision. These methods are the baseline that all other methods, e.g. Federal Equivalency Methods (FEM), refer to.

HAPs Hazardous air pollutants. An air-born chemical that has been listed in the federal Clean Air Act and has an associated standard or process requirement determined for it.

MAG: Maricopa Association of Governments

MCAQD: Maricopa County Air Quality Department.

µg/m^3:	Microgram per cubic meter.
MSA:	Metropolitan Statistical Area. A geographical area designated by the federal government based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core. The MCAQD operates within the Phoenix-Mesa MSA which includes portions of Maricopa and Pinal County.
NAAQS:	National Ambient Air Quality Standards. A health and welfare-based standard that is set by the US EPA to qualify allowable levels of criteria pollutants.
NCORE:	National Core Multi-Pollutant Site. A national network of multi-pollutant monitoring sites used to represent the nation as a whole. There are currently ~75 NCORE sites (1-3 per state plus Washington DC, Virgin Islands, and Puerto Rico) located in both urban and rural areas.
NO_2:	Nitrogen dioxide.
NO_X:	Nitrogen oxides. Sum of nitric oxide (NO), NO_2, and other nitrogen-containing compounds.
O_3:	Ozone.
Pb:	Lead.
PM:	Particulate matter. Material suspended in the air in the form of minute solid particles or liquid droplets.
$PM_{2.5}$:	Particulate matter of 2.5 Microns in diameter or smaller
PM_{10}:	Particulate matter of 10 Microns in diameter or smaller.
PPB:	Parts per billion.
PPM:	Parts per million.
Primary Standard:	One portion of the NAAQS. These standards are designed to protect the public health.
Secondary Standard:	One portion of the NAAQS. These standards are designed to protect the public health.
SIP:	State Implementation Plan. SIPs are a collection of state and local regulations and plans to achieve healthy air quality under the Clean Air Act.
SLAMS:	State and Local Air Monitoring Station. The SLAMS consist of a network of approximately 5,000 monitoring stations nationwide whose size and distribution is largely determined by the needs of State and local air pollution control agencies to meet their respective State implementation plan (SIP) requirements. Other types of monitoring stations include NCORE (national core) and SPM (special purpose) monitors. Maricopa County does not currently operate any NCORE sites and only operates one SPM site.
SO_2:	Sulfur dioxide.
SPM:	Special purpose monitor. Special Purpose Monitoring Stations provide for special studies needed by the State and local agencies to support State implementation plans and other air program activities. The SPMs are not permanently established and can be adjusted easily to accommodate changing needs and priorities.
SSI:	Size Selective Inlet. SSI High Volume Samplers are filter-based instruments used by MCAQD to measure PM_{10}.
TEOM	Tapered Element Oscillating Microbalance. A continuous particulate measuring instrument used by MCAQD to measure PM_{10}.
VOC:	Volatile organic compounds. VOCs are chemical compounds that can easily vaporize and enter the atmosphere. There are many natural and artificial sources of VOCs; solvents and gasoline make up some of the largest artificial sources. VOCs will react with NO_x in the presence of sunlight to create ground-level ozone pollution.

CRITERIA POLLUTANT INFORMATION

Abstract of Pollutants

Certain air pollutants, called "criteria air pollutants," are common throughout the United States. These pollutants can cause health problems, harm the environment, and cause property damage. These criteria pollutants are so named since the US EPA has regulations, called the National Ambient Air Quality Standards (NAAQS), on allowable levels of these substances using health-based criteria. One set of limits, called "primary standards," protect health, while another set of "secondary standards", are designed to protect property and the environment. The US EPA names the following pollutants as criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulates (PM_{10} & $PM_{2.5}$), and sulfur dioxide (SO_2). MCAQD operates monitors for the following criteria pollutants: carbon monoxide, ozone, particulates, nitrogen dioxide, and sulfur dioxide. In addition, the department began to monitor for lead in July 2010 to meet new federal requirements.

Causes and Characteristics of Pollutants

Carbon Monoxide:
CO is the most widely distributed and most commonly occurring air pollutant. Total emissions of CO to the atmosphere exceed all other pollutants combined, on a weight basis. Fortunately, CO does not persist in the atmosphere, but is quickly converted to carbon dioxide (CO_2). CO can reach dangerous levels in localized areas or hotspots such as heavily traveled intersections or city streets. In addition, CO has been implicated in ozone formation. Most people are familiar with CO and are aware that automobiles produce this deadly odorless and colorless gas. In Maricopa County, more than 70% of all anthropogenic CO comes from motor vehicle emissions. In fact, this gas is produced almost anytime something is burned. All substances that are living (plants, animals) or that were once living (wood, coal, oil, gasoline) are composed of carbon compounds. If these substances are burned in the presence of sufficient oxygen, the carbon is converted to CO_2 gas. If, as is often the case, not enough oxygen is present, carbon monoxide gas is produced.

Carbon monoxide's danger lies in the extremely strong affinity that hemoglobin has for it. Hemoglobin, the special oxygen-transporting material in the red blood cell, has approximately 200 times stronger affinity for CO than for oxygen. Therefore, if both CO and O_2 are present the bonding between the CO and hemoglobin will prevent the O_2 from exchanging within a person's body. This puts a heavy burden on people with heart disease and can aggravate angina, but even healthy people can suffer from harmful side effects from CO.

In 2011 Maricopa County achieved its 15th consecutive year of compliance with the eight-hour CO standard.

Lead:
Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. General aviation airports are also a significant source of lead, as general aviation fuel still contains lead additives. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995. Primarily as a result of EPA's regulatory efforts to remove lead from gasoline, levels of lead in the air have decreased by 94 percent between 1980 and 1999.

Following the removal of lead from automotive fuel, levels of airborne lead in Maricopa County were drastically reduced. Because concentrations were consistently below national levels, Maricopa County was allowed to discontinue ambient air monitoring for lead in 1997. However, recent changes in the lead monitoring regulations have brought the need to resume monitoring activities in Maricopa County. In July 2010, MCAQD

opened a new lead monitoring site at Deer Valley airport. Deer Valley airport is the busiest general aviation airport in the county, and thus the largest expected source of lead emissions. Results from the last twelve months of monitoring have shown that ambient levels of lead are still well below the air quality standard, even with the much more stringent regulations.

Nitrogen Dioxide:

NO_2 belongs to a family of highly reactive gases called nitrogen oxides. These gases are formed when fuel is burned at high temperatures, and are emitted primarily from automobile exhaust and power plants. Exposure to nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections, particularly in people with existing respiratory illness such as asthma. Maricopa County is currently in attainment status for NO_2. Maricopa County will be engaging in near-road monitoring to ensure compliance with the new 1-hour NO_2 standard.

Ozone:

O_3 is a naturally occurring compound in which three oxygen atoms combine together. This is an unstable combination, and ozone is continually going through a natural cycle of being formed and then converting back to the more stable "normal" double oxygen compound (O_2). The cycle occurs fairly rapidly. In the stratosphere (six miles and more above the earth), naturally occurring ozone has a beneficial effect of screening out harmful ultraviolet light from the sun. However, ground-level ozone is a pollutant and is a component of the regional smog that affects the valley. Ozone is not directly emitted into the air, but rather forms in a complex reaction that involves heat, sunlight, and a "soup" of toxic pollutants, especially volatile organic compounds (VOCs). Some of the most common sources of VOCs are gasoline vapors, chemical solvents, and combustion products of fuels and consumer products. Ozone is created by sunlight acting on nitrates (NO_X) and VOCs from motor vehicles and stationary sources, and can be carried hundreds of miles from their origins. Ozone affects the respiratory system in people and animals, and also affects the growth of plants.

Maricopa County is currently in non-attainment for Ozone pollution, although the number of violations of the standard had been decreasing in recent years. However, in February 2008, the EPA lowered the NAAQS for ozone from 0.08 ppm to 0.075 ppm. Many of the ozone monitoring sites were in borderline compliance with the older standard and now are exceeding the new standard. Strategies will have to be developed to lower ambient ozone levels into compliance with the new standard, improving air quality for all.

Particulate Matter:

Particulate matter is the term for solid or liquid particles found in the air. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. While some particles are large or dark enough to be seen as soot or smoke, others can only be seen through an electron microscope. In 1987 the EPA replaced the Total Suspended Particulates (TSP) air quality standard with a standard for PM_{10} (particles measuring ten microns or less). Health research studies have found that PM_{10} has the ability to reach the lower regions of the respiratory tract, and thus can affect the respiratory system in both humans and animals. Particulates with high acid levels can cause damage to man-made materials and reduce visibility.

The size of particles is directly linked to their potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. EPA groups particle pollution into two categories:

- "Coarse particles," such as those found near roadways and dusty industries, range in size from 2.5 to 10 microns in diameter.
- "Fine particles," such as those found in smoke and haze, have diameters smaller than 2.5 microns. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air.

Maricopa County is currently in non-attainment for PM_{10} (although we are in attainment for $PM_{2.5}$), nor have we met the requirements set forth in our State Implementation Plan (SIP). As a result of this, the EPA is implementing a 5% reduction of emissions plan, including the possibility of sanctions. This plan, which is required by the Clean Air Act, will continue until Maricopa County can bring the particulate matter pollution into compliance.

Sulfur Dioxide:
SO_2 is emitted (in gaseous form) largely from burning high-sulfur coal, oil, and diesel fuel. Because this gas is usually found in association with particulate pollution, as SO_2 is the precursor for fine sulfate particles, separating the health effects of these two pollutants is difficult. Together SO_2 and $PM_{2.5}$ make up a major portion of the pollutant load in many cities, acting separately and in concert to threaten public health. SO_2 contributes to respiratory illness, particularly in children and the elderly, and aggravates existing heart and lung diseases. SO_2 contributes to the formation of acid rain, and it contributes to the formation of atmospheric particles that cause visibility impairment, most noticeably in national parks. SO_2 and the pollutants formed from SO_2, such as sulfate particles, can be transported over long distances and deposited far from the point of origin. This means that problems with SO_2 are not confined to areas where it is emitted.

Maricopa County is in attainment for Sulfur Dioxide.

National Ambient Air Quality Standards

The EPA Office of Air Quality Planning and Standards (OAQPS) manages programs to improve air quality in areas where the current quality is unacceptable and to prevent deterioration in areas where the air is relatively free of contamination. To accomplish this task, OAQPS establishes the National Ambient Air Quality Standard (NAAQS) for each of the criteria pollutants (see Table 1).

There are two types of standards. Primary standards protect against adverse health effects; secondary standards protect against welfare effects, such as damage to farm crops and vegetation and/or damage to buildings. Because different pollutants have different effects, the NAAQS are also different. Some pollutants have standards for both long-term and short-term averaging times. The short-term standards are designed to protect against acute, or short-term, health effects, while the long-term standards are established to protect against chronic health effects. Table 1 lists the NAAQS for the six criteria pollutants.

Table 1 National Ambient Air Quality Standards

Pollutant	Primary Standards	Averaging Times	Secondary Standard
Carbon Monoxide	9 ppm	8-hour[a]	None
	35 ppm	1-hour[a]	None
Lead	0.15 µg/m^3	Rolling 3-Month Average	Same as Primary
Nitrogen Dioxide	0.053 ppm	Annual (Arithmetic Mean)	Same as Primary
	100 ppb	1-hour[b]	
PM_{10}	150 µg /m^3	24-hour[c]	Same as Primary
$PM_{2.5}$	15 µg/m^3	Annual[d] (Arithmetic Mean)	Same as Primary
	35 µg/m^3	24-hour[e]	Same as Primary
Ozone	0.075 ppm	8-hour[f]	Same as Primary
SO_2	75 ppb	1-hour[g]	-------
		3-hour[a]	0.5 ppm

[a] Not to be exceeded more than once per year.

[b] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb.

[c] Not to be exceeded more than once per year on average over 3 years.

[d] To attain this standard, the 3-year average of the annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15 µg/m^3.

[e] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3.

[f] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.

[g] To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Abstract of MARICOPA COUNTY AIR QUALITY DEPARTMENT Pollution Monitoring Strategies

MCAQD monitors for these criteria pollutants by maintaining twenty-four ambient air-monitoring sites throughout Maricopa County. The dates that the sites were established range from 1961 (Central Phoenix) to July 2011 (Deer Valley). Land use patterns around these sites vary from heavy populated urban areas to sparsely populated rural settings. Site elevations range from 845 feet above sea level (Buckeye) to 5190 feet above sea level at the top of Humboldt Mountain. Not all pollutants are measured at all sites; some sites measure most of the pollutants, while others only measure one or two pollutants.

The following section will detail how the department designs its air monitoring network to obtain representative samples of these air pollutants. Following this will be details of the results obtained from our 2011 sampling season.

NETWORK DESIGN

Purpose and Objective of the Network

The purpose of the ambient air monitoring network is to assess the extent of air pollution, ensure compliance with national legislation, evaluate control options, and provide data for air quality modeling. In general, six basic monitoring objectives and five measuring scales are used to determine the network design (see Table 2 and Table 3). Additional considerations such as availability of power, accessibility to site, security, geographic location, and fiscal and personnel resources are also addressed in determining the feasibility of the network design.

Table 2 Site Monitoring Objectives

1. Determine highest concentrations expected to occur in the area covered by the network.
2. Determine representative concentrations in areas of high population density.
3. Determine the impact on ambient pollution levels of significant sources or source categories.
4. Determine general background concentration levels.
5. Determine the extent of regional pollutant transport from populated areas, with regards to the secondary standards (such as visibility impairment and effects on vegetation).
6. Determine the welfare-related impacts in more rural and remote areas.

To establish or evaluate a site, one must link its monitoring objectives to the physical location of the site. This can be done by matching the spatial scale, which represents the sample of air around the monitor where pollutant concentrations are reasonably uniform, with the most appropriate monitoring objective. Thus, spatial scale represents the physical dimensions of the air parcel around the monitor, and monitoring objective represents the overall purpose of the monitor. Combining the proper spatial scale with the monitoring objective explains why air monitoring sites are located in particular areas.

Table 3 Spatial Measurement Scales

Scale	Defined parameter (radius)
Micro Scale	0 to 100 meters
Middle Scale	100 to 500 meters
Neighborhood Scale	0.5 to 4 kilometers
Urban Scale	4 to 50 kilometers
Regional Scale	10 to 100s of kilometers

Since it is physically and fiscally impossible to monitor air quality in every location, representative samples must be obtained. The optimal locations for obtaining these samples are determined by using the monitoring objectives and the spatial measurement scales described above. For example, there might be numerous locations where the highest concentration of carbon monoxide may occur. Using these principles, only one or two sites will be established to represent all of the high-concentration areas. The same reasoning can be used for different types of pollutants. This does not mean that the number of monitoring sites is fixed. To the contrary, the network must be dynamic enough to maintain a current representative sample of the air quality.

Overview of the Maricopa County Air Quality Department's Air Monitoring Network

Maricopa County has a population of over 3.8 million people (2010 US Census estimate). The EPA has mandated a minimum number of monitors required to properly represent this population. MCAQD has designed its network, using the concepts of scale and objective mentioned previously, to meet and in most cases exceed these EPA requirements (see "Required General Information on Monitoring Network" in Appendix II).

Altogether, the department operated a network of 24 monitoring sites in 2011. The following image details the location of these sites and gives the abbreviation symbols used by Maricopa County. Table 4 and Table 5, which follows, gives the AQS code assigned to each site and details which criteria pollutant is monitored at which site along with the monitor designation, respectively. Table 6 and Table 7 give more specific information about the location of the sites and the types and numbers of monitors at each site, respectively.

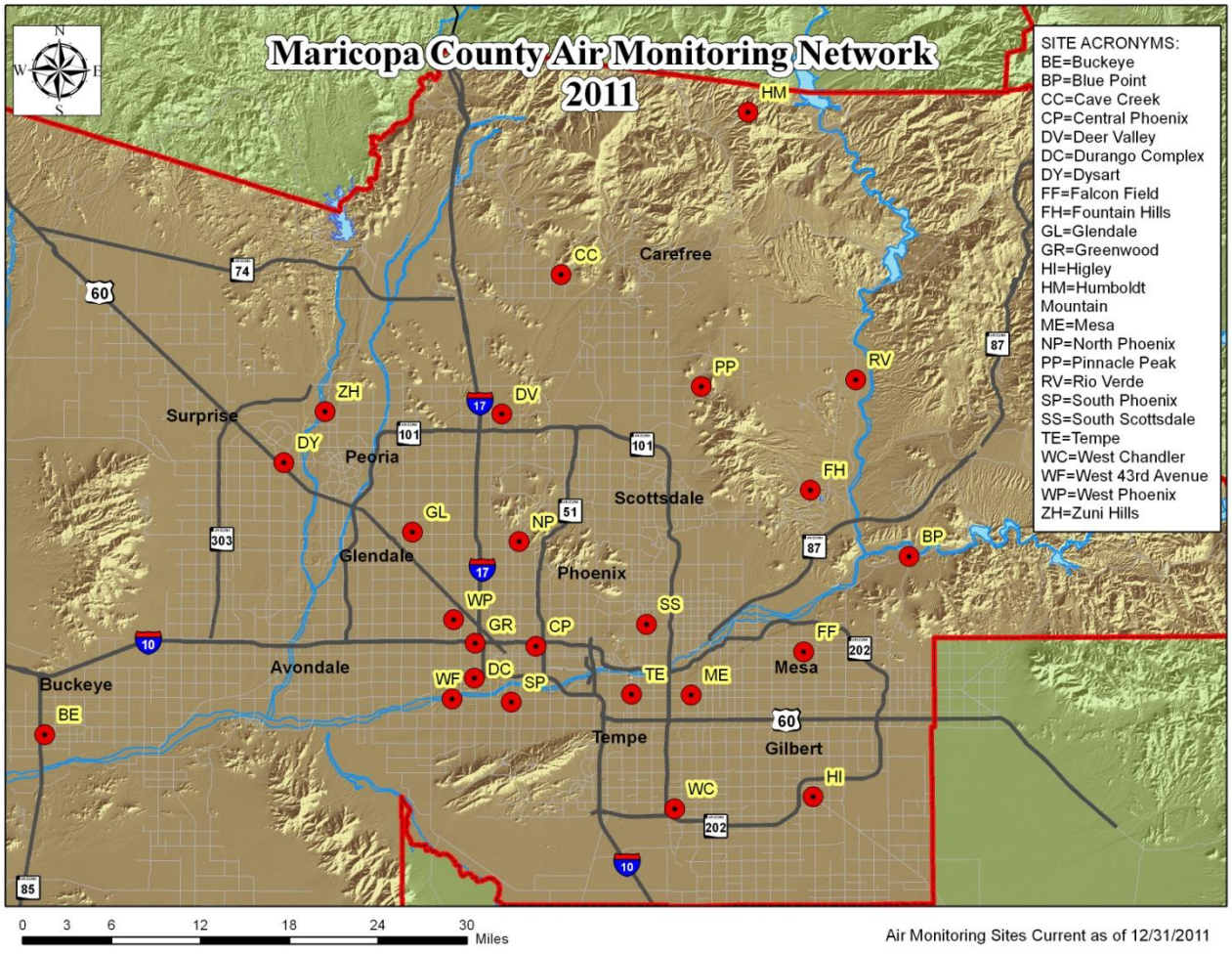


Figure 1 Maricopa County Air Monitoring Sites for 2010

Table 4 Maricopa County Ambient Air Monitoring Sites for 2011

Site Name	Site Abbr.	AQS Code
Blue Point	BP	04-013-9702
Buckeye	BE	04-013-4011
Cave Creek	CC	04-013-4008
Central Phoenix	CP	04-013-3002
Deer Valley	DV	04-013-4018
Durango Complex	DC	04-013-9812
Dysart	DY	04-013-4010
Falcon Field	FF	04-013-1010
Fountain Hills	FH	04-013-9704
Glendale	GL	04-013-2001
Greenwood	GR	04-013-3010
Higley	HI	04-013-4006
Humboldt Mountain	HM	04-013-9508

Site Name	Site Abbr.	AQS Code
Mesa	ME	04-013-1003
North Phoenix	NP	04-013-1004
Pinnacle Peak	PP	04-013-2005
Rio Verde	RV	04-013-9706
South Phoenix	SP	04-013-4003
South Scottsdale	SS	04-013-3003
Tempe	TE	04-013-4005
West Chandler	WC	04-013-4004
West 43rd Ave.	WF	04-013-4009
West Phoenix	WP	04-013-0019
Zuni Hills	ZH	04-013-4016

Table 5 Criteria Pollutants Monitored, by Site and Network

Site	CO	Pb	O_3	$PM_{2.5}$	PM_{10}	NO_2	SO_2
Blue Point			SLAMS				
Buckeye	SLAMS		SLAMS		SLAMS	SLAMS	
Cave Creek			SLAMS				
Central Phoenix	SLAMS		SLAMS		SLAMS	SLAMS	SLAMS
Deer Valley		SLAMS					
Durango Complex				SLAMS	SLAMS		
Dysart	SLAMS		SLAMS		SLAMS		
Falcon Field			SLAMS				
Fountain Hills			SLAMS				
Glendale	SLAMS		SLAMS	SLAMS	SLAMS		
Greenwood	SLAMS				SLAMS	SLAMS	
Higley					SLAMS		
Humboldt Mountain			SLAMS				
Mesa	SLAMS			SLAMS	SLAMS		
North Phoenix	SLAMS		SLAMS	SLAMS	SLAMS		
Pinnacle Peak			SLAMS				
Rio Verde			SLAMS				
South Phoenix	SLAMS		SLAMS	SLAMS	SLAMS		
South Scottsdale	SLAMS		SLAMS		SLAMS	SLAMS	SLAMS
Tempe	SLAMS		SLAMS				
West Chandler	SLAMS		SLAMS		SLAMS		
West 43rd Ave.					SLAMS		
West Phoenix	SLAMS		SLAMS	SLAMS	SLAMS	SLAMS	
Zuni Hills					SPM		

SLAMS=State and Local Monitoring Station; SPM=Special Purpose Monitoring Station

Table 6 Site Location

Site	Latitude	Longitude	Site Location	AQS Code
BP	33.54549	-111.60925	Usery Pass & Bush Highway	04-013-9702
BE	33.37005	-112.62070	MC85 & HWY 85	04-013-4001
CC	33.82169	-112.01739	32nd St. & Carefree Highway	04-013-4008
CP	33.45793	-112.04601	19th St & Roosevelt	04-013-3002
DV	33.684627	-112.08635	10th Ave. & Deer Valley Rd.	04-013-4018
DC	33.42650	-112.11814	27th Ave. & Durango St.	04-013-9812
DY	33.63713	-112.34184	Bell Rd. & Dysart Rd.	04-013-4010
FF	33.45223	-111.73331	McKellips & Greenfield	04-013-1010
FH	33.61103	-111.72529	Palisades & Fountain Hills Blvd.	04-013-9704
GL	33.56936	-112.19153	59th Ave & W. Olive	04-013-2001
GR	33.46093	-112.11748	27th Ave. & Interstate 10	04-013-3010
HI	33.31074	-111.72255	Higley Rd. & Chandler Blvd	04-013-4006
HM	33.98280	-111.79870	Top of Humboldt Mountain	04-013-9508
ME	33.41045	-111.86507	Broadway Rd. & Alma School Rd.	04-013-1003
NP	33.56033	-112.06626	7th Street & Dunlap Avenue	04-013-1004
PP	33.71231	-111.85272	Pima Rd & Pinnacle Peak	04-013-2005
RV	33.71881	-111.67183	Forest Rd & Del Ray Ave.	04-013-9706
SP	33.40316	-112.07533	Central Ave. & Broadway	04-013-4003
SS	33.47968	-111.91721	Scottsdale Rd. & Thomas Rd.	04-013-3003
TE	33.4124	-111.93473	College Ave. & Apache Blvd.	04-013-4005
WC	33.29898	-111.88431	Ellis St. & Frye Rd.	04-013-4004
WF	33.40642	-112.14434	43rd Ave. & Broadway Rd.	04-013-4009
WP	33.48385	-112.14257	39th Ave. & Earll Dr.	04-013-0019
ZH	33.686738	-112.294171	109th Ave & Deer Valley Rd.	04-013-4016

Table 7 Site Instrument Setup

AIR MONITORING NETWORK OPERATIONS

Sites	WS/ WD	O3	CO		NOX	SO2	Press	Del T	PM-10 Hourly	PM-2.5 Hourly	Pb	Temp	Rel Hum	Rm	Rain	Solar	PM 2.5 Filter	PM-10 Filter	Multi-Gas	AQS Code	Active Instru
BP	1	1										1		1						04-013-9702	4
BE	1	1	1	*	1		1		1			1	1	1					1	04-013-4011	10
CC	1	1										1	1	1	1					04-013-4008	6
CP	1	1	1		1	1	1		1			1		1					1	04-013-3002	10
DC	1					1	1		1	1		1	1	1						04-013-9812	8
DY	1	1	1	*			1		1			1	1	1						04-013-4010	8
DV	1						1				2	1	1	1						04-013-4017	6
FF	1	1										1		1						04-013-1010	4
FH	1	1					1					1	1	1						04-013-9704	6
GL	1	1	1	*			1		1	1		1	1	1						04-013-2001	9
GR	1		1		1		1		1			1		1					1	04-013-3010	8
HI	1						1	1	1			1		1						04-013-4006	6
HM		1										1	1	1						04-013-9508	4
ME	1		1	*			1					1	1	1			1	1		04-013-1003	8
NP	1	1	1	*			1	1	1	1		1		1		1				04-013-1004	10
PP	1	1												1						04-013-2005	3
RV		1												1						04-013-9706	2
SP	1	1	1	*			1		1	1		1	1	1			1			04-013-4003	10
SS	1	1	1	*	1		1					1	1	1				2	1	04-013-3003	10
TE	1	1	1	*				1				1		1	1					04-013-4005	7
WC	1	1	1	*			1		1			1	1	1						04-013-4004	8
WF	1						1	1	1			1		1						04-013-4009	6
WP	1	1	1		1		1	1	1	1		1		1			2		1	04-013-0019	12
ZH	1								1			1		1						04-013-4016	4
Active Instr	22	17	12		5	2	16	5	13	5	2	22	12	24	2	1	4	3	5		

Total # of Pollutant Monitors **63**

* = seasonal monitor

Total # of Active Instruments **172**

Total # of Active Sites **24**

2011 SUMMARY OF NETWORK RESULTS AND REQUIRED INFORMATION

Data Completeness

Before any data set can be considered valid it must first pass a data recovery test that consists of determining the ratio of actual samples to scheduled samples by quarter. This ratio must be greater than 75% for a data set to pass the first validity test. After all validation tests have been passed, the data can be used to determine compliance with the NAAQS.

The following is a summary of the annual data completeness for all criteria pollutants (Table 8). Note that CO, O_3, NO_2, and SO_2 samples are all from continuous monitors and are therefore hourly-averaged samples. PM monitors are either continuous, and therefore hourly-averaged, or filter-based and daily-averaged. Filters are sampled for 24 hours every 3rd day ($PM_{2.5}$) or every 6th day (PM_{10}).

Table 8 2011 Criteria Pollutant Data Completeness

	Number of Actual Samples	Number of Scheduled Samples	Data Completeness (Actual/Schedule)
Carbon Monoxide	71007	72072	98.5%
Lead	42	46	91.3%
Nitrogen Dioxide	37925	39384	96.3%
Ozone	113505	115560	98.2%
$PM_{2.5}$ (1 in 3 day)	383	397	96.5%
$PM_{2.5}$ (continuous)	32770	34344	92.2%
PM_{10} (1 in 6 day)	266	285	98.4%
PM_{10} (continuous)	106391	108048	98.5%
Sulfur Dioxide	16963	17520	96.8%
Total	**379294**	**387701**	**97.8%**

Criteria Pollutant Summary

Carbon Monoxide (CO)

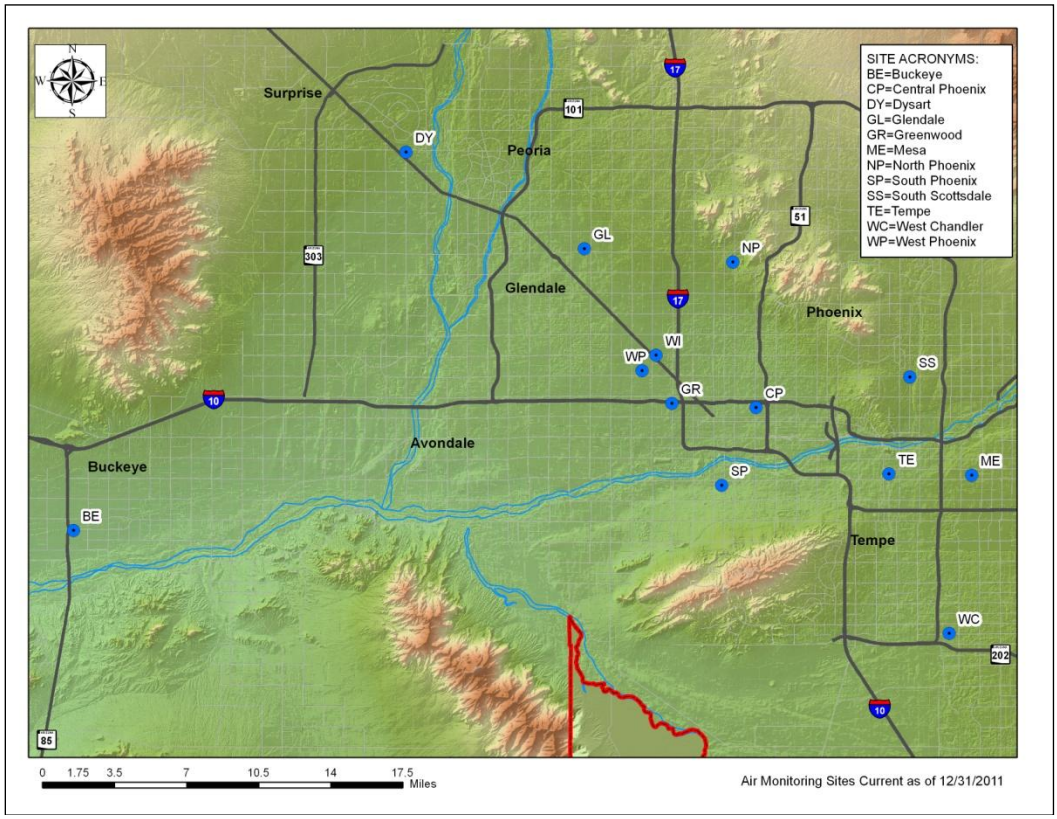


Figure 2 2011 Carbon Monoxide Monitoring Sites

During 2011, twelve CO monitors were reported as operational to the US EPA Air Quality System (AQS) (Figure 2). All CO monitors are classified as SLAMS (Table 5).

There are two primary standards for CO, the 8-hour average and the 1-hour average. The 8-hour primary standard is 9 ppm and the 1-hour primary standard is 35 ppm. A violation of the standard is any two exceedances in a calendar year. For calendar year 2011, no exceedances of the CO 1-hour or 8-hour standards were recorded at any MCAQD monitoring sites (see Table 9).

Table 9 2011 8-hour Average Carbon Monoxide Summary

Site	CO 8-hour Average Max. (PPM); Date: Hour	CO 8-hour Average 2nd High (PPM); Date: Hour	Number of Exceedances of 8-Hour average
Buckeye	**0.9;** 02/15:00	**0.8;** 02/14:19	0
C. Phoenix	**2.1;** 12/10:04	**2.1;** 12/30:23	0
Dysart	**0.5;** 12/30:19	**0.5;** 12/31:21	0
Glendale	**1.3;** 11/30:01	**1.2;** 01/07:01	0
Greenwood	**2.5;** 12/10:07	**2.5;** 12/25:03	0
Mesa	**1.5;** 12/21:00	**1.3;** 12/09:02	0
N. Phoenix	**1.6;** 01/12:09	**1.5;** 01/05:23	0
S. Phoenix	**2.6;** 12/25:01	**2.0;** 12/31:23	0
South Scottsdale	**1.4;** 11/30:00	**1.3;** 11/23:23	0
Tempe	**3.2;** 01/25:23	**2.9;** 01/26:05	0
West Chandler	**1.4;** 12/10:03	**1.3;** 11/30:00	0
W. Phoenix	**3.0;** 12/10:03	**2.9;** 12/25:03	0

Note: this table is read as the bold number representing the data followed by the date and time, e.g. **0.7**; 01/10:18 is read as: 0.7 PPM on January 10 in the 6 o'clock PM (18:00) hour.

Additional information required by EPA is shown in Table 10**.**

Table 10 CO Data Required by EPA

CBSA	Population & Census Year	No. of Required Near-Road Monitors	No. of Active Near-Road Monitors	No. of Additional Monitors Needed
38060	4,263,236 (2011)	0	0	0

Lead (Pb)

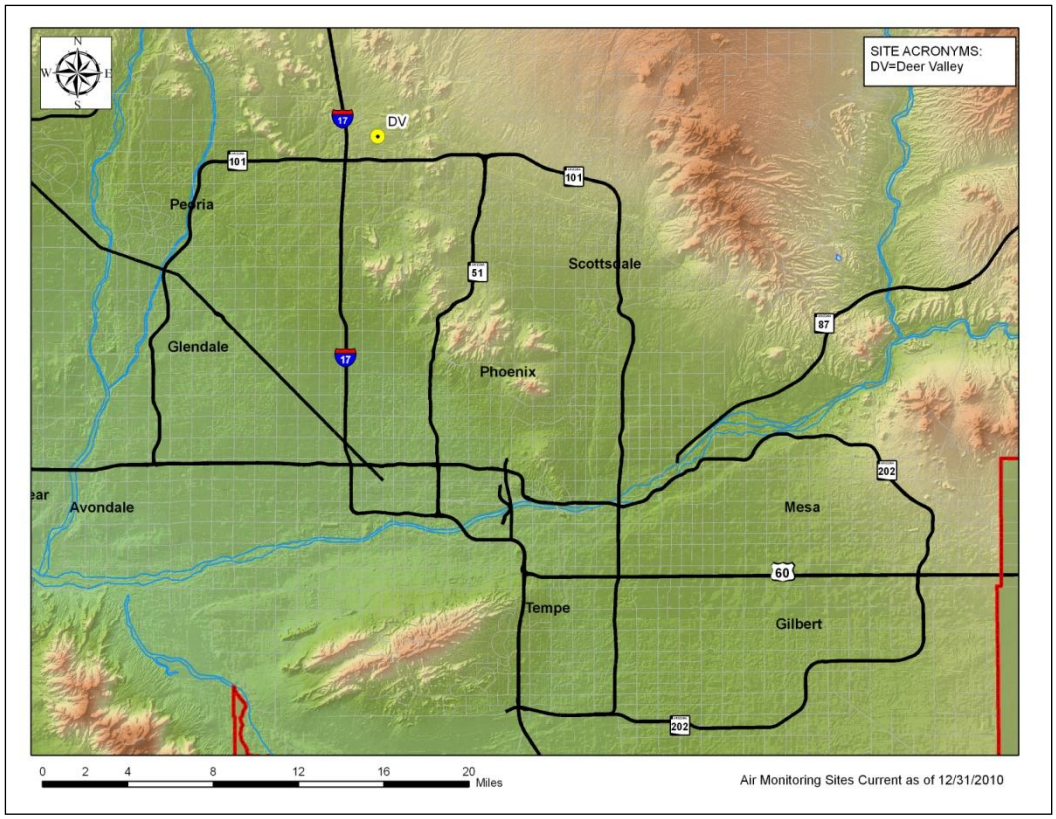


Figure 3 2011 Lead Monitoring Sites

Following the introduction of unleaded gasoline in the early 1990's, ambient air concentrations of lead fell to such a low level that Maricopa County was given permission to discontinue monitoring for this pollutant. However, the lead NAAQS was drastically lowered by a new regulation in 2008, and this caused concern to begin monitoring for this pollutant again to ensure that the new standard is being met.

In July of 2010 a new lead monitoring site was opened near the Deer Valley airport in north Phoenix. Deer Valley Airport, as one of the busiest general aviation airports in the region, is assumed to be the largest point source of lead within Maricopa County.

The new lead NAAQS has identical primary and secondary standard, a rolling three-month average. The rolling three month average is violated by an exceedance of 0.15 $\mu g/m^3$.

Table 11 2011 Lead Summary

Site	24-hour Max. ($\mu g/m^3$); Date: Hour	24-hour 2nd High ($\mu g/m^3$); Date: Hour	Max. Quarterly Average ($\mu g/m^3$)	Number of Samples
Deer Valley	**0.070;** 11/29:00	**0.059;** 02/14:00	**.0329**; 4th Qtr	57

Note: this table is read as the bold number representing the data followed by the date and time, e.g. **0.024**; 06/30:05 is read as: 0.024 PPM on June 30 in the 5 o'clock AM (05:00) hour.

Additional information required by EPA is shown in Table 12**.**

Table 12 Lead Data Required by EPA

Source Name	Address	Pb Emissions (tons/yr)	Emission Inventory Source & Data Year	Max 3-month Design Value ($\mu g/m^3$)	Design Value Date (third month, year)	No. of Required Monitors	No. of Active Monitors	No. of Additional Monitors Needed
Deer Valley Airport	Phoenix, AZ	1.1	General Aviation Airport 2008	0.0329	Dec 2011	1	1	0

Nitrogen Dioxide (NO2)

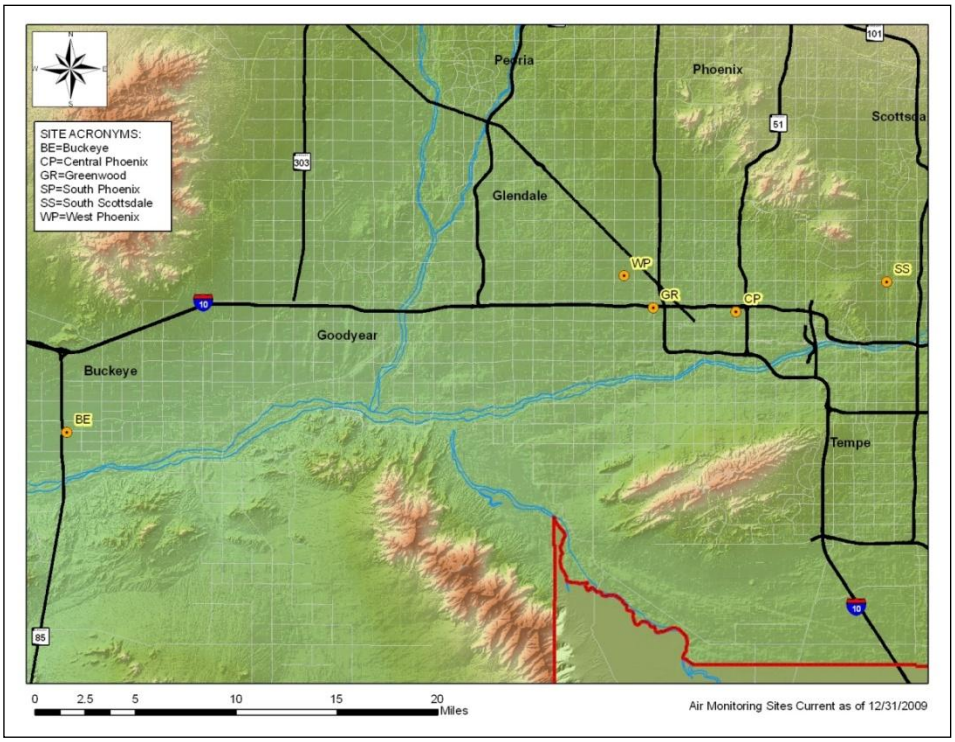


Figure 4 2011 Nitrogen Dioxide Monitoring Sites

All parts of Maricopa County are in attainment for nitrogen dioxide. During 2011, five NO_2 monitors were operational and were reported in AQS (Figure 4). All NO_2 monitors are designated as SLAMS (see Table 5).

Compliance with the NO_2 standard is achieved when the annual arithmetic mean concentration in a calendar year is less than or equal to 53 ppb. A new hourly standard for NO_2 began in 2010; this regulation states that the 3-year average of the 98th percentile cannot exceed 100 ppb. For calendar year 2011, no exceedances of the NO_2 annual or 1-hour standard were recorded at Maricopa County monitoring sites.

Table 13 2011 Nitrogen Dioxide Summary

Site	NO_2 Avg. 1-hour Max. (PPB);	NO_2. 1-hour 98th Percentile (PPB)	3-Year Avg. of 98th Percentile (PPB)	# of 1-hour Samples	Annual Average (PPB)
Buckeye	43.0	38.0	36.0	8601	8.8
Central Phoenix	70.0	60.0	61.7	8427	19.8
Greenwood	72.0	65.0	67.7	8582	25.4
South Scottsdale	56.0	54.0	53.0	4127	15.5
West Phoenix	62.0	55.0	55.0	8188	18.0

Additional information required by EPA is shown in Table 14.

Table 14 NO_2 Data Required by EPA

CBSA	Population & Census Year	Max AADT Counts (year)	No. Required Near Road Monitors	No. of Active Near-Road Monitors	No of Additional Near-Road Monitors Needed	No. of Required Area-Wide Monitors	No. of Active Area-Wide Monitors	No of Additional Area-Wide Monitors Needed
38060	4,263,236 (2011)	320,137	2	0	0	0	4	0

Ozone (O_3)

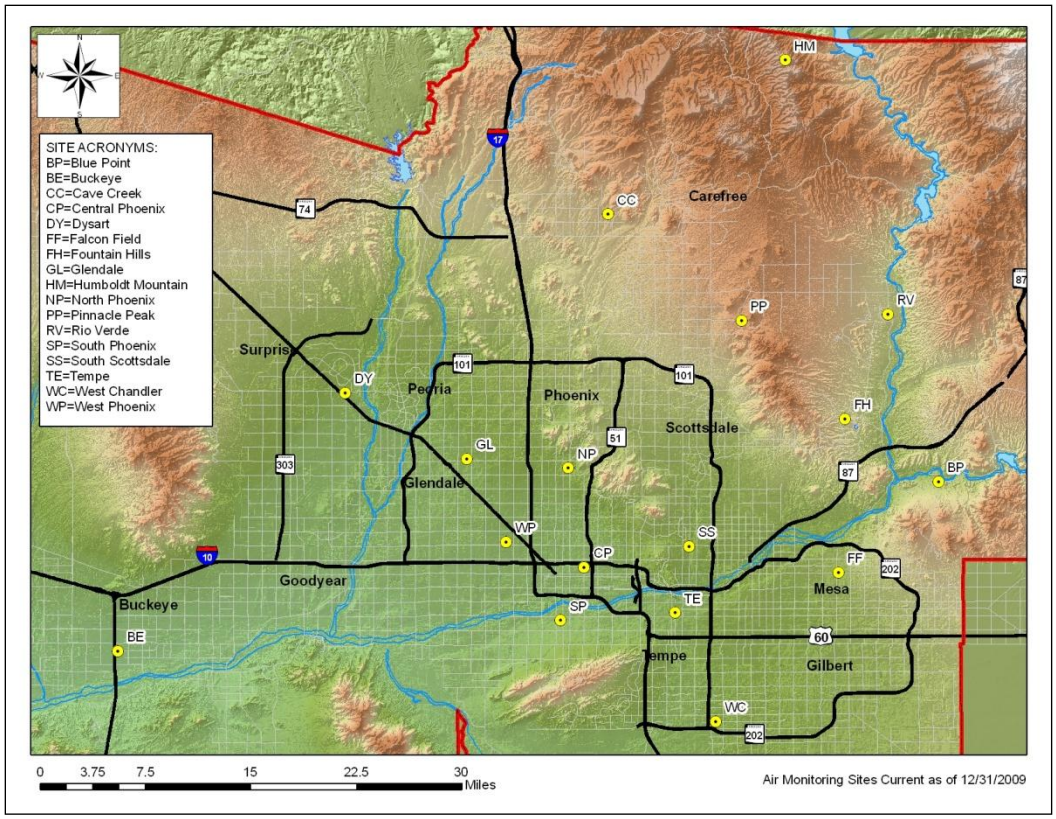


Figure 5 2011 Ozone Monitoring Sites

During 2011, seventeen ozone monitors were reported as operational in AQS (Figure 5). All of the ozone monitors are classified as SLAMS (Table 5). The 1-hour average ozone standard was revoked by the EPA on June 15, 2005, and has been replaced by the 8-hour average standard for compliance purposes.

On March 12, 2008, the EPA lowered the eight-hour ozone NAAQS from 0.080 to 0.075 ppm. Compliance with the standard is determined by averaging the 4th highest eight-hour average over a three-year period. This three-year average must be less than or equal to 0.075 ppm.

There were 70 exceedances of the eight hour primary standard for ozone in 2011. Table 15 presents the 2011 data summary for eight-hour ozone at department monitoring sites. Also in 2011, there was one violation of the eight-hour primary standard (the 8-hour average NAAQS for ozone is violated when the three-year average of the fourth high is greater than 0.075 ppm (see Table 16).

Table 15 2011 8-hour Average Ozone Summary

Site	8-hour max. (PPM); Date: Hour	2nd High (PPM); Date: Hour	3rd High (PPM); Date: Hour	4th High (PPM); Date: Hour	Number of Days ≥ 0.075
Blue Point	**.092;** 06/09:13	**.084;** 05/25:11	**.082;** 05/24:11	**.081;** 06/10:11	9
Buckeye	**.072;** 05/25:11	**.072;** 06/09:11	**.070;** 07/30:11	**.067;** 05/24:09	0
Cave Creek	**.088;** 06/09:11	**.083**; 05/25:11	**.082;** 08/25:12	**.081;** 06/10:10	6
Central Phoenix	**.081;** 06/09:12	**.076;** 06/10:10	**.074;** 09/01:10	**.073;** 05/25:11	2
Dysart	**.075;** 07/30:11	**.074;** 08/25:12	**.073;** 06/09:11	**.070;** 05/25:11	0
Falcon Field	**.074;** 06/09:12	**.073;** 05/25:10	**.072;** 07/06:12	**.069;** 06/22:10	0
Fountain Hills	**.089;** 06/09:14	**.083;** 05/25:12	**.081;** 06/10:11	**.077;** 06/21:12	9
Glendale	**.083;** 06/09:11	**.082;** 08/25:11	**.080;** 05/25:11	**.076;** 09/01:09	4
Humboldt Mt.	**.088;** 06/09:15	**.085;** 06/10:12	**.081;** 05/25:14	**.077;** 06/13:15	6
North Phoenix	**.090;** 06/09:11	**.083;** 09/01:10	**.082;** 05/25:11	**.081;** 06/10:10	8
Pinnacle Peak	**.088;** 06/09:13	**.081;** 05/25:12	**.080;** 06/10:10	**.077;** 06/21:13	4
Rio Verde	**.088;** 06/09:13	**.084;** 07/04:08	**.082;** 06/10:11	**.081;** 05/25:12	6
South Phoenix	**.081;** 06/09:11	**.078;** 05/25:10	**.077;** 06/10:10	**.076;** 08/02:10	4
South Scottsdale	**.083;** 06/09:11	**.078;** 06/10:10	**.077;** 05/25:10	**.075;** 09/01:10	3
Tempe	**.076;** 06/09:11	**.072;** 06/10:11	**.070;** 05/25:11	**.070;** 08/02:11	1
West Chandler	**.079;** 08/02:10	**.077;** 06/09:11	**.077;** 08/04:10	**.074;** 05/24:10	3
West Phoenix	**.086;** 06/09:11	**.080;** 08/25:10	**.079;** 06/10:11	**.078;** 09/01:10	5

Note: this table is read as the bold number representing the data followed by the date and time, e.g. **0.073**; 4/30:12 is read as: 0.073 PPM on April 30 in the 12 o'clock PM (12:00) hour.

Table 16 3 Year Average of 8-Hour Ozone

Site	2009 4th High (PPM)	2010 4th High (PPM)	2011 4th High (PPM)	3 Yr. Avg. of 4th High (PPM)*
Blue Point	0.069	.068	.081	0.072
Buckeye	0.062	.064	.067	0.064
Cave Creek	0.070	.074	.081	0.075
Central Phoenix	0.069	.072	.073	0.071
Dysart	0.069	.071	.070	0.070
Falcon Field	0.065	.070	.069	0.068
Fountain Hills	0.069	.074	.077	0.073
Glendale	0.068	.074	.076	0.072
Humboldt Mt.	0.067	.070	.077	0.071
North Phoenix	0.072	.079	.081	0.077#
Pinnacle Peak	0.070	.077	.077	0.074
Rio Verde	0.068	.071	.081	0.073
South Phoenix	0.067	.074	.076	0.072
South Scottsdale	0.072	.076	.075	0.074
Tempe	0.067	.068	.070	0.068
West Chandler	0.070	.074	.074	0.072
West Phoenix	0.068	.075	.078	0.073

*Note that this average value has been truncated (not rounded) to the third significant digit.
#Indicates violation of the NAAQS.

Additional information required by EPA is shown in Table 17.

Table 17 Ozone Data Required by EPA

CBSA	County	Population & Census Year	8-Hr Design Value (ppm)	Design Value Site	No. Required Monitors	No. Active Monitors	No. of Additional Monitors Needed
38060	Maricopa	4,263,236 (2011)	0.077	North Phoenix	2	17	0

Particulate Matter <=10 Microns (PM_{10})

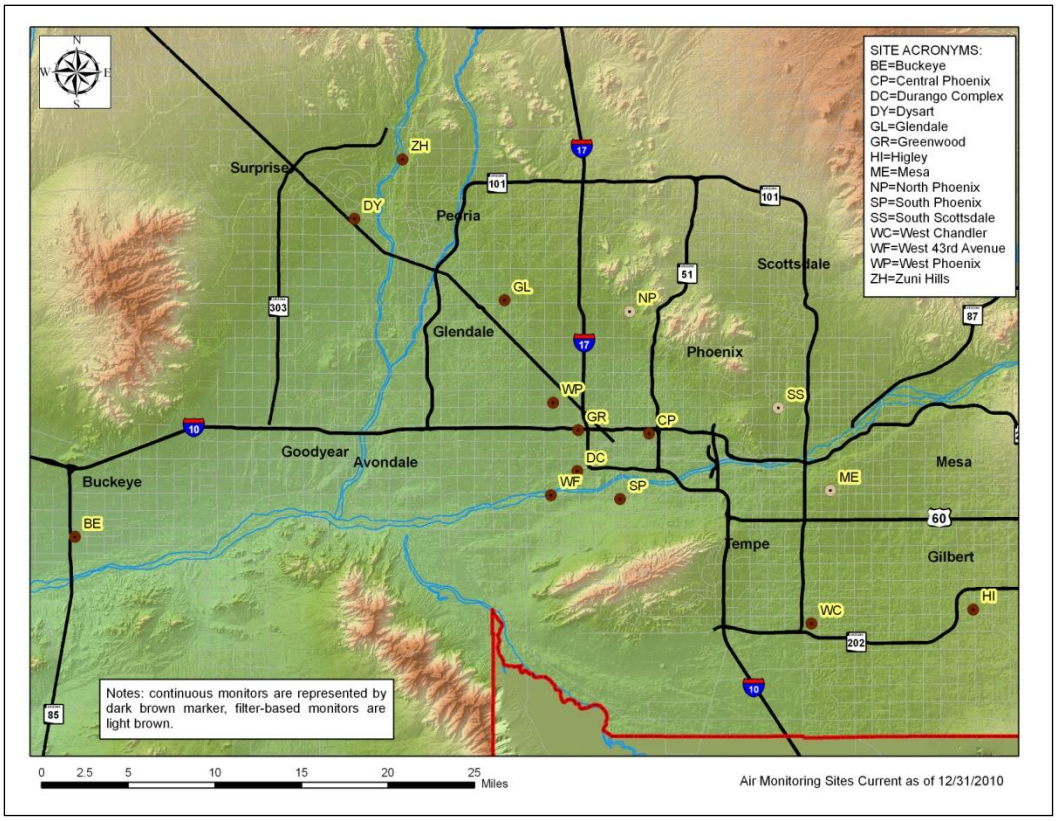


Figure 6 2011 PM_{10} Monitoring Sites (includes continuous and non-continuous sites)

During 2011, fifteen PM_{10} monitors were reported as operational in AQS (Figure 6). All PM_{10} monitors are classified as SLAMS; except for Zuni Hills which is classified as a Special Purpose (SP) monitor (Table 5). Note that thirteen of these PM_{10} sites operate continuous monitors which collect hourly-averaged data; the other two are non-continuous filter-based monitors which collect 24-hour averaged data on a 1-in-6 day schedule.

The 24-hour Primary standard for PM_{10} is 150 µg/m^3 (155 µg/m^3 with mathematical rounding). This standard is violated when the expected number of exceedances for the calendar year is more than one. A formula, as detailed in 40 CFR 50, is used to determine the expected number of exceedances. The formula takes into account the number of days sampling occurred and the number of valid samples collected. A 3-year average of these estimated days is then used to determine compliance. On December 18, 2006 new monitoring rules from the EPA revoked the PM_{10} annual primary standard, although the annual average is still displayed below for informational purposes (See Table 18).

Table 18 2011 PM_{10} Summary

Site Name	24-hr Average Max ($\mu g/m^3$)	24-hr Average 2nd High ($\mu g/m^3$)	Number of 24-hour NAAQS Exceedances	Expected Exceedances	Annual Average ($\mu g/m^3$)	#Exceptional Events	Number of Samples
Buckeye (continuous)	385*	296*	9	9	43.7	9	8689
Central Phoenix (continuous)	308*	307*	8	8.022	39.5	8	8680
Durango Complex (continuous)	436*	277*	8	8	48.0	8	8656
Dysart (continuous)	273*	239*	5	5	29.2	5	8694
Glendale (continuous)	242*	240*	5	5.095	32.3	5	8496
Greenwood (continuous)	388*	254*	7	7	42.2	7	8658
Higley (continuous)	362*	266*	8	8	39.0	8	8653
Mesa	127	90	0	0	26.7	0	55
North Phoenix (continuous)	186*	184*	2	3.629	26.5	2	157
South Phoenix (continuous)	420*	338*	9	9.023	47.7	8	8626
South Scottsdale	119	90	0	0	25.8	0	56
West Chandler (continuous)	669*	387*	11	11	39.8	11	8687
West 43rd Ave (continuous)	369*	292*	7	7.066	47.9	7	8676
West Phoenix (continuous)	279*	266*	8	7.457	48.0	8	8314
Zuni Hills (continuous)	411*	260*	4	4	28.4	4	8692

*Indicates an exceedance of the standard.

Note that some data have the potential for being classified as exceptional events (see Definition of Terms for explanation of exceptional events). In accordance with the EPA's exceptional events policy, once approved these data are not used in determining compliance with the NAAQS. Values in Table 18 are from official AQS reports as of the date of publishing this review; exceptional events that have not yet been approved by the EPA will not affect these values until they are approved. The process of approving exceptional events can take over a year after the exceedance day, so some values in Table 18 could change upon EPA approval of an exceptional event petition.

On July 2, 2002 (67 FR 44369), EPA found the state implementation plan (SIP) for the Metropolitan Phoenix (Maricopa County), Arizona serious PM_{10} non-attainment area to be inadequate to attain the 24-hour particulate (PM_{10}) air quality standard at the Salt River monitoring site. Under authority from the Clean Air Act, EPA has required a SIP revision to be submitted by the State of Arizona to correct the inadequacy. In 2004 the Arizona Department of Environmental Quality submitted a SIP addressing the inadequacies in the Salt River Area to the EPA. As of December 31, 2011, Maricopa County has not come into compliance with the NAAQS for PM_{10}. As a result of this, the EPA is requiring a 5% plan which began in 2008. This required Maricopa County to submit an approved plan to reduce the annual PM_{10} emissions of Maricopa County by 5% until the standard is met. Failure to comply with this plan or to meet the NAAQS for PM_{10} will result in further 5% reductions annually, and could result in sanctions from the EPA.

Additional information required by EPA is shown in Table 19.

Table 19 PM_{10} Data Required by EPA

CBSA	County	Population & Census Year	Max Conc.	Max Conc. Site	No. Required Monitors	No. Active Monitors	No. of Additional Monitors Needed
38060	Maricopa	4,263,236 (2011)	669	West Chandler	6-10	15	0

Particulate Matter <=2.5 Microns ($PM_{2.5}$)

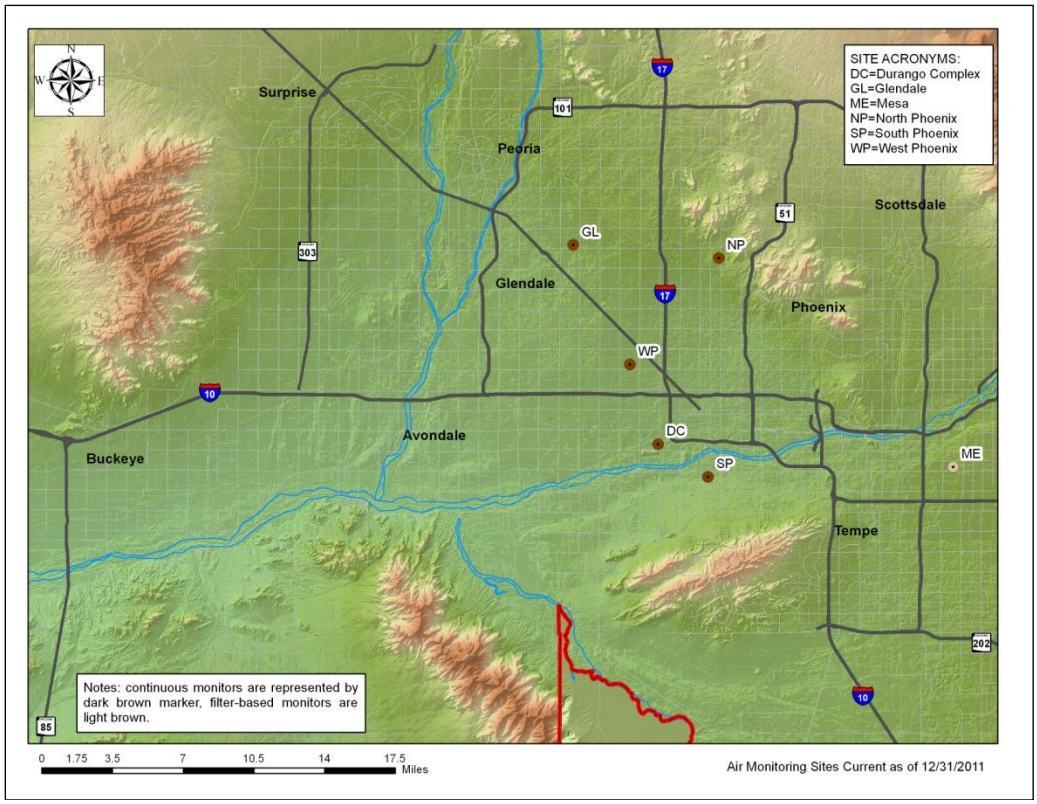


Figure 7 2011 $PM_{2.5}$ Monitoring Sites (continuous and non-continuous)

Currently MCAQD operates collocated filter-based compliance $PM_{2.5}$ monitors at the West Phoenix site and single filter-based monitors at the Mesa and South Phoenix site (Figure 7). These compliance PM2.5 monitors all use sample filters and are non-continuous in nature. On July 1, 2007, the department took over weighing the sample filters, a process that was previously done by the ADEQ. All filters are processed and weighed in our internal laboratory. In addition to the filter-based monitors, the department operates five continuous $PM_{2.5}$ monitors at the Durango, Glendale, North Phoenix, South Phoenix, and West Phoenix sites. These continuous monitors have recently been reclassified as Federal Equivalency Methods (FEM), so their data are applicable to comparison with the national standards. All monitors are identified as SLAMS (Table 5).

Note that the $PM_{2.5}$ network is much smaller than the PM_{10} network. The reason for this is that historically more concern and resources have been given to PM_{10}, since Maricopa County is not in attainment for this pollutant (Maricopa County is currently in attainment for $PM_{2.5}$). According to federal regulations, Maricopa County does operate slightly more than the required minimum number of $PM_{2.5}$ monitors for the MSA (see Table 24 and Appendix II). The Air Monitoring Division continually assesses if the existing network adequately represents the air quality ($PM_{2.5}$) in Maricopa County. One result from these ongoing assessments has been the addition of the continuous $PM_{2.5}$ monitors.

On December 18, 2006, the EPA implemented new primary standards for $PM_{2.5}$. These new rules changed the 24-hour average standard from 65 μg/m3 to 35 μg/m3. The annual average standard of 15 $\mu g/m^3$ remains unchanged. Compliance with the 24-hour standard is determined by taking the 3-year average of the 98th percentile at each monitoring site. Compliance with the Annual standard is determined by taking the 3-year average of the spatially averaged annual means. In 2011, there were eighteen exceedances of the 24-hour standard at FEM continuous monitors and three exceedances at FRM filter-based sites (see Table 32). There were no violations of the 24-hour

standard or the annual standard. Data is summarized in Table 20 and Table 21. Averages used for determining compliance with the NAAQS are shown in Table 22 and Table 23.

Table 20 2011 $PM_{2.5}$ Summary (FRM Filter-based Monitors)

Site Name	24-hr Avg. Max ($\mu g/m^3$)	24-hr Avg. 2nd High ($\mu g/m^3$)	98th Percentile Value	Annual Avg. ($\mu g/m^3$)	Number of Samples
Mesa	102.3*	20.7	20.4	8.94	119
South Phoenix	62.0*	38.0*	31.5	11.4	117
West Phoenix	30.6	29.6	28.9	10.2	118

*Indicates an exceedance of the standard.

Table 21 2011 $PM_{2.5}$ Data Summary (FEM Continuous Monitors)

Site Name	24-hr Avg. Max ($\mu g/m^3$)	24-hr Avg. 2nd High ($\mu g/m^3$)	98th Percentile Value	Annual Avg. ($\mu g/m^3$)	Number of Samples
North Phoenix (continuous)	46.9*	24.4	23.0	9.28#	2895
Glendale (continuous)	42.7*	37.3*	27.8	9.13#	4926
Durango Complex (continuous)	52.6*	49.2*	12.0	12.4	8404
South Phoenix (continuous)	60.8*	56.3*	27.2	9.33	8395
West Phoenix (continuous)	99.1*	67.4*	31.5	11.6	8149

*Indicates an exceedance of the standard.

#The continuous FEM $PM_{2.5}$ monitors represents a part year monitor and do not constitute a 75% data completeness rate for 2011 annual averages.

Table 22 2011 $PM_{2.5}$ 3-Year Averages of 98th Percentile (FRM Monitors)

Site Name	2009 98th Percentile Value	2010 98th Percentile Value	2011 98th Percentile Value	98th Percentile 3-Year Average
Mesa	17.2	11.8	20.4	16.5
South Phoenix	34.5	24.0	31.5	30.0
West Phoenix	29.4	21.6	28.9	26.6

Table 23 2011 $PM_{2.5}$ 3-Year Averages of Annual Means (FRM Monitors)

Site Name	2009 Annual Mean	2010 Annual Mean	2011 Annual Mean	3-Year Average of the Annual Mean
Mesa	7.30	6.25	8.94	7.50
South Phoenix	11.00	9.23	11.4	10.5
West Phoenix	10.36	8.36	10.2	9.64

Additional information required by EPA is shown in Table 24.

Table 24 $PM_{2.5}$ SLAMS Data Required by EPA

CBSA	County	Population & Census Year	Annual Design Value ($\mu g/m^3$)	Annual Design Value Site	Daily Design Value ($\mu g/m^3$)	Daily Design Value Site	No. of Required Monitors	No. of Active Monitors	No. of Additional Monitors Needed
38060	Maricopa	4,263,236 (2010)	10.0	West Phoenix	29	South Phoenix	3	5	0

Sulfur Dioxide (SO_2)

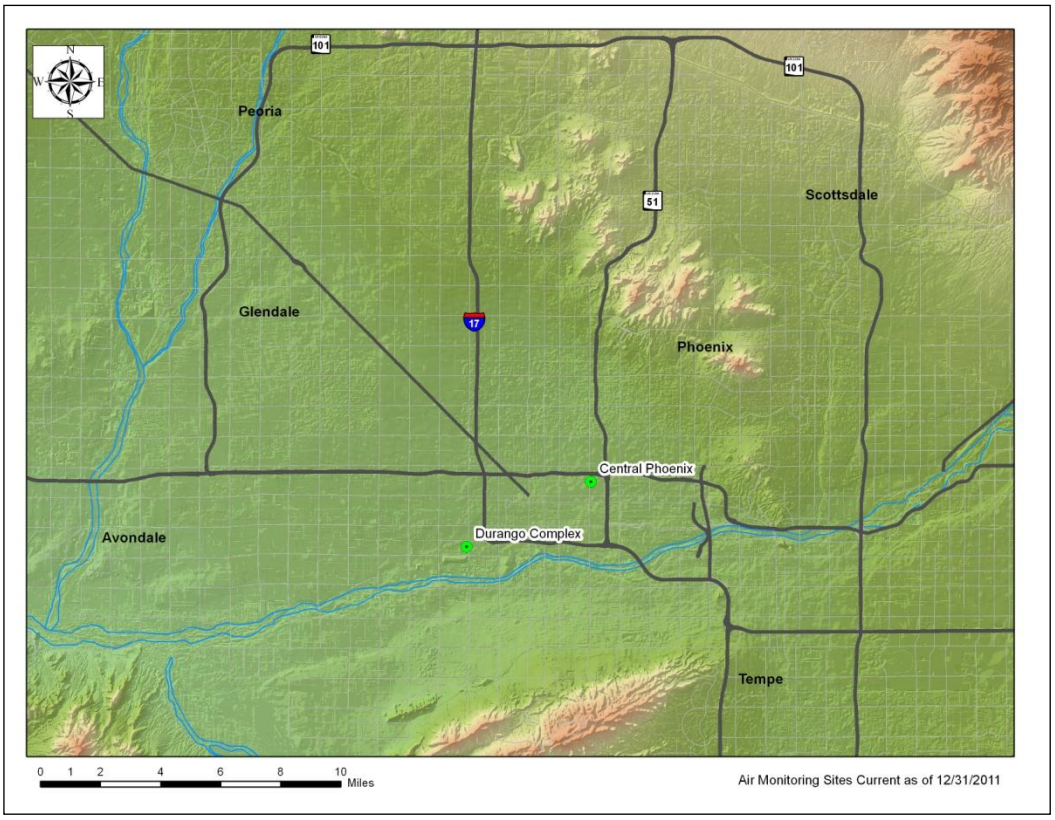


Figure 8 2011 Sulfur Dioxide Monitoring Sites

Maricopa County is in attainment for SO_2. During 2011, two SO_2 monitors were operational and were reported in AQS (Figure 8). Both of these monitors were designated SLAMS (see Table 5).

Sulfur Dioxide has a 1-hour primary standard and a 3-hour average secondary standard. The 24-hour and annual average standards were revoked in a June 2010 rulemaking. A violation of the primary standard occurs when the 3-year average of the 99th percentile of the daily maximum 1-hour average exceeds 75 ppb. A violation of the 3-hour average secondary standard occurs when a 3-hour average of 500 ppb is exceeded more than once per year. For calendar year 2011, no exceedances of the SO_2 1-hour or 3-hour standard were recorded at Maricopa County monitoring sites (see Table 25 for 1-hour values – note that EPA no longer reports 3-hour values).

Table 25 2011 Sulfur Dioxide Summary

Site	1-hour Max. (PPB)	1-hour 2nd High (PPB)	99th Percentile (PPB)	Number of Samples
Central Phoenix	10.0	9.0	8.0	8487
Durango Complex	11.0	10.0	8.0	8476

Additional information required by EPA is shown in Table 26.

Table 26 SO_2 Data Required by EPA

CBSA	County	Population & Census Year	Total SO_2 (tons/year)	Population Weighted Emission Index (million persons-tons per year)	No. of Required Monitors	No. of Active Monitors	No. of Additional Monitors Needed
38060	Maricopa	4,263,236 (2011)	81.2	346	0	2	0

2011 NAAQS Exceedance and Violation Summary

The following is a summary of the number, types and dates of exceedances and violations of the NAAQS for 2011 (Table 27).

Table 27 2011 NAAQS Exceedances and Violation Summary

Carbon Monoxide	No exceedances or violations of the 1-hr or 8-hr NAAQS standard were logged.
Nitrogen Dioxide	No exceedances or violations of NAAQS were logged.
Ozone	There were 18 unique days when at least one monitor exceeded the standard. There were 70 individual exceedances of the 8-hour standard which occurred at 14 different sites. There was one violation of the 8-hour standard.
PM_{10}	There were 19 unique days when at least one monitor exceeded the standard and 11 sites violated the 24-hour standard.
$PM_{2.5}$	There were 9 unique days when at least 1 FRM or FEM monitor exceeded the standard.. There were no violations of the 24-hour or annual standards.
Sulfur Dioxide	No exceedances or violations of NAAQS were logged.

2011 Ozone Exceedance and Violation Details

Table 28 details the dates and values for exceedances of the 8-hour ozone standard**.** The standard is 0.075 ppm for an eight hour average. Table 29 details violations of the 8-hour ozone standard. Violations are calculated with a three-year average of the fourth-highest annual 8-hour value, if this three-year average is greater than 0.075 ppm than the site violates the standard.

Table 28 2011 Ozone 8-hour Average Exceedance Details

Site	Date	Value (ppm)
Blue Point	6/09/11	0.092
	5/25/11	0.084
	5.24/11	0.082
	6/10/11	0.081
	6/20/11	0.080
	6/22/11	0.080
	6/15/11	0.077
	6/21/11	0.077
	6/14/11	0.076
Cave Creek	6/09/11	0.088
	5/25/11	0.083
	8/25/11	0.082
	6/10/11	0.081
	5/24/11	0.076
	9/01/11	0.076
Central Phoenix	6/09/11	0.081
	5/25/11	0.076
Fountain Hills	6/09/11	0.089
	5/25/11	0.083
	6/10/11	0.081
	6/21/11	0.077

	6/22/11	0.077
	7/08/11	0.077
	8/25/11	0.077
	5/24/11	0.076
	6/20/11	0.076
Glendale	6/09/11	0.083
	8/25/11	0.082
	5/25/11	0.080
	9/01/11	0.076
Humbolt Mountain	6/09/11	0.088
	6/10/11	0.085
	5/25/11	0.081
	6/13/11	0.077
	5/24/11	0.076
	6/03/11	0.076
North Phoenix	6/09/11	0.090
	9/01/11	0.083
	5/25/11	0.082
	8/25/11	0.082
	6/10/11	0.081
	7/08/11	0.077
	8/04/11	0.077
	8/17/11	0.077
Pinnacle Peak	6/09/11	0.088
	5/25/11	0.081
	6/10/11	0.080
	6/21/11	0.077
Rio Verde	6/09/11	0.088
	7/04/11	0.084
	6/10/11	0.082
	5/25/11	0.081
	5/24/11	0.080
	6/22/11	0.076
South Phoenix	6/09/11	0.081
	5/25/11	0.078
	6/10/11	0.077
	8/02/11	0.076
South Scottsdale	6/09/11	0.083
	6/10/11	0.078
	5/25/11	0.077
Tempe	6/09/11	0.076
West Chandler	8/02/11	0.079
	6/09/11	0.077
	8/04/11	0.077
West Phoenix	6/09/11	0.086
	8/25/11	0.080
	6/10/11	0.079
	5/25/11	0.078
	9/01/11	0.078

Table 29 2011 Ozone Violations

Site	Value (ppm)
North Phoenix	0.077

2011 Exceedances of the 24-Hour PM_{10} Standard

Table 30 details the site and date of exceedances of the 24-hour PM_{10} standard. Note that this table includes all exceedances, even those that will be or are in the process of being classified as exceptional events. Exceptional events are not used in calculating compliance with the NAAQS.

Table 30 2011 PM_{10} 24-hour Average Exceedance Details

Site	Date	24-hr avg. PM-10 Concentration in µg/m^3
Buckeye	7/3/11	385.6
	7/5/11	164.2
	7/18/11	196.7
	8/5/11	158.7
	8/18/11	296.8
	8/25/11	235.9
	8/27/11	226.3
	9/2/11	169.8
	11/4/11	284.9
Central Phoenix	7/3/11	279.8
	7/5/11	277.5
	7/18/11	211.2
	8/18/11	232.2
	8/25/11	308.7
	8/27/11	234.0
	9/2/11	308.0
	11/4/11	223.2
Durango	7/3/11	278.1
	7/5/11	156.9
	7/18/11	268.2
	8/25/11	437.5
	8/27/11	261.4
	9/2/11	255.4
	9/12/11	229.8
	11/4/11	251.8
Dysart	7/3/11	240.0
	7/5/11	220.0
	7/18/11	163.9
	8/25/11	273.7

	11/4/11	224.3
Glendale	7/3/11	242.8
	7/5/11	168.3
	8/25/11	241.2
	8/27/11	220.4
	11/4/11	229.0
Greenwood	7/3/11	254.6
	7/5/11	156.0
	7/18/2011	209.3
	8/25/2011	388.6
	8/27/2011	208.2
	9/2/2011	198.1
	11/4/2011	231.4
Higley	7/3/11	196.8
	7/4/11	198.5
	7/5/11	375.7
	7/7/11	266.9
	8/28/11	175.8
	9/2/11	213.5
	10/4/11	157.8
	11/4/11	258.1
North Phoenix	9/11/11	184.1
	11/4/11	186.3
South Phoenix	3/12/11	168.5
	7/3/11	280.7
	7/5/11	207.4
	7/18/11	303.7
	8/18/11	179.0
	8/25/11	421.5
	8/27/11	301.5
	9/2/11	339.3
	11/4/11	231.4
West Chandler	2/19/11	167.9
	7/3/11	199.2
	7/5/11	360.6
	7/7/11	205.8
	8/3/11	249.3
	8/18/11	186.1
	8/25/11	278.6

	8/27/11	229.3
	9/2/11	387.5
	11/4/11	670.2
West 43rd	7/3/11	250.7
	7/18/11	245.3
	8/25/11	370.3
	8/27/11	292.6
	9/2/11	219.7
	9/12/11	162.2
	11/4/11	242.9
West Phoenix	7/3/11	244.2
	7/5/11	267.0
	7/18/11	159.7
	8/25/11	212.6
	8/27/11	164.6
	9/11/11	168.8
	9/12/11	200.6
	11/4/11	279.6
Zuni Hills	7/3/11	260.8
	8/25/11	212.8
	11/2/11	411.9
	11/4/11	258.6

2011 Violations of the 24-Hour PM_{10} Standard

The 24-hr NAAQS for particulates is violated when the rate of expected occurrence of exceedances (samples greater than or equal to 155 µg/m^3) is greater than one over three consecutive years (Table 31) (40 CFR Part 50.6 (a)).

Table 31 Violations of the 24-hour PM_{10} Standard

Site	2009		2010		2011		Rate of Expected Exceedances
	24-hr Max. (µg/m^3)	Expected Exceedances	24-hr Max. (µg/m^3)	Expected Exceedances	24-hr Max. (µg/m^3)	Expected Exceedances	
Buckeye	439‡	3.022	113	0	385‡	9	4.0
Central Phoenix	153	0	106	0	308‡	8.022	2.7
Durango Complex	277‡	3	111	0	436‡	8	3.7
Dysart	227‡	1	81	0	273‡	5	2.0
Glendale	196	5.412	92	0	242‡	5.095	3.5
Greenwood	229‡	1.011	158	1.045	388‡	7	3.0
Higley	275‡	2.136	83	0	362‡	8	0.7
Mesa	87	0	86	0	127	0	0.0
North Phoenix	69	0	44	0	186‡	3.629	1.2
South Phoenix	250‡	3	120	0	420‡	9.023	4.0
South Scottsdale	135	0	37	0	119	0	0.0
West Chandler	220‡	6.412	76	0	669‡	11	5.8
West 43rd Avenue	317‡	7	112	0	369‡	7.066	4.7
West Phoenix	210	1.022	86	0	279‡	7.457	2.8
Zuni Hills	27#	0	70	0	411‡	4	**N/A#**

■ Indicates violation of the standard.
# Indicates <75% data available.
‡ Indicates Exceptional Events occurred at this site. The listed value is the highest official AQS reading at time of publication.

Exceptional Events

Table 31 lists the official records in AQS (at time of publication) for exceedances and violations. Some of these 2009-2011 exceedance days were petitioned to be classified as exceptional events and a request made to the EPA to remove them from official consideration as compliance data. EPA approval of these requests can take over a year. .

2011 Exceedances of the 24-Hour $PM_{2.5}$ Standard

The 24-hour NAAQS for $PM_{2.5}$ is 35 µg/m^3; if the 24-hour block average (midnight-to-midnight) surpasses this value than it is counted as an exceedance. The 24-hour standard is violated when the three year average of the 98th percentile exceeds 35 µg/m^3. There were no violations in 2011.

Table 32 2011 PM2.5 Exceedances

Site	Date	Value (ppm)	Method
Durango	07/05	52.6	Continuous FEM
	12/25	49.2	Continuous FEM
	08/27	43.0	Continuous FEM
	08/25	39.4	Continuous FEM
	07/18	36.0	Continuous FEM
Glendale	08/27	42.7	Continuous FEM
	07/05	37.3	Continuous FEM
Mesa	07/05	102.3	Filter-based FRM
North Phoenix	09/02	46.9	Continuous FEM
South Phoenix	12/25	60.8	Continuous FEM
	12/31	56.3	Continuous FEM
	07/05	55.5	Continuous FEM
	01/01	52.9	Continuous FEM
	12/24	51.9	Continuous FEM
	07/05	62.0	Filter-based FRM
	08/25	38.0	Filter-based FRM
West Phoenix	01/01	99.1	Continuous FEM
	12/25	67.4	Continuous FEM
	12/31	61.2	Continuous FEM
	12/24	45.1	Continuous FEM
	07/05	35.8	Continuous FEM

Pollution Trends

The following charts depict the most recent three-year trends (2009-2011) for each criteria pollutant. See Table 4 for explanations of site abbreviations.

Carbon Monoxide

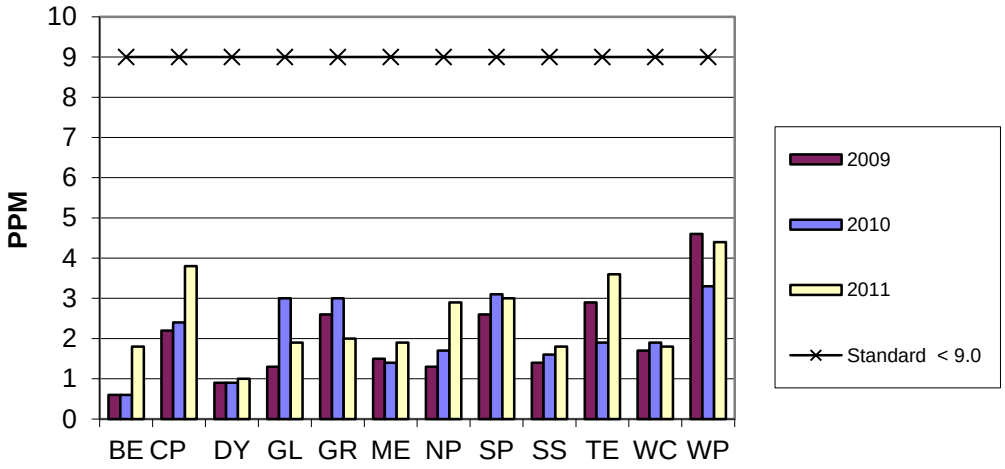


Chart 1 2009-2011 8-hr Avg. Carbon Monoxide Maximum Values

Nitrogen Dioxide

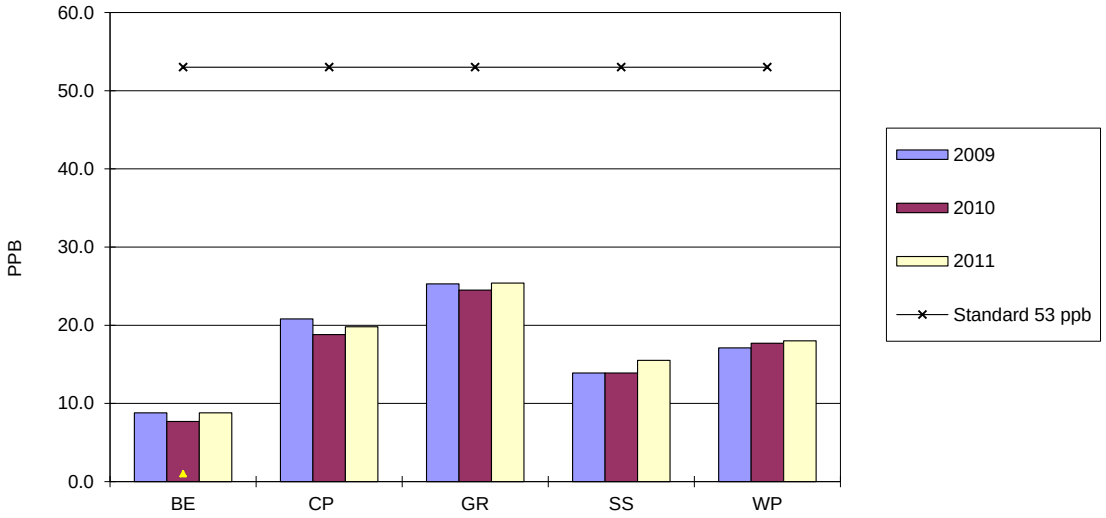


Chart 2 2009-2011 Nitrogen Dioxide Annual Average Readings

Ozone

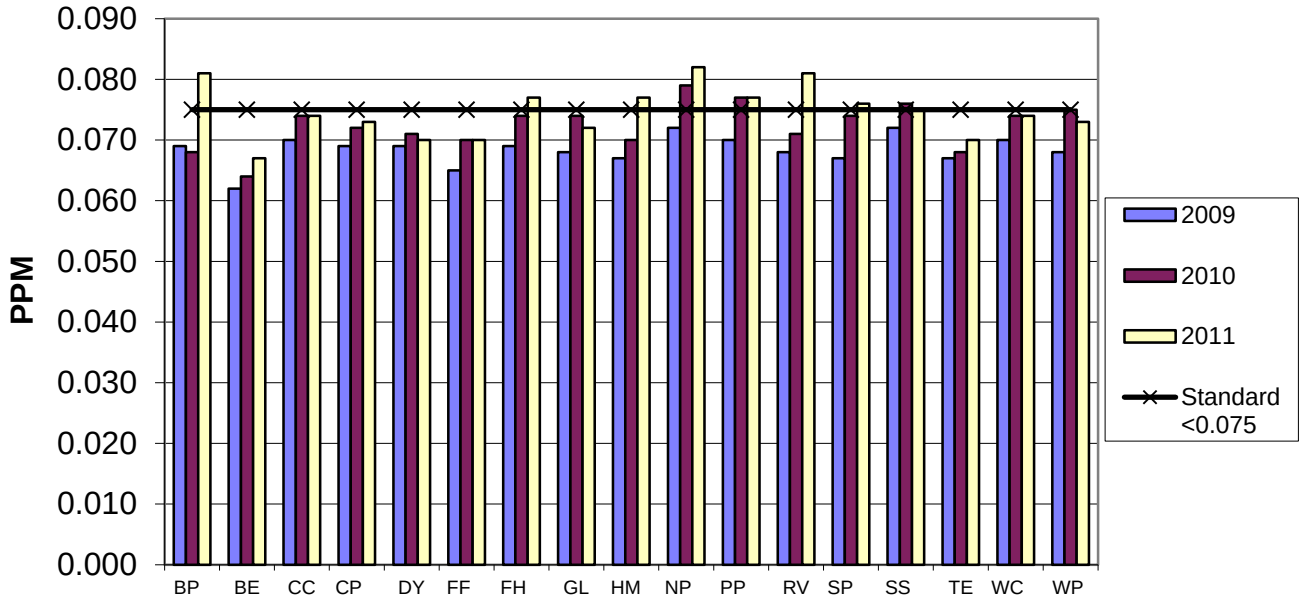


Chart 3 2009-2011 Ozone 4th High 8-hr Average

Particulates

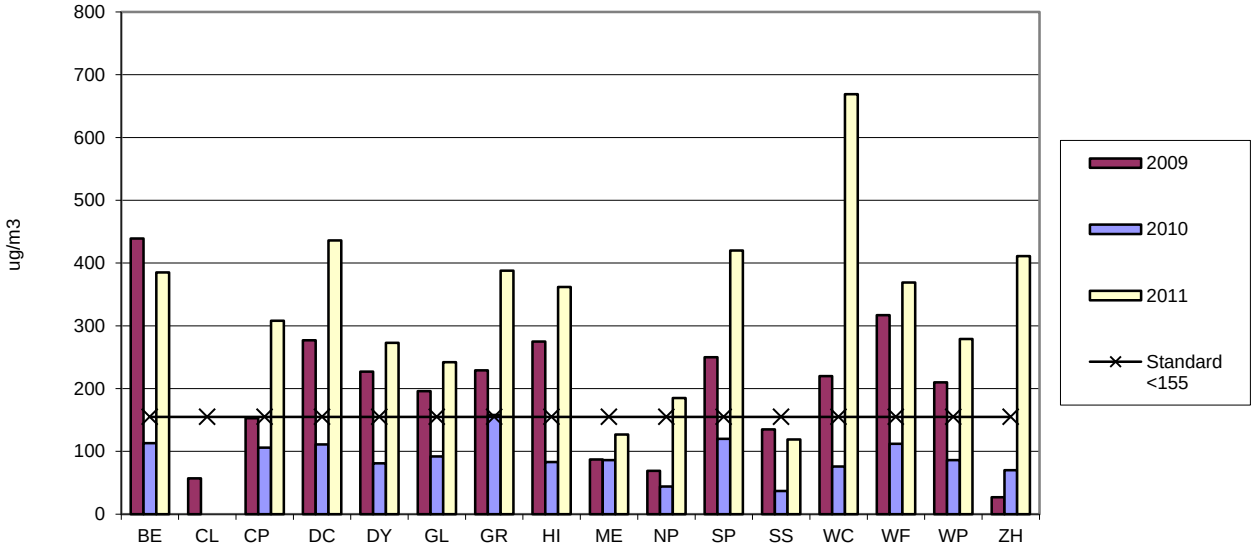


Chart 4 2009-2011 PM_{10} 24-hr Average Maximum Values

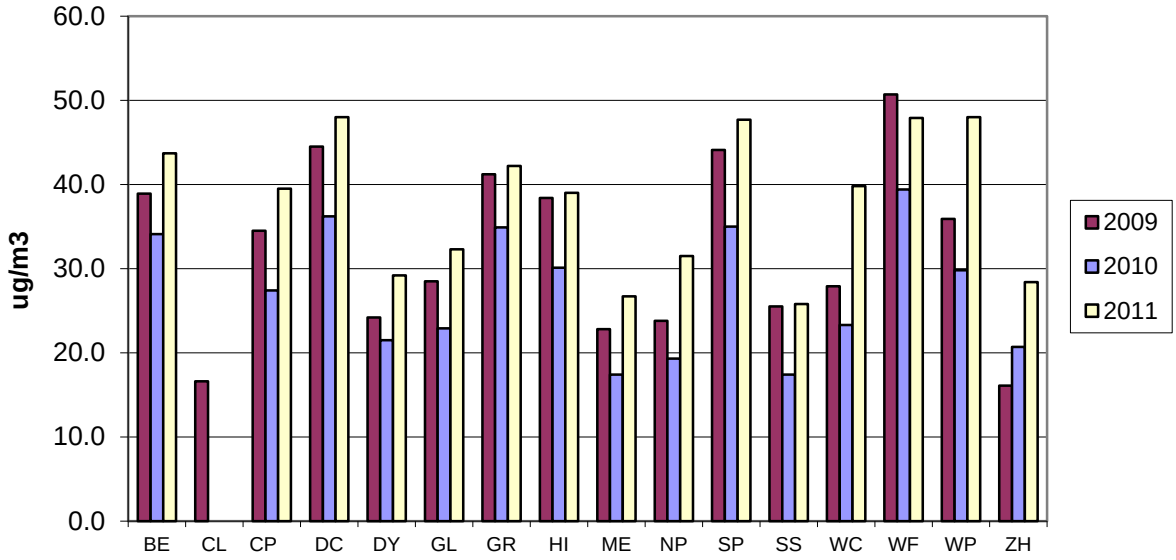


Chart 5 2009-2011 PM_{10} Annual Average

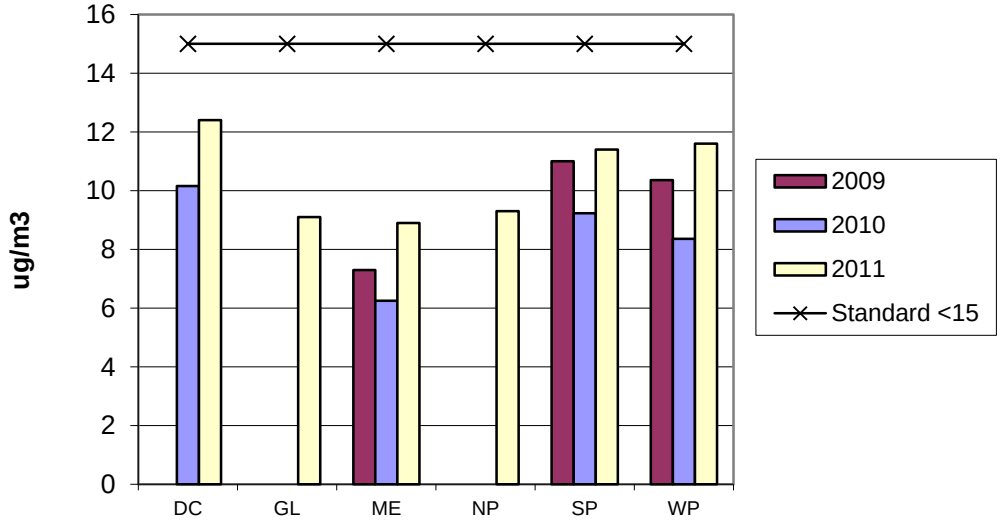


Chart 6 2009-2011 $PM_{2.5}$ Annual Average

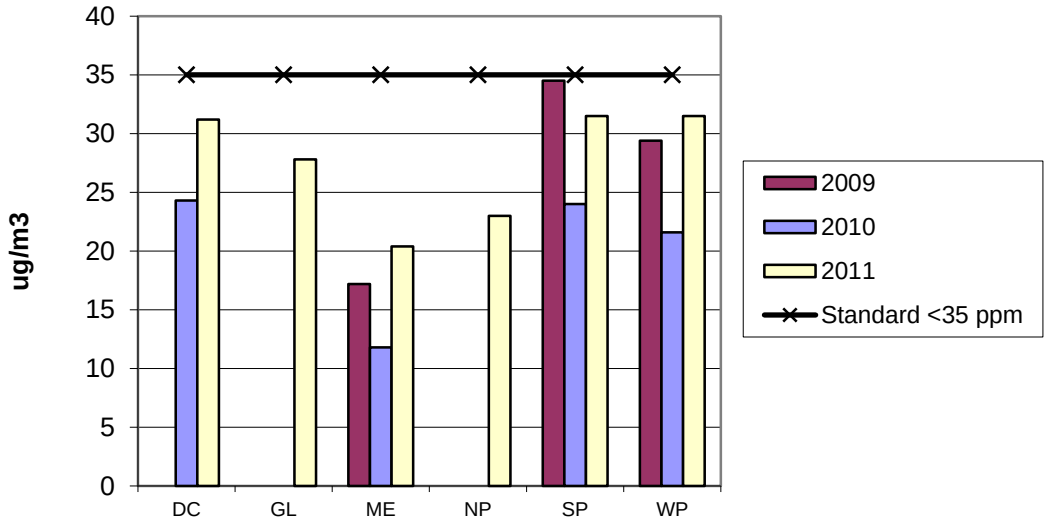


Chart 7 2009-2011 $PM_{2.5}$ 98th Percentile

Sulfur Dioxide

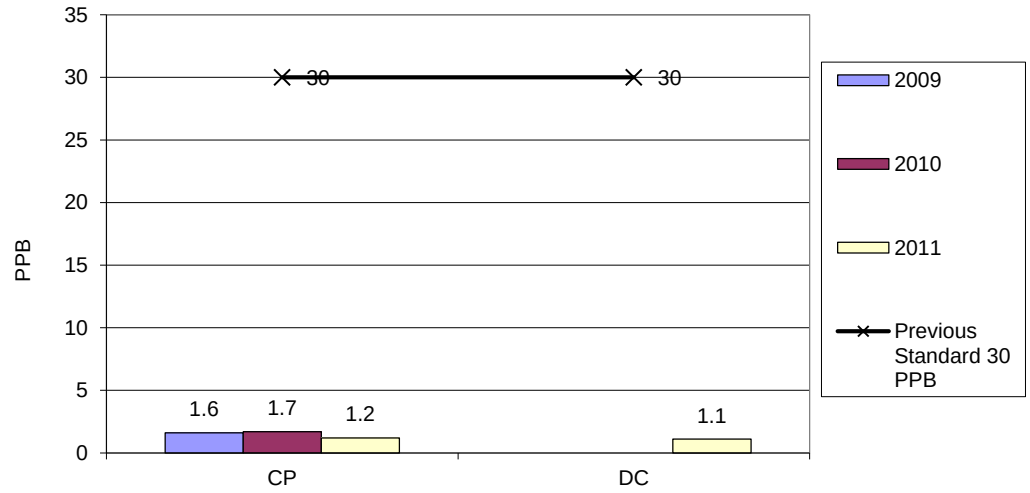


Chart 8 2009-2011 Sulfur Dioxide Annual Average

Special Projects and Network Changes

Air quality issues such as the SIP, natural events policy, and permits for new sources are diverse and controversial subjects for the citizens of Maricopa County. Since no policies can be made without high-quality monitoring data, MCAQD's Air Monitoring Division strives to provide the most reliable and relevant air monitoring data to the public. The following is a list of projects and changes that have occurred during the year 2011.

Seasonal Monitors

The department continues to run some of its carbon monoxide (CO) monitors on a seasonal basis (see Table 33). Having part of the network operating seasonally allows the county to upgrade instruments, perform preventive maintenance, extend the life expectancy of the instruments, reduce replacement costs, and better utilize its QA and QC resources on the remaining instruments. During the off-season the number of CO monitors operating still exceeds the minimum EPA requirements.

Table 33 Seasonal Monitors

Seasonal Carbon Monoxide Monitors (Operational Sept. 1 – Apr. 1)
Buckeye
Dysart
Glendale
Mesa
North Phoenix
South Phoenix
South Scottsdale
Tempe
West Chandler

The Consideration of Additional Sites/Monitors

The department continues to evaluate the PM_{10} network for possible additional sites for determining the impact on ambient pollution levels of significant sources or source categories. The significant sources would include industry and agriculture. The allocation of both financial and personnel resources continue to remain significant obstacles to the establishment of new monitoring sites.

Lead Monitoring

In conjunction with the recent strengthening of the lead NAAQS, EPA is improving the existing national lead monitoring network by requiring monitors to be placed in areas with sources such as industrial facilities that emit one ton or more per year (tpy) of lead and in urban areas with more than 500,000 people. In 1997, the EPA allowed MCAQD to stop monitoring for airborne lead because the data showed values were far below the standard. With the new more stringent standard, the department once again monitored for airborne lead. MCAQD located a new lead monitoring site at the Deer Valley airport in North Phoenix, which was chosen because federal emissions inventories have indicated that the Deer Valley Airport emits more than one tpy of lead. This is due to the lead contained in the general aviation fuel (Deer Valley is a general aviation

airport). The site began operation in July 2010 and has two co-located filter-based lead monitors which operate on a 1-in-6 day schedule.

Other Network Changes/Special Projects/Comments

- **Air Quality Forecasting**

  ADEQ, in conjunction with the MCAQD, has developed a year-round air quality forecasting capability for the Phoenix metropolitan area. ADEQ takes the lead on air quality forecasting and issuing of High Pollution Advisories, while the MCAQD provides monitoring data and designates No-Burn Days.

- **Air Monitoring Website**

  The department is continuing its distribution of air monitoring data to the public by posting one-hour and 5-minute continuous data on the Internet (see "Maricopa County Interactive Pollution Map" section below).

  Maricopa County Air Quality Dept: http://156.42.96.39/alert/Google/air2.html

Mobile Monitoring Program

The department received approval in late 2006 from the Maricopa County Board of Supervisors to start a Mobile Monitoring program. This program enables the department to do more source-specific air monitoring (as opposed to the ambient monitoring that we have historically performed); the ability to track down sources of air pollutants; the ability to collect and analyze hazardous air-pollutant (HAP) samples; and the ability to respond to emergencies. The program is useful for collecting and analyzing scientific data for various projects, including assisting our compliance division in the enforcement of air pollution control regulations.

The equipment for this program includes a vehicle outfitted with air monitoring and analytical equipment. Monitoring and sampling equipment consists of various meteorological, criteria pollutant, and HAP monitors. Analytical equipment includes a portable Gas-Chromatograph/Mass Spectrometer (GCMS) and geographical positioning systems. Air monitoring equipment has also been placed in a mobile trailer that can be quickly moved to areas to operate independently. We also have the ability to use geographical information systems to build geo-referenced models of sampled pollutants.

MCAQD has developed quality control procedures for the Mobile Monitoring program and we spent much of 2010 and 2011 assisting our compliance division with complaint investigations, performing educational outreach, and assisting in the development of the Salt River characterization study.

In 2012, MCAQD's Air Monitoring Division is equipped to respond to air quality emergencies throughout Maricopa County such as heavy smoke from fires or toxic releases that threaten air quality. All MCAQD Monitoring personnel are required to meet OSHA medical monitoring and U.S. EPA's 40 CFR 1910.120 training. Members remain current through regular recertification**.**

Near-Road NO_2 Monitoring

In February of 2010, EPA promulgated new minimum monitoring requirements for the nitrogen dioxide (NO_2) monitoring network in support of a newly revised 1-hour NO_2 NAAQS. In the new monitoring requirements, state and local air monitoring agencies are required to install near-road NO_2 monitoring stations in larger urban

areas where hourly NO_2 concentrations in the near-road environment are believed to be the highest in that urban area.

The regulations require Core Based Statistical Areas (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 NO_2 monitors within that CBSA. Based on the regulation, Maricopa County is required to have two near-road NO_2 monitors. MCAQD has applied for and received EPA grant money to install the first of two near-road monitors.

Important parameters for traffic activity that can be readily obtained for near-road monitoring assessments include the number of vehicles, the fleet mix, vehicle speeds (traffic congestion), local terrain and topography, and meteorology. Each of these parameters has an effect on the concentration and characteristics of the near-road pollutants. State and local ambient air monitoring agencies are required (per 40 CFR Part 58 Appendix D, Section 4.3.2.a) to use the latest available census figures (e.g., census counts and/or estimates) and available traffic data in assessing what monitoring may be required. The required near-road NO_2 monitoring network is to be implemented and operational by January 1, 2013.

We are in the process of determining specific locations following procedures found in the EPA Technical Assistance Document.

Rapid Response Notification System

Maricopa County enjoys many days with clean air. However, there are several days during the year when air pollution levels approach or exceed federal health standards. It is those days when action needs to be taken to avoid adding pollution to the air.

In spite of the robust ambient air monitoring network maintained by MCAQD, a lot of pollution can build up in 60 minutes of time. If a pollution causing event were to go unaddressed, the air quality levels could greatly exceed a federal health standard causing immediate health impacts to county residents and threaten our attainment status with the U.S. EPA.

The Rapid Response Notification System was developed to provide a three part value: real-time air monitoring data, a notification system to alert residents and stakeholders of a pollution problem, and onsite response from department inspectors and stakeholders to identify and discourage pollution activity to reduce the risk of pollution impacts. The Rapid Response Notification System serves as a tool for residents, intergovernmental stakeholders and staff of MCAQD.

When a Rapid Response notification is broadcast, the department will require dust control permit holders to inspect their site as soon as possible and employ Best Available Control Measures to stabilize all disturbed soils to reduce blowing dust. Permittees with multiple sites should contact each site supervisor to ensure compliance with ambient air quality standards.

Emergency Response Notification System

MCAQD assists in monitoring the public exposure to air pollutants including information about the characteristics, ambient concentration and meteorological data to support decisions on pollutant dispersion, direction and protection of populated areas.

MCAQD's Air Monitoring Division is equipped to respond to air quality emergencies throughout Maricopa County such as heavy smoke from fires or toxic releases that threaten air quality. All MCAQD Monitoring personnel are trained for hazardous materials and emergency response based on U.S. EPA and OSHA approved health and safety guidelines. Team members are required to meet OSHA medical monitoring and U.S. EPA's 40 CFR 1910.120 training. Members remain current through regular recertification.

In responding to emergencies, MCAQD has a wide variety of specialized equipment to assess air quality and meteorological conditions. These include a large self powered van equipped with a gas chromatograph/mass spectrometer (GS/MS), carbon monoxide, ozone, sulfur dioxide, nitrogen dioxide, hydrosulfide and particulate monitors. There is an onboard meteorological station with video cameras and a centralized data acquisition system (DAS) to collect, store, and distribute the data. It also has the ability to collect air samples (canisters) to bring back to the GC/MS for analysis.

ADDITIONAL COMMENTS

Arizona Department of Environmental Quality Network

The ADEQ operates its own monitoring network within the State of Arizona, including some sites within Maricopa County. In addition to these state-run sites, ADEQ also utilizes several MCAQD sites to operate their own monitoring equipment. The ADEQ does a variety of ambient pollution, air toxics, visibility, and meteorological monitoring. One of the main sites in Maricopa County that is operated by ADEQ is the JLG Supersite in central Phoenix. The Supersite is a National Core multi-pollutant monitoring station (NCore) and is part of the national monitoring network (MCAQD's monitors, on the other hand, are part of the State and Local Air Monitoring network (SLAMS)).

For more information about the state's network or the NCore JLG Supersite consult the ADEQ's Annual Network Plan on their website at:
http://www.azdeq.gov/function/forms/reports.html.

EPA Ozone Mapping

The AIRNow website (http://airnow.gov/) provides real-time air pollution (ozone and $PM_{2.5}$) maps for major metropolitan areas around the United States, including the Phoenix Metropolitan Area. MCAQD has participated in the program since 2001.

MCAQD, in cooperation with ADEQ and the Pinal County Air Pollution Control District, has expanded the area that the maps cover. This area now includes sites as far east as Queen Creek, as far south as Casa Grande, and as far west as Palo Verde.

This website can be used as a tool for which the public can plan their daily activities and limit their exposure to air pollution. Eight-hour average peak ozone concentration maps and real-time eight-hour ozone animation maps are provided. Colors on the map indicate different concentrations of ozone pollution. The one-hour average values are given in parts per billion. The eight-hour averages are converted into Air Quality Index (AQI) numbers. The AQI is based on the NAAQS. The index was developed to convert pollution measurements into a common index that the general public can more easily understand.

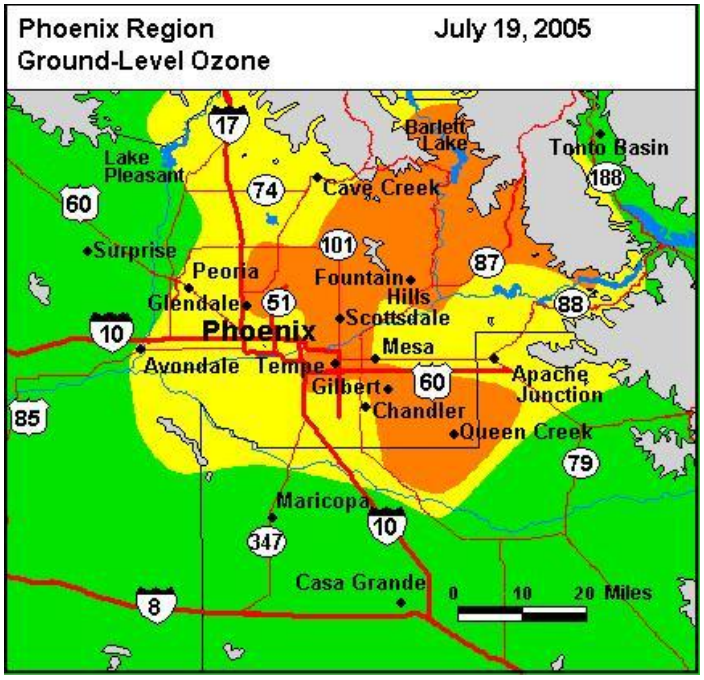


Figure 9 EPA AIRNow Website

Different colors on the map correspond to different categories of air quality and health impacts (**Error! Reference source not found.**).

Table 34 Air Quality Index

Index	Color Designation	Air Quality	Health Impact
0 – 50	Green	Good	No harmful effects expected.
51 – 100	Yellow	Moderate	Unusually sensitive people should consider limiting prolonged outdoor exertion.
101 – 150	Orange	Unhealthy for Sensitive Groups	Active children & adults, people with respiratory disease (i.e., asthma) should limit prolonged outdoor exertion.
151 – 200	Red	Unhealthy	Everyone should observe caution. Avoid prolonged outdoor exertion.
201 – 300	Purple	Very Unhealthy	Avoid all outdoor exertion. Use extreme caution outdoors
301 – 500	Maroon	Hazardous	Everyone should avoid all outdoor exertion.

The animated map is updated every hour from 8am to 8pm seven days a week. Updates to the site will be made during the ozone season (April through October).

REFERENCES

1. Code of Federal Regulations, Chapter 40, Part 50 and 58, 1997

2. EPA's AirData (AQS) information: http://www.epa.gov/air/data/index.html

3. EPA's NAAQS Info: http://www.epa.gov/air/criteria.html

4. SIP Information: http://www.azdeq.gov/environ/air/plan/index.html

5. EPA's Air Program Information: http://www.epa.gov/rgytgrnj/programs/artd/air/quality/quality.htm

6. Maricopa County Air Quality Department Air Monitoring Map: http://aqwww.maricopa.gov/AirMonitoring/SitePollutionMap.aspx.

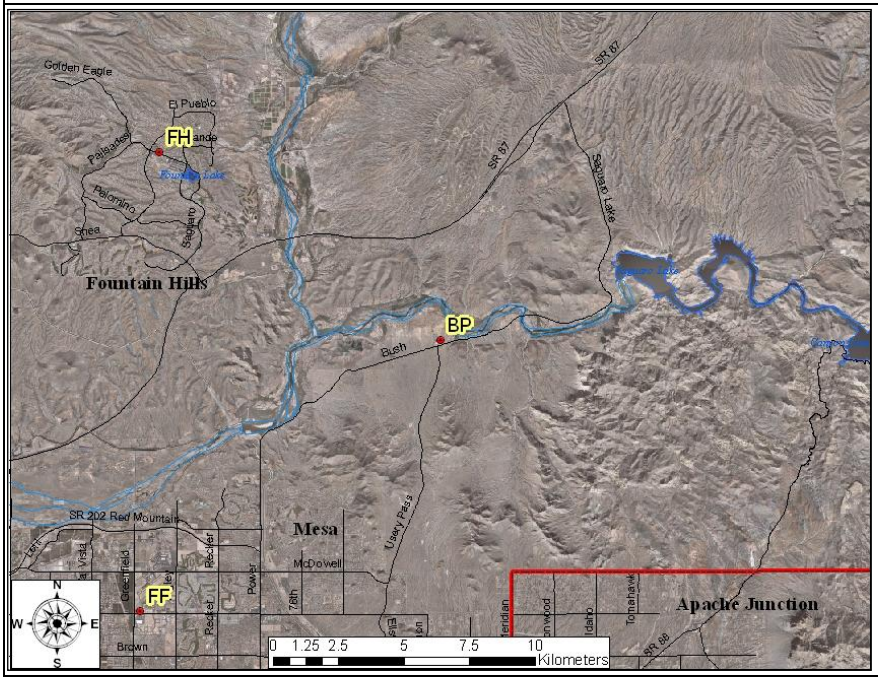
7. AIRNow: http://airnow.gov/

8. Criteria Pollutant Information: http://www.epa.gov/air/urbanair/6poll.html

9. Maricopa County Air Quality Department Prior Network Reviews: http://www.maricopa.gov/aq/divisions/monitoring/network.aspx.

APPENDIX I - Monitoring Site Details (Photos and Specific Information)

Blue Point (BP) (04-013-9702)



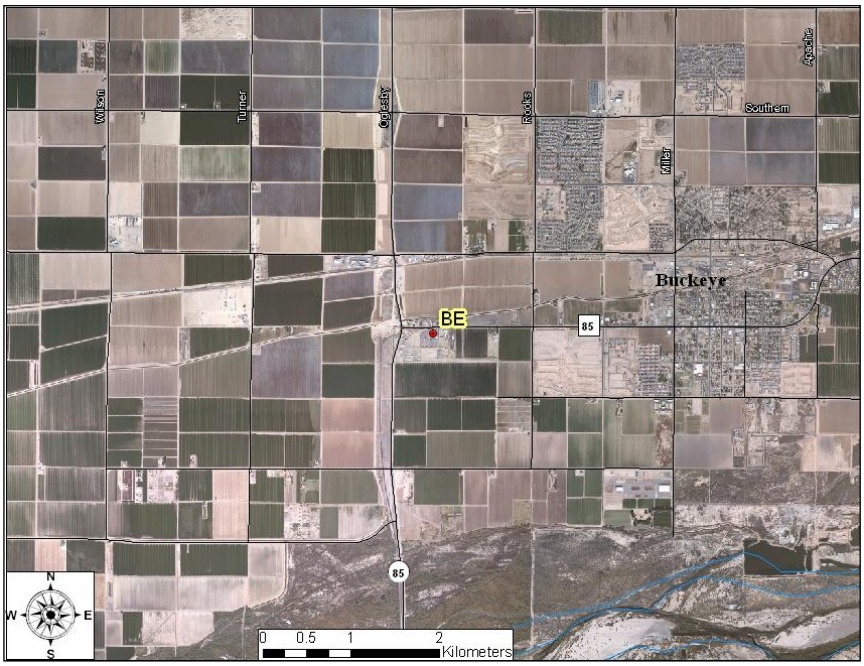
Location: Bush Highway and Usery Pass Rd., Maricopa County
Spatial Scale: Urban
Monitoring Objective: Maximum Ozone Concentration

Site Description*:* The Blue Point site became operational in July 1995 and is located in a Maricopa County Sheriff's Sub-Station in Tonto National Forest. This site represents the maximum ozone concentration, and urban-scale downwind transport conditions. This site is located approximately 40 miles east of the Phoenix metropolitan area. Ozone is the only criteria pollutant monitored at this SLAMS station. Wind speed and direction are also monitored at the site.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.073	0.076*	0.092*
	O_3 #Daily Exceedances >0.075 ppm	0	1	9
	O_3 Three year average of 4th High	0.067	0.070	0.073

*Indicates an exceedance of the standard.

Buckeye (BE) (04-013-4011)



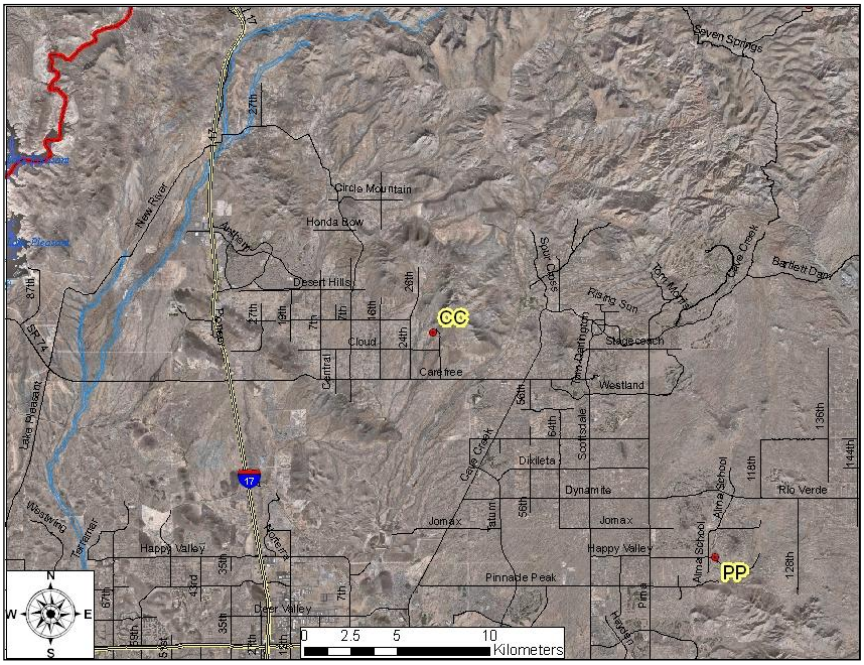
Location: US 85 & MC 85, Buckeye
Spatial Scale: Neighborhood and Urban (NO_2)
Monitoring Objective: Population Exposure and Source Oriented (NO_2)

Site Description: The Buckeye site was established on August 1, 2004. This site is a SLAMS location for carbon monoxide, ozone, PM_{10}, and NO_2 criteria pollutants. The site is located in the Maricopa County Department of Transportation Southwest Facility. The immediate area is agriculture and encroaching residential development. The NO_2 monitors at this site are classified with the Source Oriented objective; the sources are complexes of power plants that are located approximately 15 miles to the west. The PM_{10} monitor at this site was changed from a 1-in-6 day to hourly schedule as of October 1, 2004.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	0.6	0.6	0.9
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.069	0.066	0.072
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	0	0
	O_3 Three year avg. of 4th High	0.064	0.065	0.064
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	439*‡	113	385*
	Number exceedances 24-hr PM_{10}	3‡	0	9
	Annual PM_{10} Avg. (µg/m^3)	38.9	34.1	43.7
Nitrogen Dioxide	Annual NO_2 Avg. (PPB)	8.52	7.65	8.8
	NO_2 1-hour Average 98th Percentile	35.0	35.0	36.0

*Indicates an exceedance of the standard.
#Indicates <75% data recovery.
‡Indicates Exceptional Events at this site. Listed value is the highest official current AQS reading.

Cave Creek (CC) (04-013-4008)



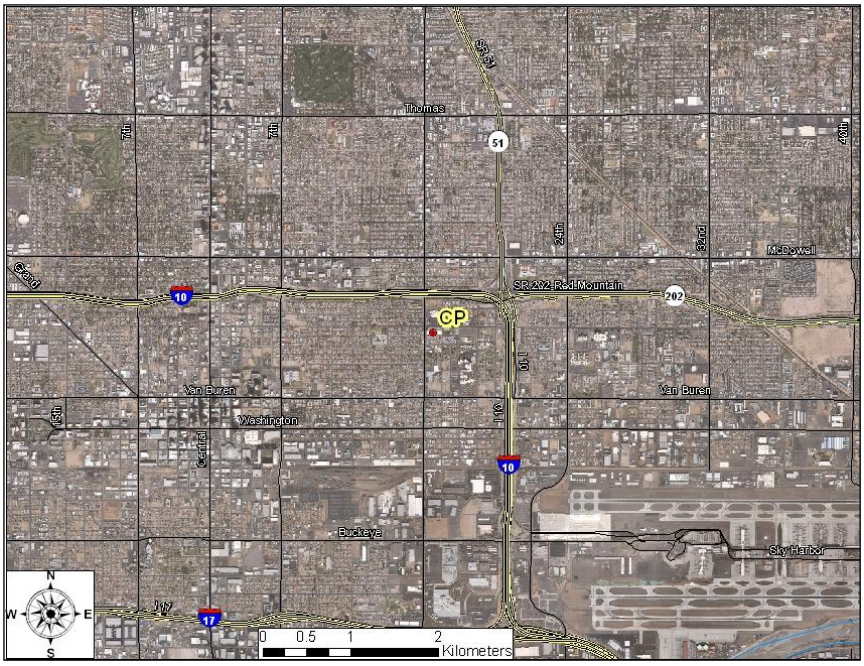
Location: 32nd St. & Carefree Highway, Cave Creek
Spatial Scale: Urban
Monitoring Objective: Maximum Ozone Concentration

Site Description: The Cave Creek site became operational in August 2001 and is located in the Maricopa County Cave Creek Recreation Area (Park Office). This site was chosen through discussions on modifying the ozone network for the 2005 8-hr ozone standard. Ozone is the only criteria pollutant monitored at this SLAMS station. Wind speed and direction are also monitored at the site.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.073	0.078*	0.088*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	1	6
	O_3 Three year average of 4th High	0.075	0.074	0.075

*Indicates an exceedance of the standard.
#Indicates a violation of the standard.

Central Phoenix (CP) (04-013-3002)



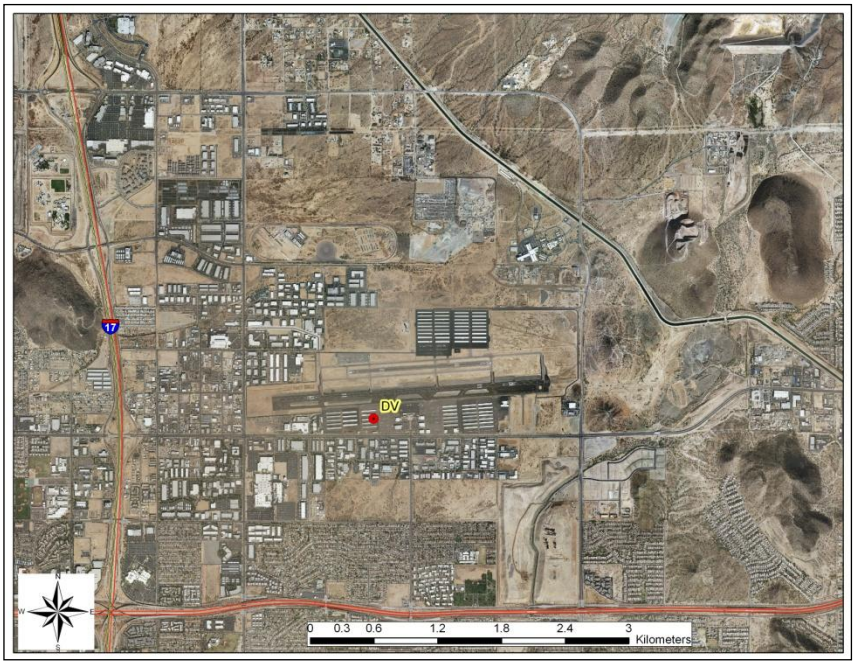
Location: 19th St. and Roosevelt
Spatial Scale: Neighborhood
Monitoring Objective: High Population Exposure and Highest Concentration (NO_2 and SO_2)

Site Description: The Central Phoenix site has been in existence for over four decades and has provided a long-term historical database with a high rate of data recovery. The site is representative of high population exposure (greater than 5000 people per square mile) in the central Phoenix area. This site is a SLAMS location for carbon monoxide, ozone, PM_{10}, SO_2 and NO_2 criteria pollutants.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	2.2	2.4	2.1
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.074	0.078*	0.081*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	2	2
	O_3 Three year avg. of 4th High	0.070	0.071	0.071
PM_{10}	Max. 24-hr PM_{10} Avg. Continuous ($\mu g/m^3$)	153	106	308*
	Number exceedances Continuous 24-hr PM_{10}	0	0	8
	Annual PM_{10} Avg. Continuous ($\mu g/m^3$)	34.5	27.4	39.5
Nitrogen Dioxide	Annual NO_2 Avg. (PPB)	20.90	18.82	19.8
	NO_2 1-hour Average 98th Percentile (PPB)	66.0	59.0	60.0
Sulfur Dioxide	Max. 24-hr SO_2 Avg. (PPB)	5	5	4.1
	Number of Exceedances SO_2	0	0	0
	Annual SO_2 Avg. (PPB)	1.6	1.7	1.2

*Indicates an exceedance of the standard.

Deer Valley (DV) (04-013-4018)



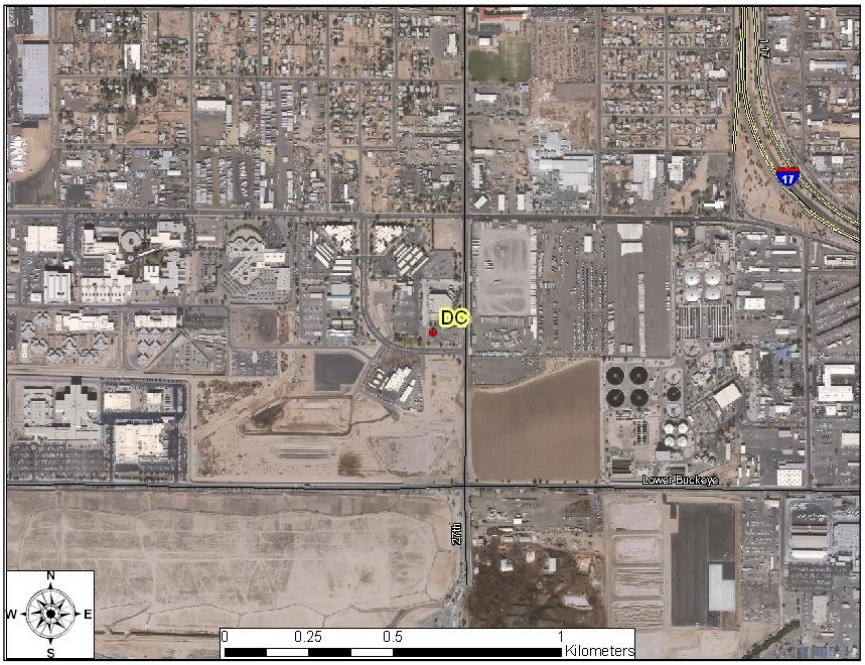
Location: 7th Avenue & Deer Valley Rd.
Spatial Scale: Middle
Monitoring Objective: Source Oriented

Site Description: The Deer Valley site is located on the grounds of the Deer Valley Airport in north Phoenix. This site was started because changes in the lead NAAQS necessitates that MCAQD begin lead monitoring again (lead monitoring was discontinued in 1997 because ambient concentrations were consistently much lower than the standard at that time). Deer Valley Airport is one of the busiest general aviation airports in Maricopa County; since general aviation fuel still contains lead additives, this is thought to be the largest single source of lead in the county.

		2009	2010	2011
Lead	Max. 24-hr Pb Avg. (µg/m^3)	N/A	0.066	0.07
	Pb #Daily Exceedances >0.15 µg/m^3	N/A	0	0
	Pb Maximum Quarterly Average	N/A	0.0274*	0.0329

*Incomplete data, only two quarters of data are available for calendar year 2010.

Durango Complex (DC) (04-013-9812)



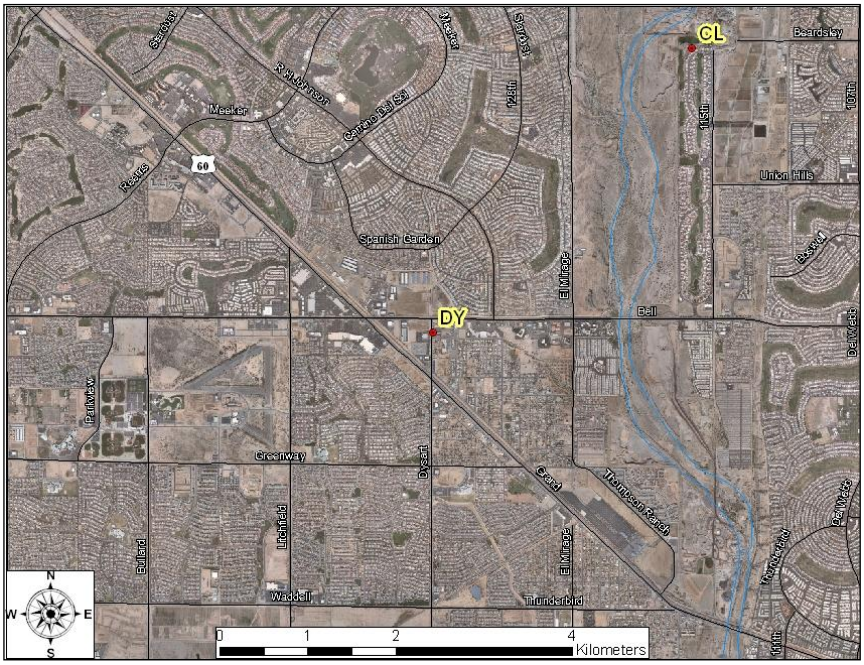
Location: 27th Ave and Durango St.
Spatial Scale: Middle
Monitoring Objective: Highest Concentration

Site Description: This site is located in the Maricopa County Flood Control District storage yard one mile northwest from the former Salt River site, which was closed in 2002. Sampling began on January 6, 1999 with the intent to replace the Salt River site. However, in 2000 the EPA determined that the site is not equivalent to the Salt River site, which prompted the opening of the West 43rd Avenue site. Continuous particulate monitors (SLAMS PM_{10} and $PM_{2.5}$) are located at this site. Note that the $PM_{2.5}$ monitor is a continuous FDMS-TEOM monitor, which was not a FEM monitor before 2010, so data from before then was not used for NAAQS compliance purposes. There are also meteorological monitors (wind speed/direction and atmospheric pressure) located at the site.

		2009	2010	2011
Sulfur Dioxide	Max. 24-hr SO2 Avg. (PPB)	N/A	N/A	4.1
	Number of Exceedances SO2	N/A	N/A	0
	Annual SO2 Avg. (PPB)	N/A	N/A	1.1
PM_{10}	Max. 24-hr PM_{10} Avg. Continuous (µg/m^3)	277*‡	111	436*
	Number exceedances Continuous 24-hr PM_{10}	3‡	0	8
	Annual PM_{10} Avg. Continuous (µg/m^3)	44.5	36.2	48.0
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. (µg/m^3)	213.0*	64.1*	52.6*
	No. of daily exceedances	@	1	4
	Annual $PM_{2.5}$ Avg. (µg/m^3)	11.81@	10.16#	12.4
	98th Percentile Value (µg/m^3)	@	24.3	31.2

*Indicates an exceedance of the standard.
‡Indicates exceptional events at this site. Listed value is the highest official current AQS reading.
#Indicates <75% data completeness.
@The $PM_{2.5}$ monitor at Durango was not an official FEM monitor until 2010, so values recorded before do not count toward compliance standards.

Dysart (DY) (04-013-4010)



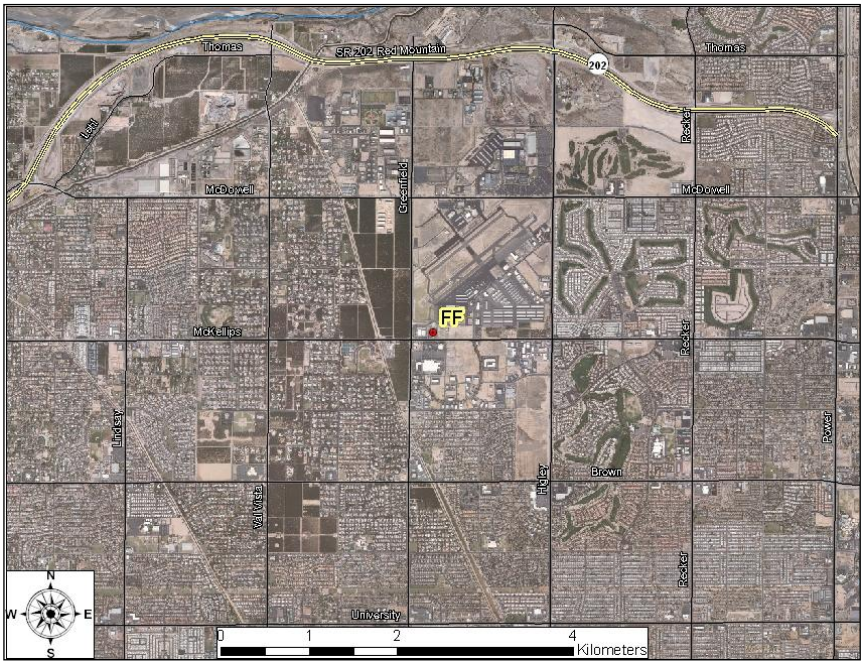
Location: Bell Rd. & Dysart Rd., Surprise
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: The Dysart site was established in July 2003. It is located at the Maricopa County Facility Maintenance Yard at the corner of Bell Rd. and Dysart Rd. The site is in a growing population area in the north-west valley. The land use around the site consists of subdivisions of single family homes, commercial, and industrial. The site is approx. one mile west of the Agua Fria riverbed. Seasonal carbon monoxide, seasonal ozone, and PM_{10} (all SLAMS) are the criteria pollutants monitored at this station. In September 2009 the PM_{10} monitor was upgraded from a 1-in-6 day scheduled monitor to a continuous-monitoring TEOM. This upgrade took place in accordance with regulations due to a PM_{10} exceedance which occurred at the site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.0	0.9	0.5
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.077	0.082*	0.075
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	1	0
	Three year avg. of 4th High	0.066	0.069	0.070
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	227*‡	81	273*
	Number exceedances 24-hr PM_{10}	1	0	5
	Annual PM_{10} Avg. (µg/m^3)	24.2	21.5	29.2

*Indicates an exceedance of the standard.
‡Indicates exceptional events at this site. Listed value is the highest official current AQS reading.
#Indicates <75% data recovery.

Falcon Field (FF) (04-013-1010)



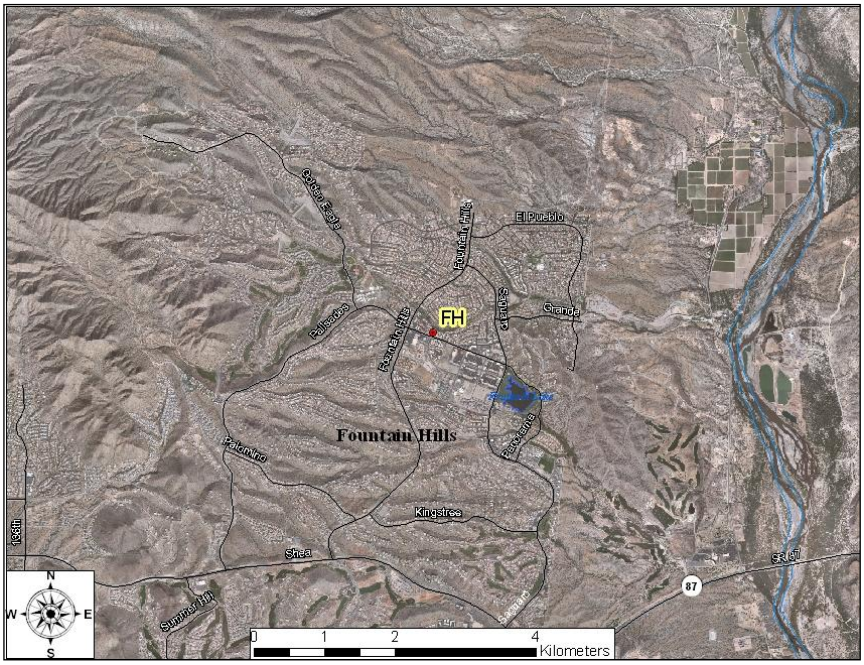
Location: Greenfield and McKellips
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: Ozone is the seasonal SLAMS criteria pollutant monitored at this station. Monitoring began in June of 1989. The site is located near an airfield in a fire station within a growing residential area.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.069	0.074	0.074
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	0	0
	Three year avg. of 4th High	0.071	0.070	0.068

*Indicates an exceedance of the standard.

Fountain Hills (FH) (04-013-9704)



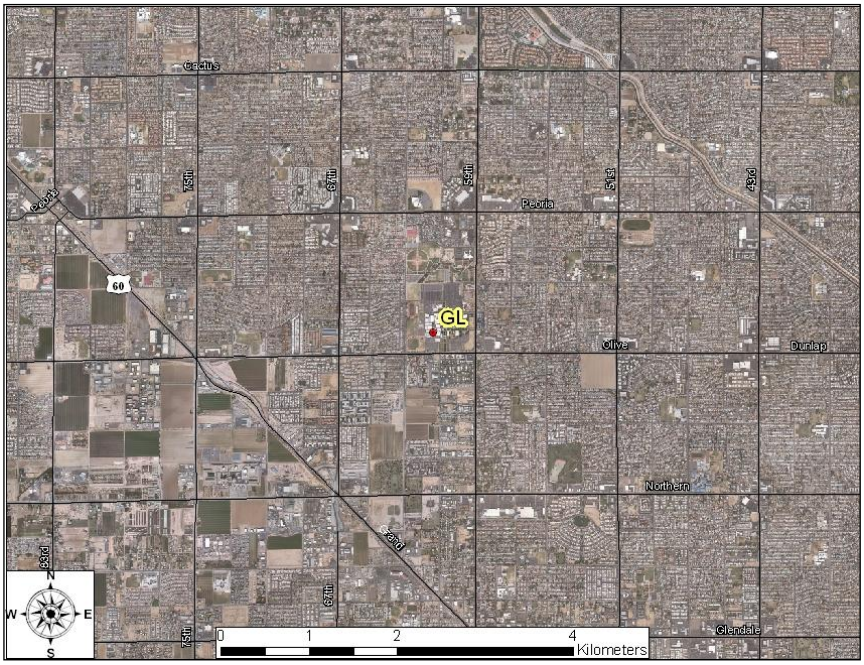
Location: Fountain Hills Blvd. and Palisades Blvd.
Spatial Scale: Neighborhood
Monitoring Objective: Maximum Ozone Concentrations

Site Description: The site, located at a Fountain Hills fire station, became operational in April of 1996 and monitors ozone (SLAMS) and wind speed and direction. The site is located approximately 15 miles downwind from the Phoenix metropolitan area and represents the high downwind concentrations on the fringes of the central basin district along the predominant summer/fall daytime wind direction.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.075	0.081*	0.089*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	3	9
	Three year avg. of 4th High	0.074	0.074	0.073

*Indicates an exceedance of the standard.
#Indicates a violation of the standard.

Glendale (GL) (04-013-2001)



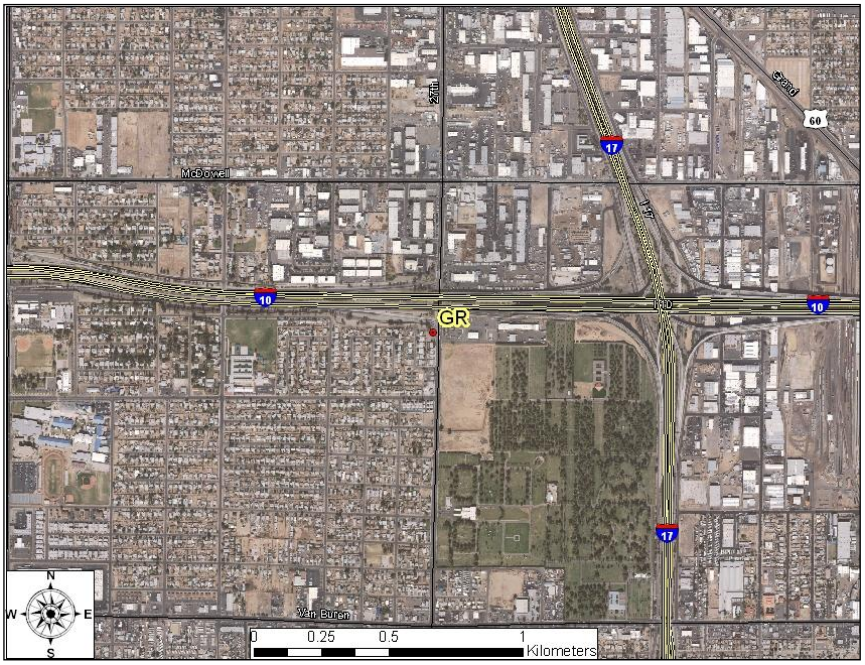
Location: 59th Ave. and Olive Ave.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: The Glendale site was established over three decades ago and is located on the grounds of Glendale Community College in a populous residential area. Homes, various strip malls, food establishments, and parks surround the site. Seasonal carbon monoxide, seasonal Ozone, and PM_{10} (all SLAMS) are the criteria pollutants monitored at this station. In September 2009 the PM_{10} monitor was upgraded from a 1-in-6 day filter-based monitor to a continuous-monitoring TEOM. This upgrade took place in accordance with regulations due to a PM_{10} exceedance which occurred at the site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.3	3.0	1.3
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.076*	0.083*	0.083*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	1	3	4
	Three year avg. of 4th High	0.071	0.072	0.073
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	196*	92	242*
	Number exceedances 24-hr PM_{10}	1	0	5
	Annual PM_{10} Avg. ($\mu g/m^3$)	28.5	22.9	32.3
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. ($\mu g/m^3$)	N/A	N/A	42.7*+
	No. of daily exceedances	N/A	N/A	2+
	Annual $PM_{2.5}$ Avg. ($\mu g/m^3$)	N/A	N/A	9.1+
	98th Percentile Value ($\mu g/m^3$)	N/A	N/A	27.8+

*Indicates an exceedance of the standard.
+ Represents less than a calendar year of observations (4926 observations)

Greenwood (GR) (04-013-3010)



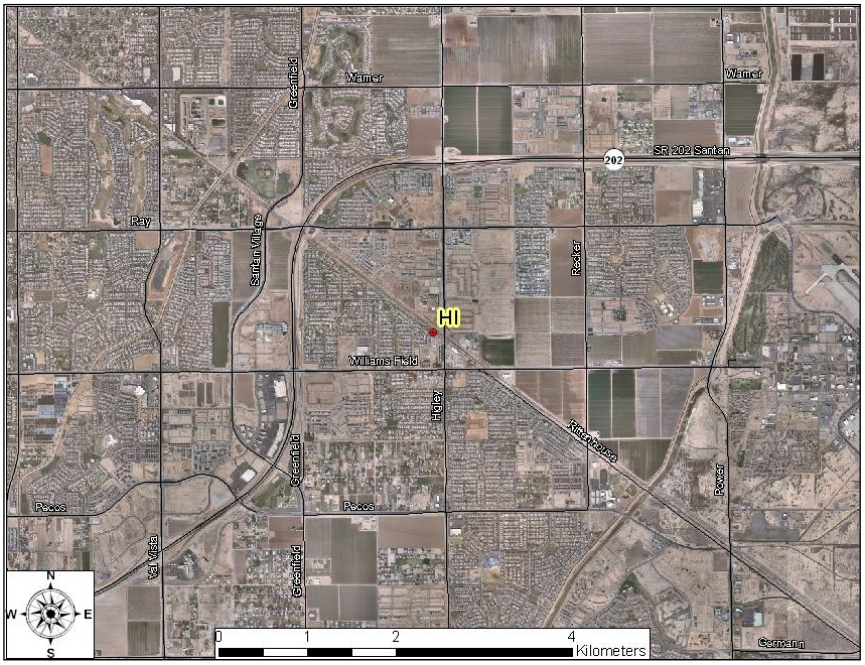
Location: 27th Ave. and I-10, Phoenix
Spatial Scale: Middle
Monitoring Objective: Population Exposure

Site Description: Monitoring began at this site in December 1993. The station is bordered on the north by Interstate 10, on the west and south by neighborhood homes, and to the east by Greenwood Cemetery. Interstate 17 is approximately one mile to the east of the site. Carbon monoxide, NO_2, and PM_{10} are the criteria pollutants monitored at this SLAMS facility. This site was converted to continuous PM_{10} monitoring in the beginning of 2006.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	2.6	3.0	2.5
	Number exceedances 8-hr CO	0	0	0
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	229*‡	158*	388*
	Number exceedances 24-hr PM_{10}	1	1	7
	Annual PM_{10} Avg. ($\mu g/m^3$)	41.2	34.9	42.2
Nitrogen Dioxide	Annual NO_2 Avg. (PPB)	25.23	24.52	25.4
	NO_2 1-hour Average 98th Percentile (PPB)	70.0	68.0	65.0

*Indicates an exceedance of the standard.
‡Indicates exceptional events at this site. Listed value is the highest official current AQS reading.

Higley (HI) (04-013-4006)



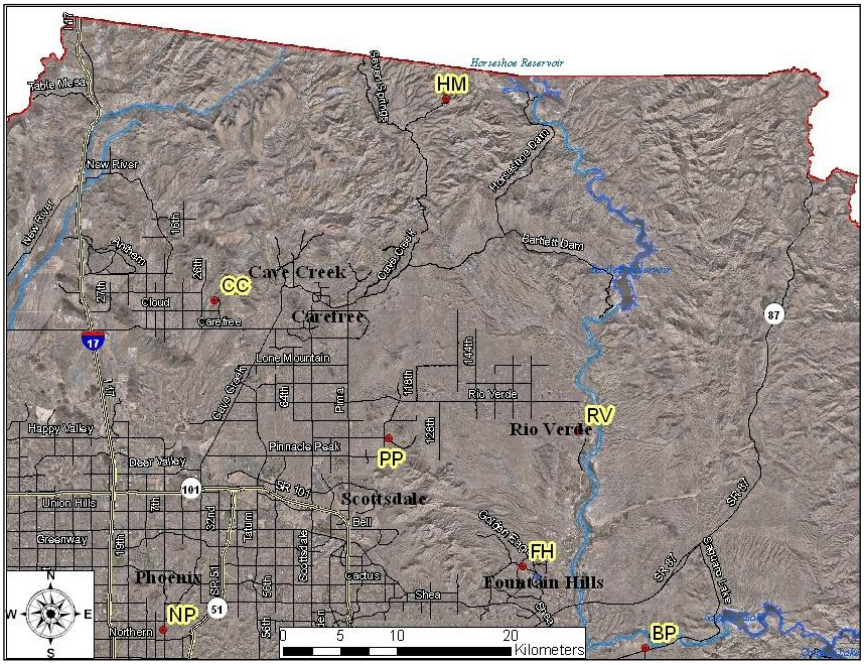
Location: Higley Rd. and Williams Field Rd., Gilbert
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: Originally, in 1994, ADEQ set up this site to monitor for background particulate concentrations near the urban limits of Maricopa County. Since then, urban expansion has enveloped the site, so it no longer serves its original intended purpose. The Department installed a (1-in-6 day) PM_{10} (SLAMS) in the second quarter of 2000. The data from this site was compared to the Chandler site and was found to be comparable. Since the City of Chandler requested that the department remove the Chandler site on 12/31/05, this site has taken over the role of that site. As of October 2004 the 1-in-6 day PM_{10} monitor was replaced with an hourly continuous PM_{10} monitor in accordance with 40 CFR 50, Appendix K. This continuous monitor samples on the neighborhood scale with a monitoring objective of high population exposure.

		2009	2010	2011
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	275*‡	83	362*
	Number exceedances 24-hr PM_{10}	2‡	0	8
	Annual PM_{10} Avg. ($\mu g/m^3$)	38.4	30.1	39.0

*Indicates an exceedance of the standard.
‡Indicates Exceptional Events at this site. Listed value is the highest official current AQS reading.

Humboldt Mountain (HM) (04-013-9508)



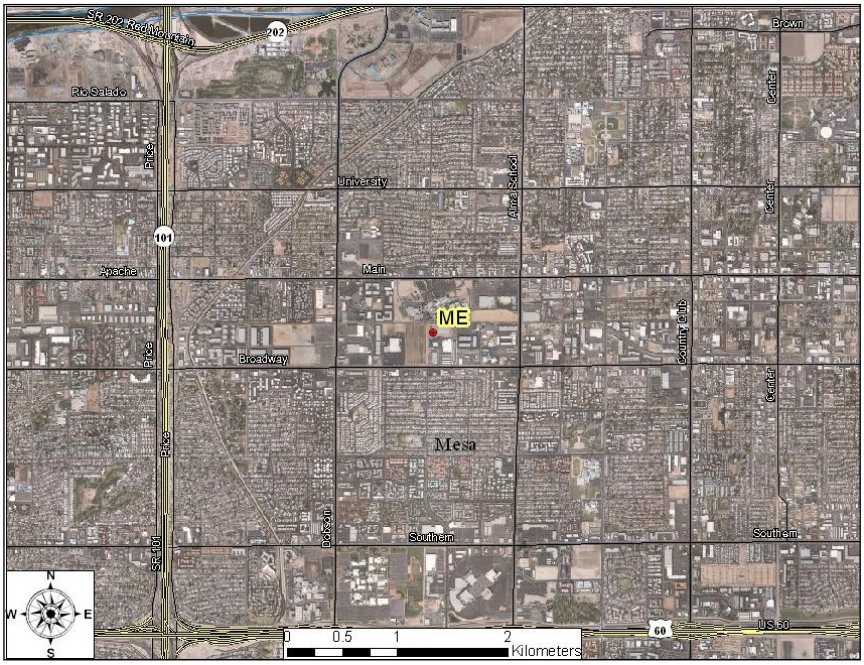
Location: Humboldt Mountain Summit
Spatial Scale: Regional
Monitoring Objective: Maximum Ozone Concentrations

Site Description: This site became operational in August 1995. The Humboldt Mountain site is located on Federal Aviation Agency property, in a National Forest Service building in the Tonto National Forest. This site is located approximately 40 miles north-northeast of the Phoenix metropolitan area at an elevation of 5190 feet. Ozone is the only criteria pollutant that is monitored at this SLAMS site.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.076*	0.074	0.088
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	1	0	6
	Three year avg. of 4th High	0.074	0.071	0.071

*Indicates an exceedance of the standard.
#Indicates a violation of the standard.

Mesa (ME) (04-013-1003)



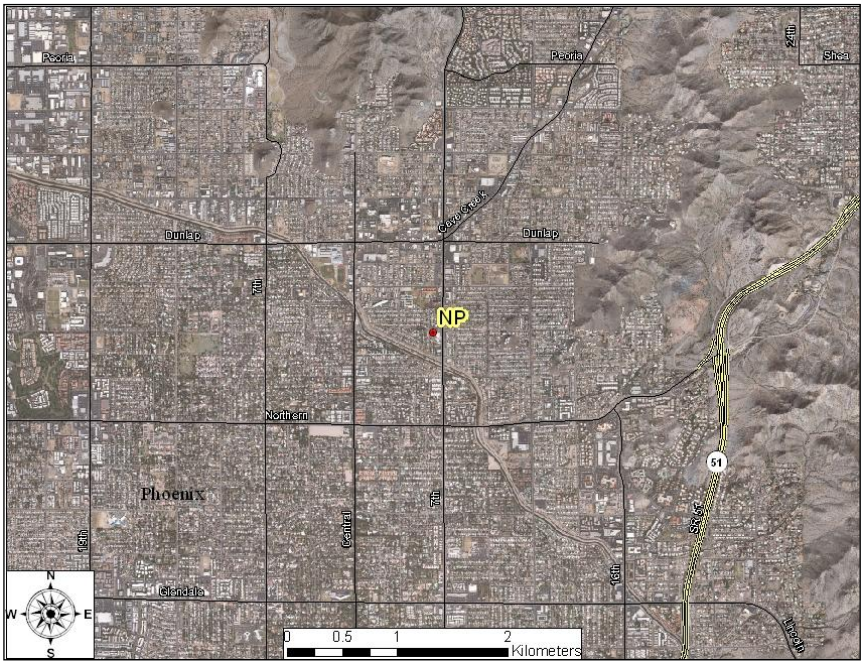
Location: Broadway Rd. and Brooks Ave.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: This site is located at Brooks Reservoir at the western edge of the city near the Tempe border. It is centered in an area that contains residential, industrial, and a small amount of agricultural activity. An open field borders the site on the west with commercial development to the north, and light industry east and south of the site. Carbon monoxide, $PM_{2.5}$, and PM_{10} are the criteria pollutants monitored at this SLAMS site. The department started operation of the $PM_{2.5}$ Federal Reference Method monitor in May 2005.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.5	1.4	1.5
	Number exceedances 8-hr CO	0	0	0
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	87	86	127
	Number exceedances 24-hr PM_{10}	0	0	0
	Annual PM_{10} Avg. ($\mu g/m^3$)	22.8	17.4	26.7
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. ($\mu g/m^3$)	19.2	14.0	102.3*
	Number of Daily Exceedances	0	0	1
	Annual $PM_{2.5}$ Avg. ($\mu g/m^3$)	7.30	6.25	8.9
	98^{th} Percentile Value ($\mu g/m^3$)	17.2	11.8	20.4

* Indicates an exceedance of the standard

North Phoenix (NP) (04-013-1004)



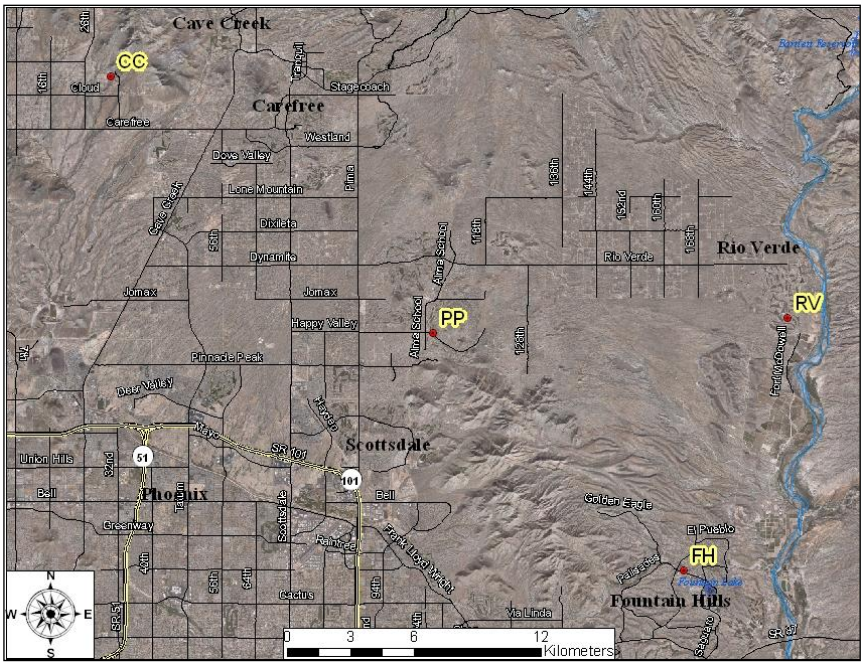
Location: 7th St. and Butler Ave.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: This site is located in the Sunnyslope area of North Phoenix. Sunnyslope is an older established neighborhood, primarily residential. High-density population surrounds the site. CO, ozone, and PM_{10} (all SLAMS) are monitored at this site, along with delta temperature (temperature inversion).

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.3	1.7	1.6
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.076*	0.085*	0.090*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	1	6	8
	Three year Avg. of 4th High	0.076#	0.077#	0.078#
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	69	44	186*
	Number exceedances 24-hr PM_{10}	0	0	2
	Annual PM_{10} Avg. ($\mu g/m^3$)	23.8	19.3	26.5
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. ($\mu g/m^3$)	N/A	N/A	46.9*+
	Number of Daily Exceedances	N/A	N/A	1+
	Annual $PM_{2.5}$ Avg. ($\mu g/m^3$)	N/A	N/A	9.3+
	98th Percentile Value ($\mu g/m^3$)	N/A	N/A	23.0+

*Indicates an exceedance of the standard.
#Indicates a violation of the standard
+Represents less than a year of observations (2895 observations)

Pinnacle Peak (PP) (04-013-2005)



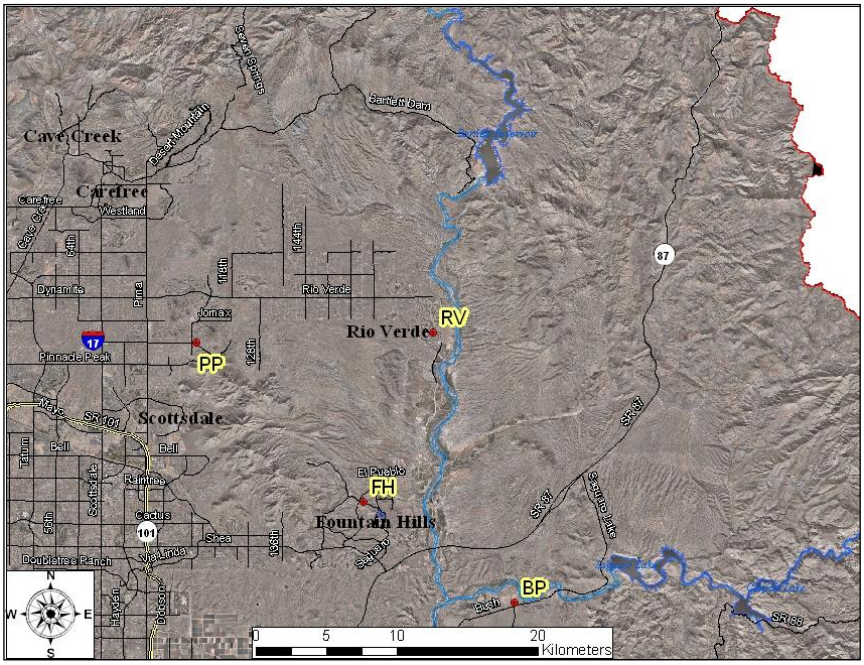
Location: Pima Rd & Pinnacle Peak
Spatial Scale: Urban
Monitoring Objective: Maximum Ozone Concentrations

Site Description: This SLAMS site for ozone is located on the roof of a golf course country club and is surrounded by residential homes. It is located in a geographic area of low-density population (less than 2500 people per square mile). In the current and previous years, ozone exceedances have been recorded due to transport of ozone and precursors from more urbanized areas of metropolitan Phoenix.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.079*	0.080*	0.088*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	1	4	4
	Three year Avg. of 4th High	0.072	0.073	0.075

*****Indicates an exceedance of the standard

Rio Verde (RV) (04-013-9706)



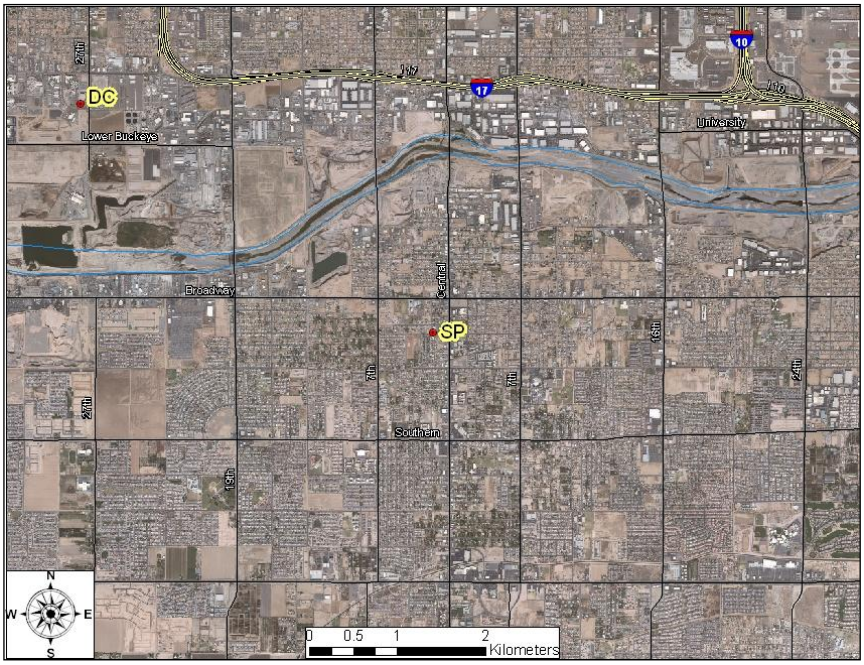
Location: Forest Rd. and Del Ray Ave.
Spatial Scale: Urban
Monitoring Objective: Maximum Ozone Concentrations

Site description: This ozone site became operational in spring of 1997. The monitor is located at the fire station / County Sheriff's office sub-station located in a residential area surrounded by the desert of Tonto National Forest. The site is eight miles north of the Fountain Hills SLAMS station, on the edge of a Class I Wilderness Area.

		2009	2010	2011
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.071	0.078*	0.088
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	1	6
	Three year Avg. of 4th High	0.075	0.073	0.073

*****Indicates an exceedance of the standard
#Indicates a violation of the standard.

South Phoenix (SP) (04-013-4003)



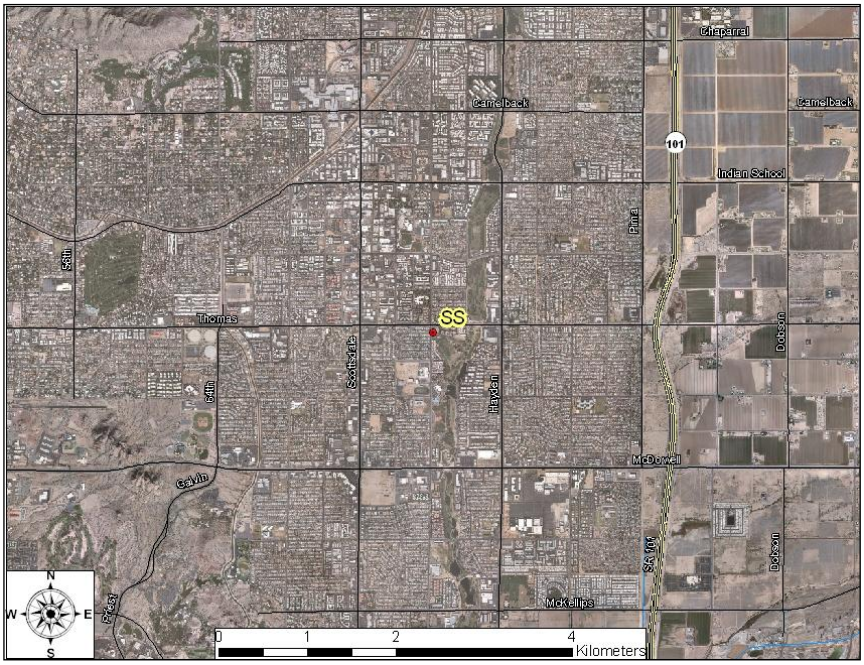
Location: Central Ave. and Broadway Rd.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: The site was opened at its current location in October 1999. The site is at the edge of a high population area, but also borders on a mixture of residential and commercial (retail stores, food establishments, and office parks) land use. The station has two high population areas (>5000 people per square miles) north and west of the site. Carbon monoxide, ozone, and PM_{10} (all SLAMS) are the criteria pollutants monitored at this station. The department started operation of a $PM_{2.5}$ FRM filter-based monitor in May 2005. A continuous Thermo Scientific 1405 $PM_{2.5}$ monitor started operation at this site in December 2008. This monitor is classified as a Federal Equivalent Method (FEM), and therefore the data can be used for compliance purposes within AQS, though the FRM monitor is still considered the primary $PM_{2.5}$ monitor at the site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	2.6	3.1	2.6
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.075	0.076*	0.081*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	1	4
	Three year Avg. of 4th High	0.071	0.072	0.072
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	250*‡	120	420*
	Number exceedances 24-hr PM_{10}	3‡	0	9
	Annual PM_{10} Avg. (µg/m^3)	44.1	35.0	47.7
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. (µg/m^3)	71.3*	63.4* (82.6*)#	62.0* (60.8*)#
	Number of Daily Exceedances	2	1 (2)#	2 (4)#
	Annual $PM_{2.5}$ Avg. (µg/m^3)	11.0	9.23 (7.98)#	11.4 (9.33)#
	98th Percentile value (µg/m^3)	34.5	24.0	27.2

*Indicates an exceedance of the standard.
‡Indicates Exceptional Events at this site. Listed value is the highest official current AQS reading.
#First number is filter-based monitor; second number (in parenthesis) is continuous monitor.

South Scottsdale (SS) (04-013-3003)



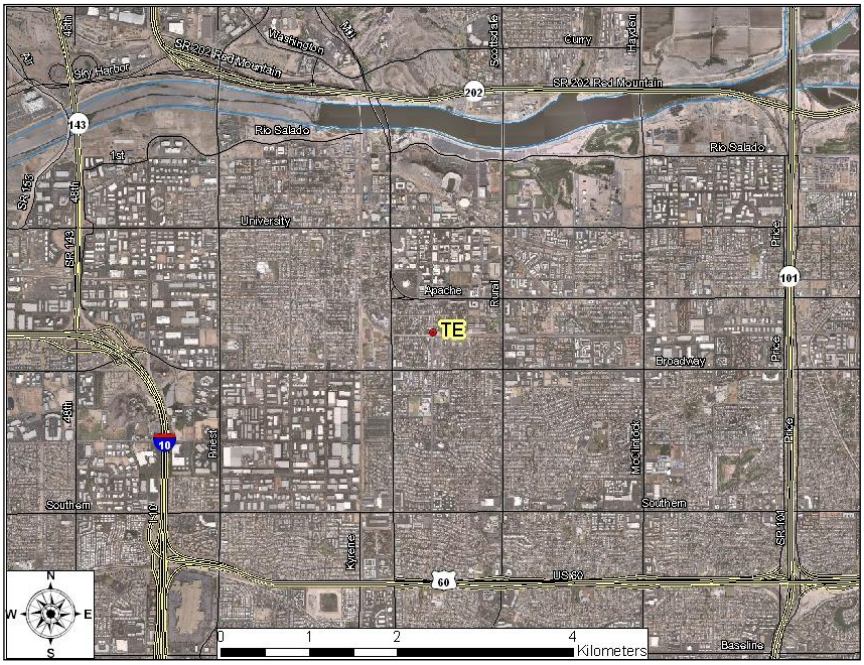
Location: Thomas Rd. and Miller Rd.
Spatial Scale: Neighborhood, Urban (NO_2)
Monitoring Objective: Population Exposure

Site Description: The South Scottsdale site is located at a City of Scottsdale Fire Station. The area surrounding the site is residential with a density of 2500 to 5000 persons per square mile. This site is located 12 miles east of metropolitan Central Phoenix. Carbon monoxide, ozone**,** NO_2, SO_2, and PM_{10} (all SLAMS) are the criteria pollutants monitored at this station.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.4	1.6	1.4
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.074	0.084*	0.083*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	4	3
	Three year Avg. of 4th High	0.075	0.075	0.074
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	135	37	119
	Number exceedances 24-hr PM_{10}	0	0	0
	Annual PM_{10} Avg. (µg/m^3)	25.5	17.4	25.8
Nitrogen Dioxide	Annual NO_2 Avg. (PPB)	13.86	13.92	15.5
	NO_2 1-hour Average 98th Percentile (PPB)	52.0	53.0	54.0
Sulfur Dioxide	Max. 24-hr SO_2 Avg. (PPB)	6	3	
	Number of Exceedances SO_2	0	0	
	Annual SO_2 Avg. (PPB)	1.2	1.3	

*Indicates an exceedance of the standard.
#Indicates a violation of the standard.

Tempe (TE) (04-013-4005)



Location: Apache Blvd. & College Ave.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: The site was established in 2000 to fill in a spatial gap between the metropolitan Phoenix area and the city of Mesa. Ozone and carbon monoxide (both SLAMS) are monitored at the site. Wind speed and direction and delta temperature (temperature inversion) meteorological parameters are also monitored at this site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	2.9	1.9	3.2
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.070	0.075	0.076*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	0	1
	Three year Avg. of 4th High	0.073	0.071	0.068

*****Indicates an exceedance of standard.
#Indicates a violation of the standard.

West Chandler (WC) (04-013-4004)

Location: Frye Rd. and Ellis St.
Spatial Scale: Neighborhood, Middle (PM_{10})
Monitoring Objective: Population Exposure

Site Description: This site was first established in January 1995. The site was moved one half mile to the southeast in May 2000 when the Chandler fire station that hosts it relocated. A wide range of land uses surround the site including residential, agriculture, and heavy industry (semiconductor manufacturing plants and liquid air storage). Carbon monoxide, ozone, and PM_{10} are the criteria pollutants monitored at this SLAMS site. In September 2009 the PM_{10} monitor was upgraded from a 1-in-6 day scheduled monitor to a continuous-monitoring TEOM. This upgrade took place in accordance with regulations due to a PM_{10} exceedance which occurred at the site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	1.7	1.9	1.4
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.072	0.083*	0.079*
	O_3 #Daily Exceedances >0.075 ppm (as of 2008)	0	2	3
	Three year Avg. of 4th High	0.073	0.074	0.073
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	220*‡	76	669*
	Number exceedances 24-hr PM_{10}	2‡	0	7
	Annual PM_{10} Avg. (µg/m^3)	27.9	23.3	47.9

*Indicates an exceedance of the standard.
‡Indicates Exceptional Events at this site. Listed value is the highest official current AQS reading.
#Indicates a violation of the standard.

West 43rd Avenue (WF) (04-013-4009)

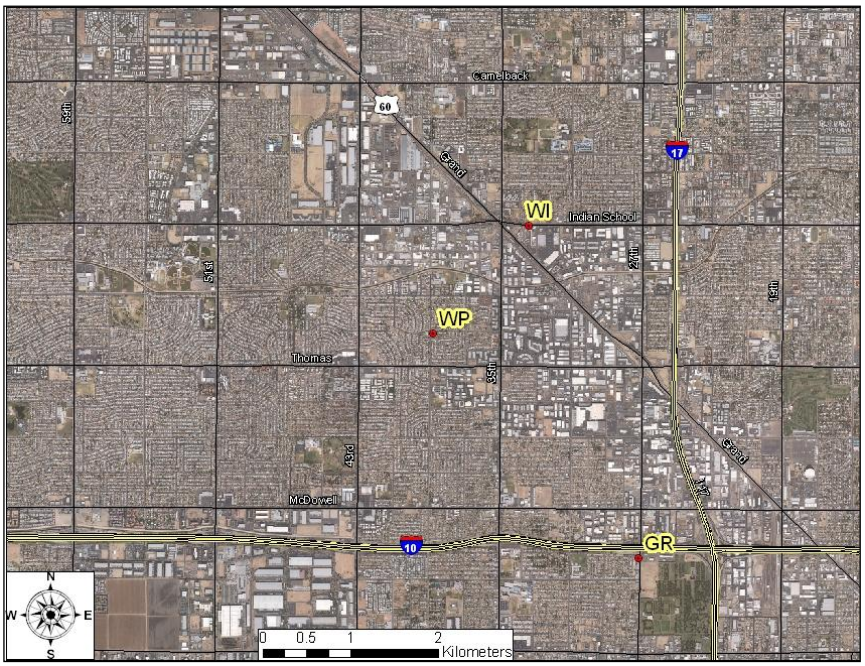
Location: 43rd Ave. & Broadway Rd.
Spatial Scale: Middle
Monitoring Objective: Highest Concentrations

Site Description: Monitoring began at the site in the 2nd quarter of 2002. This site is located at a Maricopa County Department of Transportation storage lot and is surrounded by a combination of heavy industry and residential homes. The site has one continuous TEOM PM_{10} monitor and a temperature inversion monitor, as well as other meteorological instruments. The main purpose of the site is to measure maximum concentration PM_{10} and to determine the impact on ambient pollution levels of significant sources or source categories. The sources around the site include sand and gravel operations, auto and metal recycling facilities, landfills, paved and unpaved haul roads, and cement casting.

		2009	2010	2011
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	317*‡	112	369*
	Number exceedances 24-hr PM_{10}	7‡	0	7
	Annual PM_{10} Avg. (µg/m^3)	50.7	39.4	47.9

*Indicates an exceedance of the standard.
‡Indicates Exceptional Events at this site. Listed value is the highest official current AQS reading.

West Phoenix (WP) (04-013-0019)



Location: 39th Ave. and Earll Dr.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure,
Highest Concentration ($PM_{2.5}$)

Site Description: This site became operational in 1984. The spatial scale for the West Phoenix site is neighborhood. It is located in an area of stable, high-density residential population. CO, PM_{10}, $PM_{2.5}$, O_3, and NO_2 (All SLAMS) are the criteria pollutants monitored at this site. The department also operates collocated $PM_{2.5}$ FRM filter-based monitors and a continuous $PM_{2.5}$ FEM monitor (SLAMS) at this site.

		2009	2010	2011
Carbon Monoxide	Max. 8-hr CO Avg. (PPM)	4.6	4.3	3.0
	Number exceedances 8-hr CO	0	0	0
Ozone	Max. 8-hr O_3 Avg. (PPM)	0.082	0.082*	0.086*
	O_3 #of Daily Exceedances >0.075 ppm (as of 2008)	1	2	5
	Three year Avg. of 4th High	0.073	0.074	0.074
PM_{10}	Max. 24-hr PM_{10} Avg. (µg/m^3)	210*	86	279
	Number exceedances 24-hr PM_{10}	1	0	8
	Annual PM_{10} Avg. (µg/m^3)	35.9	29.8	48.0
$PM_{2.5}$	Max. 24-hr $PM_{2.5}$ Avg. (µg/m^3)	81.2*	53.3* (55.3*)#	30.6 (99.1*)#
	Number of Daily Exceedances	2	1 (2)#	0 (4)#
	Annual $PM_{2.5}$ Avg. (µg/m^3)	10.36	8.36 (7.60)#	10.2 (11.6)#
	98th Percentile Value	29.4	21.6	31.5
Nitrogen Dioxide	Annual NO_2 Avg. (PPB)	16.90	17.72	18.0
	NO_2 1-hour Average 98th Percentile (PPB)	55.0	55.0	55.0

*Indicates an exceedance of the standard.
#Indicates a violation of the standard.
#First number is filter-based monitor; second number (in parenthesis) is continuous monitor.

Zuni Hills (ZH) (04-013-4016)

Location: 1099th Ave. and Deer Valley Road.
Spatial Scale: Neighborhood
Monitoring Objective: Population Exposure

Site Description: This site was opened in December 2009 and is located on the campus of the Zuni Hills elementary school, which is approximately 1.7 miles to the northeast from the now closed Coyote Lakes monitor. Coyote Lakes was a source-oriented, middle scale PM_{10} site that was situated in the Agua Fria River bottom adjacent to sand and gravel mines; Zuni Hills replaces this with a population-oriented neighborhood scale site that is situated on the higher-elevation river bank. This site will theoretically be able to represent the air quality for a larger area and a greater number of people.

		2009	2010	2011
PM_{10}	Max. 24-hr PM_{10} Avg. ($\mu g/m^3$)	27	70	411
	Number exceedances 24-hr PM_{10}	0	0	4
	Annual PM_{10} Avg. ($\mu g/m^3$)	16.1#	20.7	28.4

#Indicates <75% data completeness.

APPENDIX II - EPA REQUIRED DATA

Details compliance with requirements of 40CFR58 §58.10 and Appendices A, C, D, and E

Required General Statement Regarding Changes to the $PM_{2.5}$ Network

In the event the department needed to move or change a violating $PM_{2.5}$ monitor the following procedure would be followed: The department would hold a public hearing regarding the requested change. Details and documentation of the requested change, as well as all public comments, would then be forwarded to the EPA for approval. Any action on the department's part will be dependent on EPA approval.

Please note that the previous statement is general in nature and is required to be placed in the annual network review by 40CFR58. The department does not currently have any violating $PM_{2.5}$ monitors, nor does it have any proposals to move any $PM_{2.5}$ monitors.

Notes regarding appendix data

Analysis Method (filters only) refers to the method used to process filter-based particulate samples.

Distance from Supporting Structure refers to those sample probes that are attached to a supporting structure, such as the side of a building. In most cases the sample probe is located above the supporting structure, in which case the entry will say N/A.

Distance from Obstructions refers to those obstructions, both on the roof and off the roof, which are located higher than the probe. In the case of a nearby obstruction being higher than the probe, details of its location will be listed in the entry. If there are no obstructions higher than the probe, then the entry will be N/A.

Last Annual Performance Evaluation Date refers to the performance evaluations detailed in 40CFR58, Appendix A, §3.2.2. These performance evaluations are performed by an agency outside of MCAQD. At least 25% of the network should be evaluated once per calendar quarter.

Last Two Semi-Annual Flow Rate Audit Dates refers to the performance evaluations detailed in 40CFR58, Appendix A, §3.2.4. These performance evaluations are performed by an agency outside of MCAQD at least once every six months.

Probe Sample Line Material refers to the material makeup of the intake sample lines.

Pollutant Sample Residence Time refers to the amount of time that it takes a sample of air to travel between the probe inlet and the monitor. This residence time is calculated by a formula that is based on the sample line diameter and length and the flow rate of the air intake. It is important to keep this residence time low so as to prevent gases in the air sample from reacting with the sample line material or with other gases in the sample; e.g. ozone could react with nitrogen oxide in the air sample if the residence time exceeds 20 seconds. This measurement only applies to NO_2, SO_2, and O_3 monitors.

BLUE POINT
County ID: BP
AQS ID: 04-013-9702
Address: Bush Highway & Usery Pass Road, Maricopa County
Coordinates: 33.54549N – 111.60925W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	26
# Accuracy Checks Performed Annually	3
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	01/01/1993
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Urban
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	5.3 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	7.6 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	Bush Highway
Distance and Direction to Road	160 meters, South
Traffic Count (ADT)	1,000
Groundcover	Paved

BUCKEYE

County ID: BE
AQS ID: 04-013-4011
Address: 26449 W 100th DR, Buckeye
Coordinates: 33.37005N – 111.62070W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant/Monitor Type	**Ozone**	**CO**	**NO_2**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	N/A
-Appendix A Requirements				
# Precision Checks Performed Annually	27	17	26	23
# Accuracy Checks Performed Annually	8	1	5	4
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	N/A	Bi-Weekly
-Appendix C Requirements				
Sampler Make & Model	API M400	API M300	API M200	Thermo TEOM 1400AB
Date Established	08/01/2004	08/01/2004	08/01/2004	08/01/2004
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM
-Appendix D Requirements				
Monitoring Objective	Population Exposure	Population Exposure	Source Oriented	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Urban	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes
-Appendix E Requirements				
Distance between collocated samplers	N/A	N/A	N/A	N/A
Probe Inlet Height	4 meters	4 meters	4 meters	4.5 meters
Airflow Arc	360º	360º	360º	360º
Distance from Supporting Structure	N/A	N/A	N/A	N/A
Probe Sample Line Material	Teflon	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.0 sec	N/A	4.0 sec	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A
Spacing from Trees	14 meters, N	14 meters, N	14 meters, N	14 meters, N
Nearest Major Roadway	US Hwy 85	US Hwy 85	US Hwy 85	US Hwy 85
Distance and Direction to Road	31 meters, N	31 meters, N	31 meters, N	31 meters, N
Traffic Count (ADT)	3,000	3,000	3,000	3,000
Groundcover	Paved	Paved	Paved	Paved

CAVE CREEK

County ID: CC
AQS ID: 04-013-4008
Address: 37019 N Lava Lane, Phoenix
Coordinates: 33.82169N – 112.01739W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	26
# Accuracy Checks Performed Annually	4
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	07/20/2001
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Urban
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	4.8 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	10.2 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	20 meters, E
Nearest Major Roadway	32nd Street
Distance and Direction to Road	240 meters, NE
Traffic Count (ADT)	1,000
Groundcover	Paved

.

CENTRAL PHOENIX

County ID: CP
AQS ID: 04-013-3002
Address: 1645 E Roosevelt, Phoenix
Coordinates: 33.45793N - 112.04601W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information					
Pollutant/Monitor Type	**Ozone**	**CO**	**NO_2**	**SO_2**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	N/A	N/A
-Appendix A Requirements					
# Precision Checks Performed Annually	26	26	24	26	22
# Accuracy Checks Performed Annually	3	2	4	5	4
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	N/A	N/A	Bi-Weekly
-Appendix C Requirements					
Sampler Make & Model	API M400	API M300	API M200	API M100	Thermo TEOM 1400AB
Date Established	06/01/1967	10/01/1966	01/01/1967	01/01/1965	04/01/1985
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM	FEM
-Appendix D Requirements					
Monitoring Objective	Population Exposure	Population Exposure	Highest Concentration	Highest Concentration	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes	Yes
-Appendix E Requirements					
Distance between collocated samplers	N/A	N/A	N/A	N/A	N/A
Probe Inlet Height	11.3 meters	11.3 meters	11.3 meters	11.3 meters	11.3 meters
Airflow Arc	360º	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	Teflon	Teflon	N/A
Pollutant Sample Residence Time	9.0 sec	N/A	9.0 sec	10.0 sec	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A	N/A	N/A
Nearest Major Roadway A	16th Street	16th Street	16th Street	16th Street	16th Street
Distance and Direction to Road	88 meters, W	88 meters, W	88 meters, W	88 meters, W	91 meters, W
Traffic Count (ADT)	24,000	24,000	24,000	24,000	24,000
Nearest Major Roadway B	Roosevelt St.	Roosevelt St.	Roosevelt St.	Roosevelt St.	Roosevelt St.
Distance and Direction to Road	75 meters, N	75 meters, N	75 meters, N	75 meters, N	75 meters, N
Traffic Count (ADT)	Unknown	Unknown	Unknown	Unknown	Unknown
Groundcover	Paved	Paved	Paved	Paved	Paved

DEER VALLEY

County ID: DV
AQS ID: 04-013-4018
Address: 1030 West Deer Valley Road, Phoenix
Coordinates: 33.684627N -112.08635W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Lead**
Sampling Schedule	1 in 6 day
Analysis Method (filters only)	Filters sent out to independent laboratory for weighing
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	29 (collocated)
# Accuracy Checks Performed Annually	1
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Semi-Annual
-Appendix C Requirements	
Sampler Make & Model	Hi-Q TSP Sampler
Date Established	07/01/2010
Classification	SLAMS
Method (FRM, FEM, ARM)	FRM
-Appendix D Requirements	
Monitoring Objective	Source Oriented
Monitoring Scale	Middle Scale
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	2.7 meters
Probe Inlet Height	4.1 meters
Airflow Arc	360º
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	Deer Valley
Distance and Direction to Road	300 meters, S
Traffic Count (ADT)	6,452
Groundcover	Paved

*Calibrating instrument was damaged by manufacturer. A new calibrator was received in early 2011 and accuracy checks have been resumed.

DURANGO COMPLEX

County ID: DC
AQS ID: 04-013-9812
Address: 2702 RC Esterbrooks Blvd, Phoenix
Coordinates: 33.42650N -112.11814W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant/Monitor Type	**PM_{10}**	**$PM_{2.5}$**	**SO_2**
Sampling Schedule	Continuous	Continuous	Conrinuoua
Analysis Method (filters only)	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	Yes	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	22	23	23
# Accuracy Checks Performed Annually	2	2	6
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	N/A	N/A	Bi-Weekly
Frequency of Flow Rate Verification	Bi-Weekly	Bi-Weekly	N/A
-Appendix C Requirements			
Sampler Make & Model	Thermo TEOM 1400AB	Thermo FDMS-TEOM 1400AB	API M100
Date Established	07/01/1999	07/01/2005	01/01/2011
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FEM	FRM
-Appendix D Requirements			
Monitoring Objective	Highest Concentration	Highest Concentration	Highest Concentration
Monitoring Scale	Middle	Middle	Middle
Sampling Season	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes
-Appendix E Requirements			
Distance between collocated samplers	N/A	N/A	N/A
Probe Inlet Height	3.9 meters	4.8 meters	3.9 meters
Airflow Arc	360º	360º	360º
Probe Sample Line Material	N/A	N/A	Teflon
Pollutant Sample Residence Time	N/A	N/A	10.0 sec
Distance from Supporting Structure	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A
Spacing from Trees	14 meters, S	14 meters, S	14 meters, S
Nearest Major Roadway	27th Ave	27th Ave	27th Ave
Distance and Direction to Road	78 meters, E	76 meters, E	76 meters, E
Traffic Count (ADT)	16,000	16,000	16,000
Groundcover	Paved	Paved	Paved

DYSART

County ID: DY
AQS ID: 04-013-4010
Address: 16825 N Dysart Rd, Surprise
Coordinates: 33.63713N – 112.34184W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant/Monitor Type	**Ozone**	**CO**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	25	13	23
# Accuracy Checks Performed Annually	4	1	2
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Monthly
-Appendix C Requirements			
Sampler Make & Model	API M400	API M300	Thermo TEOM 1400AB
Date Established	7/21/2003	09/01/2003	07/14/2003
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM
-Appendix D Requirements			
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes
-Appendix E Requirements			
Distance between collocated samplers	N/A	N/A	N/A
Probe Inlet Height	3.3 meters	3.3 meters	2.6 meters
Airflow Arc	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.8 sec	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A
Nearest Major Roadway A	Dysart	Dysart	Dysart
Distance and Direction to Road	17 meters, W	17 meters, W	12 meters, W
Traffic Count (ADT)	12,000	12,000	12,000
Nearest Major Roadway B	Bell Rd	Bell Rd	Bell Rd
Distance and Direction to Road	495 meters, N	495 meters, N	460 meters, N
Traffic Count (ADT)	43,000	43,000	43,000
Groundcover	Paved/Gravel	Paved/Gravel	Paved/Gravel

FALCON FIELD

County ID: FF
AQS ID: 04-013-1010
Address: 4530 E McKellips Rd, Mesa
Coordinates: 33.45223N – 111.73331W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	26
# Accuracy Checks Performed Annually	5
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	06/01/1989
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	9.3 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	16.4 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	McKellips
Distance and Direction to Road	58 meters, S
Traffic Count (ADT)	29,000
Groundcover	Paved

.

FOUNTAIN HILLS

County ID: FH
AQS ID: 04-013-9704
Address: 16426 E Palisades Blvd, Fountain Hills
Coordinates: 33.61103N – 111.72529W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	26
# Accuracy Checks Performed Annually	4
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	04/01/1996
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Neighborhood
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	4.3 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	4.8 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	Canopy 1 meter higher than probe, located 9 meters to the south
Distance to Furnace Flue	N/A
Spacing from Trees	15 meters, W
Nearest Major Roadway	Palisades Blvd
Distance and Direction to Road	70 meters, SW
Traffic Count (ADT)	8,000
Groundcover	Paved

GLENDALE

County ID: GL
AQS ID: 04-013-2001
Address: 6001 W Olive, Glendale
Coordinates: 33.56936N – 112.19153W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information				
Pollutant/Monitor Type	**Ozone**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Sampling Schedule	Continuous	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	Yes
-Appendix A Requirements				
# Precision Checks Performed Annually	25	14	23	14
# Accuracy Checks Performed Annually	4	2	1	1
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Bi-Monthly	Bi-Monthly
-Appendix C Requirements				
Sampler Make & Model	API M400	API M300	Thermo TEOM 1400AB	Thermo FDMS-TEOM 1400AB
Date Established	01/01/1974	01/01/1974	07/01/1987	6/1/2011
Classification	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM
-Appendix D Requirements				
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes
-Appendix E Requirements				
Distance between collocated samplers	N/A	N/A	N/A	N/A
Probe Inlet Height	6.0 meters	6.0 meters	7.4 meters	7.4 meters
Airflow Arc	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A	N/A
Pollutant Sample Residence Time	15.5 sec	N/A	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A	N/A
Nearest Major Roadway A	Olive Ave	Olive Ave	Olive Ave	Olive Ave
Distance and Direction to Road	225 meters, S	225 meters, S	227 meters, S	227 meters, S
Traffic Count (ADT)	25,000	25,000	25,000	25,000
Nearest Major Roadway B	59th Ave	59th Ave	59th Ave	59th Ave
Distance and Direction to Road	475 meters, E	475 meters, E	430 meters, E	430 meters, E
Traffic Count (ADT)	30,500	30,500	30,500	30,500
Groundcover	Paved	Paved	Paved	Paved

.

GREENWOOD

County ID: GR
AQS ID: 04-013-3010
Address: 1128 N 27th Ave., Phoenix
Coordinates: 33.46093N – 112.11748W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant/Monitor Type	**CO**	**NO_2**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	26	25	25
# Accuracy Checks Performed Annually	4	4	3
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Bi-Weekly
-Appendix C Requirements			
Sampler Make & Model	API M300	API M200	Thermo TEOM 1400AB
Date Established	11/01/1993	11/01/1993	11/01/1993
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FRM	FRM	FEM
-Appendix D Requirements			
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Middle	Middle	Middle
Sampling Season	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes
-Appendix E Requirements			
Distance between collocated samplers	N/A	N/A	N/A
Probe Inlet Height	4.2 meters	4.2 meters	4.4 meters
Airflow Arc	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	N/A	4.3 sec	N/A
Distance from Supporting Structure	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A
Spacing from Trees	20 meters, NW	20 meters, NW	20 meters, NW
Nearest Major Roadway A	27th Ave	27th Ave	27th Ave
Distance and Direction to Road	10 meters, E	10 meters, E	10 meters, E
Traffic Count (ADT)	18,500	18,500	18,500
Nearest Major Roadway B	I-10	I-10	I-10
Distance and Direction to Road	85 meters, N	85 meters, N	85 meters, N
Traffic Count (ADT)	229,000	229,000	229,000
Groundcover	Paved	Paved	Paved

HIGLEY
County ID: HI
AQS ID: 04-013-4006
Address: 15400 South Higley Road, Gilbert
Coordinates: 33.31074N – 111.72255W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**PM_{10}**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	24
# Accuracy Checks Performed Annually	2
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	Thermo TEOM 1400AB
Date Established	07/01/2000
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	2.9 meters
Airflow Arc	360º
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway A	Higley Rd
Distance and Direction to Road	117 meters, E
Traffic Count (ADT)	11,500
Nearest Major Roadway B	Williams Field Rd
Distance and Direction to Road	410 meters, S
Traffic Count (ADT)	11,500
Groundcover	Paved

HUMBOLDT MOUNTAIN

County ID: HM
AQS ID: 04-013-9508
Address: Seven Springs Rd-FAA Radar Station, Tonto National Forest
Coordinates: 33.98280N – 111.79870W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	25
# Accuracy Checks Performed Annually	3
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	01/01/1993
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Regional
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	4.5 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	6.2 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	N/A (Remote mountaintop site, only reachable by small access road)
Distance and Direction to Road	N/A
Traffic Count (ADT)	N/A
Groundcover	Dirt/Vegetated

MESA

County ID: ME
AQS ID: 04-013-1003
Address: 310 S Brooks, Mesa
Coordinates: 33.41045N – 111.86507W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant/Monitor Type	**CO**	**$PM_{2.5}$**	**PM_{10}**
Sampling Schedule	Continuous	1 in 3 day	1 in 6 day
Analysis Method (filters only)	N/A	Filters Weighed In-House	Filters Weighed In-house
Any Proposal to Remove or Move Monitor?	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	Yes	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	10	N/A	N/A
# Accuracy Checks Performed Annually	4	2	2
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	N/A	N/A
Frequency of Flow Rate Verification	N/A	Every 6 Weeks	Quarterly
-Appendix C Requirements			
Sampler Make & Model	API M400	Thermo 2025	Anderson SSI
Date Established	01/01/1978	04/28/2005	01/23/1990
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM
-Appendix D Requirements			
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Sep-Mar	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes
-Appendix E Requirements			
Distance between collocated samplers	N/A	N/A	3.3 meters
Probe Inlet Height	7 meters	6.9 meters	6.2 meters
Airflow Arc	360º	360º	360º
Probe Sample Line Material	Teflon	N/A	N/A
Pollutant Sample Residence Time	N/A	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A
Nearest Major Roadway	Broadway Rd.	Broadway Rd.	Broadway Rd.
Distance and Direction to Road	305 meters, S	305 meters, S	305 meters, S
Traffic Count (ADT)	33,000	33,000	33,000
Groundcover	Paved/Gravel	Paved/Gravel	Paved/Gravel

NORTH PHOENIX

County ID: NP
AQS ID: 04-013-1004
Address: 601 E Butler Dr., Phoenix
Coordinates: 33.56033N – 112.06626W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information					
Pollutant/Monitor Type	**Ozone**	**CO**	**PM_{10}**	**PM_{10}**	**$PM_{2.5}$**
Sampling Schedule	Continuous	Continuous	1 in 6 day	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	Filters Weighed In-House	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	Yes	N/A
-Appendix A Requirements					
# Precision Checks Performed Annually	26	10	N/A		3
# Accuracy Checks Performed Annually	4	1	1		0
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Quarterly	Bi-Weekly	Bi-Weekly
-Appendix C Requirements					
Sampler Make & Model	API M400	API M300	Anderson SSI	BAM 1020	BAM 1020
Date Established	01/01/1975	01/01/1974	01/05/1990	9/1/2011	9/1/2011
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM	FEM
-Appendix D Requirements					
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes	Yes
-Appendix E Requirements					
Distance between collocated samplers	N/A	N/A	N/A	N/A	N/A
Probe Inlet Height	4.6 meters	4.6 meters	4.4 meters	4.5 meters	4.5 meters
Airflow Arc	360º	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A	N/A	N/A
Pollutant Sample Residence Time	5.0 sec	N/A	N/A	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A	N/A	N/A
Nearest Major Roadway	7^{th} Street	7^{th} Street	7^{th} Street	7^{th} Street	7^{th} Street
Distance and Direction to Road	75 meters, E	75 meters, E	75 meters, E	75 meters, E	75 meters, E
Traffic Count (ADT)	32,000	32,000	32,000	32,000	32,000
Groundcover	Gravel	Gravel	Gravel	Gravel	Gravel

PINNACLE PEAK

County ID: PP
AQS ID: 04-013-2005
Address: 25000 N Windy Walk, Scottsdale
Coordinates: 33.71231N – 111.85272W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	23
# Accuracy Checks Performed Annually	4
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	02/01/1988
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Urban
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	11.9 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	20.0 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	Happy Valley Rd.
Distance and Direction to Road	61 meters, S
Traffic Count (ADT)	16,000
Groundcover	Paved/Grass

RIO VERDE

County ID: RV
AQS ID: 04-013-9706
Address: 25608 N Forest Rd., Rio Verde
Coordinates: 33.71881N – 111.67183W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**Ozone**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	27
# Accuracy Checks Performed Annually	5
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly
Frequency of Flow Rate Verification	N/A
-Appendix C Requirements	
Sampler Make & Model	API M400
Date Established	01/01/1997
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Max Ozone Concentration
Monitoring Scale	Urban
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	6.2 meters
Airflow Arc	360º
Probe Sample Line Material	Teflon
Pollutant Sample Residence Time	9.7 sec
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	16 meters, S
Nearest Major Roadway	Forest Rd
Distance and Direction to Road	43 meters, E
Traffic Count (ADT)	Unknown
Groundcover	Paved

SOUTH PHOENIX

County ID: SP
AQS ID: 04-013-4003
Address: 33 W Tamarisk, Phoenix
Coordinates: 33.40316N – 112.07533W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information					
Pollutant/Monitor Type	**Ozone**	**CO**	**$PM_{2.5}$**	**$PM_{2.5}$**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	1 in 3 day	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	Filters Weighed In-House	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	Yes	Yes	N/A
-Appendix A Requirements					
# Precision Checks Performed Annually	26	10	N/A	21	25
# Accuracy Checks Performed Annually	4	1	3	2	2
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	Every 6 Weeks		Bi-Monthly
-Appendix C Requirements					
Sampler Make & Model	API M400	API M300	Thermo 2025	Thermo FDMS-TEOM 1405-DF	Thermo TEOM 1400AB
Date Established	10/01/1999	10/01/1999	01/01/2005	05/01/2010	7/1/2007
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM	FEM
-Appendix D Requirements					
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes	Yes
-Appendix E Requirements					
Distance between collocated samplers	N/A	N/A	N/A	N/A	N/A
Probe Inlet Height	4.9 meters	4.9 meters	5.5 meters	5.5 meters	5.4 meters
Airflow Arc	360º	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A	N/A	N/A
Pollutant Sample Residence Time	6.9 sec	N/A	N/A	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A	N/A	N/A
Nearest Major Roadway A	Central Ave	Central Ave	Central Ave	Central Ave	Central Ave
Distance and Direction to Road	168 meters, E	168 meters, E	168 meters, E	168 meters, E	165 meters, E
Traffic Count (ADT)	24,000	24,000	24,000	24,000	24,000
Nearest Major Roadway B	Broadway Rd	Broadway Rd	Broadway Rd	Broadway Rd	Broadway Rd
Distance and Direction to Road	385 meters, N	385 meters, N	385 meters, N	385 meters, N	385 meters, N
Traffic Count (ADT)	18,000	18,000	18,000	18,000	13,000
Groundcover	Paved	Paved	Paved	Paved	Paved

SOUTH SCOTTSDALE

County ID: SS
AQS ID: 04-013-3003
Address: 2857 N Miller Rd., Scottsdale
Coordinates: 33.47968N – 111.91721W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information					
Pollutant/Monitor Type	**Ozone**	**CO**	**NO_2**	**SO_2**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous	Continuous	1 in 6 day
Analysis Method (filters only)	N/A	N/A	N/A	N/A	Filters Weighed In-House
Any Proposal to Remove or Move Monitor?	No	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	N/A	N/A
-Appendix A Requirements					
# Precision Checks Performed Annually	26	10	13	26	55(Collocated)
# Accuracy Checks Performed Annually	4	1	2	5	2
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	N/A	N/A	Quarterly
-Appendix C Requirements					
Sampler Make & Model	API M400	API M300	API M200	API M100	Anderson SSI
Date Established	01/01/1974	01/01/1974	10/01/1975	01/01/1984	07/01/1987
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FEM	FRM
-Appendix D Requirements					
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Urban	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes	Yes
-Appendix E Requirements					
Distance between collocated samplers	N/A	N/A	N/A	N/A	6.5 meters
Probe Inlet Height	5.8 meters	5.8 meters	5.8 meters	5.8 meters	5.1 meters
Airflow Arc	360º	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	Teflon	Teflon	N/A
Pollutant Sample Residence Time	11.1 sec	N/A	11.1 sec	12.1 sec	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A	N/A
Spacing from Trees	14 meters, S	14 meters, S	14 meters, S	14 meters, S	14 meters, S
Nearest Major Roadway A	Thomas	Thomas	Thomas	Thomas	Thomas
Distance and Direction to Road	66 meters, N	66 meters, N	66 meters, N	66 meters, N	62 meters, N
Traffic Count (ADT)	33,000	33,000	33,000	33,000	33,000
Nearest Major Roadway B	Miller	Miller	Miller	Miller	Miller
Distance and Direction to Road	32 meters, W	32 meters, W	32 meters, W	32 meters, W	35 meters, W
Traffic Count (ADT)	13,000	13,000	13,000	13,000	13,000
Groundcover	Paved	Paved	Paved	Paved	Paved

TEMPE
County ID: TE
AQS ID: 04-013-4005
Address: 1525 S College, Tempe
Coordinates: 33.4124N – 111.93473W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information		
Pollutant/Monitor Type	**Ozone**	**CO**
Sampling Schedule	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A
-Appendix A Requirements		
# Precision Checks Performed Annually	26	10
# Accuracy Checks Performed Annually	4	1
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly
Frequency of Flow Rate Verification	N/A	N/A
-Appendix C Requirements		
Sampler Make & Model	API M400	API M300
Date Established	07/01/2000	07/01/2000
Classification	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM
-Appendix D Requirements		
Monitoring Objective	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Sep-Mar
Network Meets Minimum Number of Monitors Required?	Yes	Yes
-Appendix E Requirements		
Distance between collocated samplers	N/A	N/A
Probe Inlet Height	4.4 meters	4.4 meters
Airflow Arc	360º	360º
Probe Sample Line Material	Teflon	Teflon
Pollutant Sample Residence Time	5.4 sec	N/A
Distance from Supporting Structure	N/A	N/A
Distance from Obstructions	N/A	N/A
Distance to Furnace Flue	N/A	N/A
Spacing from Trees	N/A	N/A
Nearest Major Roadway A	College Ave	College Ave
Distance and Direction to Road	11 meters, W	11 meters, W
Traffic Count (ADT)	Unknown (secondary street)	Unknown (secondary street)
Nearest Major Roadway B	Apache	Apache
Distance and Direction to Road	370 meters, N	370 meters, N
Traffic Count (ADT)	25000	25000
Groundcover	Gravel	Gravel

WEST CHANDLER

County ID: WC
AQS ID: 04-013-4004
Address: 275 S Ellis, Chandler
Coordinates: 33.29898N – 111.88431W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information			
Pollutant/Monitor Type	**Ozone**	**CO**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A
-Appendix A Requirements			
# Precision Checks Performed Annually	26	10	21
# Accuracy Checks Performed Annually	4	1	4
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	N/A
Frequency of Flow Rate Verification	N/A	N/A	Monthly
-Appendix C Requirements			
Sampler Make & Model	API M400	API M300	Anderson SSI
Date Established	07/01/2000	07/01/2000	07/01/2000
Classification	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM
-Appendix D Requirements			
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Middle
Sampling Season	Jan-Dec	Sep-Mar	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes
-Appendix E Requirements			
Distance between collocated samplers	N/A	N/A	N/A
Probe Inlet Height	4.4 meters	4.4 meters	4.4 meters
Airflow Arc	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	N/A
Pollutant Sample Residence Time	4.6 sec	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A
Spacing from Trees	14 meters, E	14 meters, E	14 meters, E
Nearest Major Roadway A	Frye Rd	Frye Rd	Frye Rd
Distance and Direction to Road	23 meters, S	23 meters, S	25 meters, S
Traffic Count (ADT)	Unknown (secondary street)	Unknown (secondary street)	Unknown (secondary street)
Nearest Major Roadway B	Ellis St	Ellis St	Ellis St
Distance and Direction to Road	73 meters, W	73 meters, W	71 meters, W
Traffic Count (ADT)	Unknown (secondary street)	Unknown (secondary street)	Unknown (secondary street)
Groundcover	Paved/Gravel	Paved/Gravel	Paved/Gravel

.

WEST 43RD AVENUE

County ID: WF
AQS ID: 04-013-4009
Address: 3940 W Broadway, Phoenix
Coordinates: 33.40642N – 112.14434W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**PM_{10}**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	24
# Accuracy Checks Performed Annually	1
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	Thermo TEOM 1400AB
Date Established	04/01/2002
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Highest Concentrations
Monitoring Scale	Middle
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	5 meters
Airflow Arc	360º
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	Broadway Road
Distance and Direction to Road	37 meters, SE
Traffic Count (ADT)	Unknown
Groundcover	Gravel

WEST PHOENIX

County ID: WP
AQS ID: 04-013-0019
Address: 3847 W Earll, Phoenix
Coordinates: 33.48385N – 112.14257W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information						
Pollutant/Monitor Type	**Ozone**	**CO**	**NO_2**	**$PM_{2.5}$**	**$PM_{2.5}$**	**PM_{10}**
Sampling Schedule	Continuous	Continuous	Continuous	1 in 3 days	Continuous	Continuous
Analysis Method (filters only)	N/A	N/A	N/A	Filters Weighed In-House	N/A	N/A
Any Proposal to Remove or Move Monitor?	No	No	No	No	No	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A	N/A	N/A	Yes	Yes	N/A
-Appendix A Requirements						
# Precision Checks Performed Annually	26	26	26	29 (Collocated)	23	24
# Accuracy Checks Performed Annually	4	3	6	3	2	2
All Precision/Accuracy Reports Submitted to AQS?	Yes	Yes	Yes	Yes	Yes	Yes
Annual Data Certification Submitted?	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012	Submitted May 2012
Frequency of One-Point QC Check	Bi-Weekly	Bi-Weekly	Bi-Weekly	N/A	N/A	N/A
Frequency of Flow Rate Verification	N/A	N/A	N/A	Every 6 weeks	Bi-Weekly	Bi-Weekly
-Appendix C Requirements						
Sampler Make & Model	API M400	API M300	API M200	Thermo 2025	Thermo FDMS-TEOM 1400AB	Thermo TEOM 1400AB
Date Established	01/01/84	01/01/84	05/24/90	06/13/00	09/01/05	02/01/88
Classification	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Method (FRM, FEM, ARM)	FEM	FRM	FRM	FRM	None	FEM
-Appendix D Requirements						
Monitoring Objective	Population Exposure	Population Exposure	Population Exposure	Highest Concentration	Highest Concentration	Population Exposure
Monitoring Scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling Season	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes	Yes	Yes	Yes	Yes	Yes
-Appendix E Requirements						
Distance between collocated samplers	N/A	N/A	N/A	2.3 meters	N/A	N/A
Probe Inlet Height	4.3 meters	4.3 meters	4.3 meters	2.8 meter	3.6 meter	2.7 meters
Airflow Arc	360º	360º	360º	360º	360º	360º
Probe Sample Line Material	Teflon	Teflon	Teflon	N/A	N/A	N/A
Pollutant Sample Residence Time	4.4 sec	N/A	4.4 sec	N/A	N/A	N/A
Distance from Supporting Structure	N/A	N/A	N/A	N/A	N/A	N/A
Distance from Obstructions	N/A	N/A	N/A	N/A	N/A	N/A
Distance to Furnace Flue	N/A	N/A	N/A	N/A	N/A	N/A
Spacing from Trees	N/A	N/A	N/A	N/A	N/A	N/A
Nearest Major Roadway	Thomas	Thomas	Thomas	Thomas	Thomas	Thomas
Distance and Direction to Road	360 meters, S	360 meters, S	360 meters, S	360 meters, S	360 meters, S	360 meters, S
Traffic Count (ADT)	29,000	29,000	29,000	29,000	29,000	29,000
Groundcover	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel

ZUNI HILLS
County ID: ZH
AQS ID: 04-013-4016
Address: 10851 West Williams Rd., Sun City, AZ
Coordinates: 33.68674N, -112.29417W
Metropolitan Sampling Area (MSA): 6200 Phoenix-Mesa

-General Information	
Pollutant/Monitor Type	**PM_{10}**
Sampling Schedule	Continuous
Analysis Method (filters only)	N/A
Any Proposal to Remove or Move Monitor?	No
Is site suitable for comparison to $PM_{2.5}$ NAAQS per Part 58.30?	N/A
-Appendix A Requirements	
# Precision Checks Performed Annually	24
# Accuracy Checks Performed Annually	2
All Precision/Accuracy Reports Submitted to AQS?	Yes
Annual Data Certification Submitted?	Submitted May 2012
Frequency of One-Point QC Check	N/A
Frequency of Flow Rate Verification	Bi-Weekly
-Appendix C Requirements	
Sampler Make & Model	Thermo TEOM 1400AB
Date Established	12/01/09
Classification	SLAMS
Method (FRM, FEM, ARM)	FEM
-Appendix D Requirements	
Monitoring Objective	Population Exposure
Monitoring Scale	Neighborhood Scale
Sampling Season	Jan-Dec
Network Meets Minimum Number of Monitors Required?	Yes
-Appendix E Requirements	
Distance between collocated samplers	N/A
Probe Inlet Height	2.3 meters
Airflow Arc	360º
Probe Sample Line Material	N/A
Pollutant Sample Residence Time	N/A
Distance from Supporting Structure	N/A
Distance from Obstructions	N/A
Distance to Furnace Flue	N/A
Spacing from Trees	N/A
Nearest Major Roadway	Williams Rd
Distance and Direction to Road	200 meters, N
Traffic Count (ADT)	Unknown (residential street)
Groundcover	Lawn/Dirt

APPENDIX III - PUBLIC NOTICE AND COMMENT INFORMATION

Public Notice Period

To fulfill the requirements of 40CFR58 §58.10, the Maricopa County Air Quality Department posted a draft copy of this Network Review on its website on July 20,2012. In an effort to notify the public of its network review, the department published information on a Network Review Public Workshop through the following outlets:

- News item on department website.
- Electronic feed to subscribers.
- Public Notice posted in the Arizona Republic, a newspaper of general circulation in Maricopa County.

News Release

The following is a copy of the news release that was advertised in the Arizona Republic:

Public Notice

The Maricopa County Air Quality Department will hold a public meeting to discuss its 2011 Air Monitoring Network Review on August 23, 2012 at 1:00 p.m.. The meeting will be held at the Air Monitoring Division's offices at 2145 S. 11th Ave. suite 170, Phoenix, AZ 85007.
A copy of the draft network review is currently available on the department's website at the following website address:

http://www.maricopa.gov/aq/divisions/monitoring/network.aspx

Hard copies of the document may be requested from the department's Records Management Coordinator at (602) 506-6201 or at the department's address: 1001 North Central Avenue, Phoenix, Arizona 85004. Arrangements may be made to view the information every Monday through Friday (excluding major holidays) between 8:00 a.m. and 4:30 p.m. There is a small fee for copying available documents.

The 2011 Air Monitoring Network Review covers ambient air monitoring activity captured by the department's 25 air monitoring sites throughout 2011. The Air Monitoring Network Review also provides a summary of the pollutants measured by Maricopa County, a look at the air monitoring network design and monitoring site details and statistics from the past year among other information. Additional information on the draft Air Monitoring Network Review may be obtained by contacting Ben Davis at 2145 S 11th Avenue #170, Phoenix, AZ 85007 or (602) 258-5155 x221.

The purpose of August 23, 2012 public meeting is to receive comments from the public on the draft Network Review. Members of the public may comment in person or through written statements to the department.

Written comments shall state the name and mailing address of the person making comment and be signed by that person or authorized agent or attorney. Written comments on the draft document are due to the department by August 24, 2012 at 5:00 p.m.

A sign language and/or Spanish interpreter will be made available upon request with 72 hours notice. Additional reasonable accommodations will be made available to the extent possible within the time frame of the request.

Public Meeting Announcement:

NEWS

for immediate release

MARICOPA COUNTY
Air Quality
1001 North Central Avenue
Phoenix, AZ 85004
Ph 602-506-6713
www.maricopa.gov

2011 Air Monitoring Network Review

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The 2011 Air Monitoring Network Review covers ambient air monitoring activity captured by the department's 24 air monitoring sites throughout 2011. The Air Monitoring Network Review also provides a summary of the pollutants measured by Maricopa County, a look at the air monitoring network design and monitoring site details and statistics from the past year among other information.

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About Maricopa County Air Quality Department

The Maricopa County Air Quality Department is a regulatory agency whose goal is to ensure federal clean air standards are achieved and maintained for the residents and visitors of Maricopa County. The department is governed by the Maricopa County Board of Supervisors and follows air quality standards set forth by the federal Clean Air Act.

The department offers air quality information and resources on its Clean Air Make More website. Visit www.CleanAirMakeMore.com to learn more.

Follow us on Twitter: http://twitter.com/cleanairmakemor
Friend us on Facebook: www.facebook.com/CleanAirMakeMore

Attendees List:

2011 Maricopa County Air Monitoring Network Review